Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-027

To: ENERGY DIVISION
Prepared by: Christopher Norman
Title: Senior Engineer
Dated: 08/23/2012

Question 01:

Question 5.3.1

The PEA states that the 500-kV conductor would be 2,156 kcmil ACSR.

a. Provide the normal and emergency ampacity for the proposed conductor.
b. Provide the size and type as well as the normal and emergency ampacity of the existing conductor used for the Valley–Serrano 500-kV Transmission Line.
c. Identify the parameters used to establish the respective ampacities, such as ambient temperature, conductor temperature rise, wind speed, and loading cycle etc.
d. If the rating of the proposed conductor differs from that used for the Valley–Serrano 500-kV Transmission Line, explain the reason for the differences.

Response to Question 01:

a. Normal Rating = 3950 Amps for 2-Bundle 2156 kcmil ACSR Bluebird
Emergency Rating = 5330 Amps for 2-Bundle 2156 kcmil ACSR Bluebird for 4 hours

b. Same as **a.**

c. **Rating Parameters:**
Ambient Temperature = 104 Deg F
Wind Speed = 4 ft/sec
Atmospheric Condition = Clear
Time and Date = June 10th, 1:00pm
Direction of Line = North - South
Elevation = 500 ft.
Latitude = 34 Deg North
Emissivity and Absoptivity = 0.5
For ACSR:
Normal = 194 Deg F max conductor temperature continuous operation
Emergency = 275 Deg F max conductor temperature for 4 hours

d. No Difference.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-028

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 10/10/2012

Question 01:

Question 5.3.2

The PEA states that the proposed 115-kV conductor would be 954-kcmil stranded aluminum conductor and 4/0 aluminum steel-reinforced conductor would be used for grounding. At locations requiring higher tension, 954-kcmil aluminum steel-reinforced conductor would be used.

a. Provide the normal and emergency ampacity for the proposed 954-kcmil conductor.
b. Provide the size and type as well as the normal and emergency ampacity of the existing conductor used for each of the 115-kV segments that would be modified as part of the proposed project (115-kV Segments 1 through 8; see attached map).
c. Identify the parameters used to establish the respective ampacities, such as ambient temperature, conductor temperature rise, wind speed, and loading cycle etc.
d. If the rating of the proposed 954-kcmil conductor differs from that existing conductor used for the specified 115-kV segment, explain the reason for the differences.
e. Describe each type of location along 115-kV subtransmission lines that typically require higher tension and, thus, would likely require 954-kcmil aluminum steel-reinforced conductor for the proposed project.

Response to Question 01:

a. Provide the normal and emergency ampacity for the proposed 954-kcmil conductor.

The overhead 954 kcmil stranded aluminum conductor (SAC) proposed for this project has the following ampacity ratings:
Normal conditions (continuous) – 1,090 amps
Emergency conditions (4 hours) – 1,470 amps

b. Provide the size and type as well as the normal and emergency ampacity of the existing conductor used for each of the 115-kV segments that would be modified as part of the proposed project (115-kV Segments 1 through 8; see attached map).

Segment 1 – 653 kcmil ACSR
Segment 2 – 653 kcmil ACSR

Segment 3 – 653 kcmil ACSR
Segment 4 – 653 kcmil ACSR
Segment 5 – 653 kcmil ACSR
Segment 6 – No existing conductor as this is the first circuit on a new pole line segment.
Segment 7 – 653 kcmil ACSR
Segment 8 – No existing conductor as this is the first circuit on a new pole line segment.

653 kcmil ACSR Conductor
Normal conditions (continuous) – 920 amps
Emergency conditions (4 hours) – 1,240 amps

c. Identify the parameters used to establish the respective ampacities, such as ambient temperature, conductor temperature rise, wind speed, and loading cycle etc.

For the purpose of determining overhead transmission conductor ampacities, SCE assumes the following parameters:

- Latitude: 34 deg N
- Time: 13 hours
- Ambient Temperature: 104 °F (40 °C)
- Wind Speed: 4 ft/sec
- Wind Direction: perpendicular to the wires
- Line Direction: 0 degrees azimuth (N-S direction)
- Atmosphere: clear
- Absorbtivity and emissivity: 0.5
- Altitude: 500 ft (unless the location is in the mountains, then altitude should be estimated and ampacity adjusted accordingly).

For SAC conductors:

Normal Rating:
Conductor temperature: 85 deg-C
Loading Cycle: continuous

4-hr Emergency Rating:
Conductor Temperature: 130 deg-C
Loading Cycle: 4 hours

For ACSR conductors:

Normal Rating:
Conductor temperature: 90 deg-C
Loading Cycle: continuous

4-hr Emergency Rating:
Conductor Temperature: 135 deg-C

Loading Cycle: 4 hours

d. If the rating of the proposed 954-kcmil conductor differs from that existing conductor used for the specified 115-kV segment, explain the reason for the differences.

954 kcmil SAC conductor has a higher capacity rating than that of the existing 653 ACSR conductor primarily because it has a larger cross-sectional area.

e. Describe each type of location along 115-kV subtransmission lines that typically require higher tension and, thus, would likely require 954-kcmil aluminum steel reinforced conductor for the proposed project.

Where new conductor is to be used, SCE's preliminary design incorporates the use of 954 kcmil SAC conductor. The Alberhill System Project does not have any locations identified, as part of the 115 kV subtransmission line construction, where it is expected that the use of 954 kcmil aluminum conductor steel reinforced (ACSR) would be required.

SCE's Amended PEA (Section 3.1.3) states "If needed, 954 aluminum conductor steel reinforced ground conductor would be used at locations requiring higher tension." The word "ground" was included in error and with its removal, the statement is accurate. In review of SCE's preliminary design, it is not expected that it would be required to use 954 kcmil ACSR, however, this is subject to change to during final engineering.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: 8/24/12
Dated: 03/30/2012

Question 01:

Question 14.7

a. Pursuant to California Public Utilities Code Section 1002.3, alternatives to transmission facilities must be considered for CPCN applications. Discuss the feasibility of implementing each of the following as alternatives to constructing the proposed project:

    1. Energy Conservation Programs (e.g., installation of high-efficiency heating and cooling systems and other appliances, insulation and weatherization, and energy efficient lighting) within the Valley South Electrical Needs Area (ENA);

    2. Distributed Generation: electrical generation installations within the Valley South ENA;

Response to Question 01:

For all Questions please use SCE's definitions as follows for the responses:

Energy efficiency refers to activities or programs that stimulate customers to reduce energy use by making investments in more efficient equipment or controls while maintaining a comparable level of service as perceived by the customer (e.g., refrigerator rebates).

Energy conservation refers to customer behaviors that reduced energy consumption. For example, customers with increased access to their usage information may decide to turn off extra lights, or raise thermostats to reduce their electricity usage.

Demand response refers to the ability of a customer to reduce or shift usage in response to a financial incentive. Demand response programs may include dynamic pricing/tariffs and load control programs enabled by the Edison SmartConnect program.

1. Energy Conservation Programs (e.g., installation of high-efficiency heating and cooling systems and other appliances, insulation and weatherization, and energy efficient lighting) within the Valley South Electrical Needs Area (ENA).

Answer: *Description:*

Demand Management Conservation programs are designed to reduce customer energy consumption. CPUC regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire lowest cost resources. These programs are designed to either reduce the overall use of energy or to shift the consumption of energy to off-peak times. SCE offers a number of energy efficiency programs in California, under the umbrella of its Rebate and Savings program. The specific programs are divided into residential, business, builders and buyers, and energy management assistance programs.

Rationale for Elimination:
Reductions in demand through energy conservation programs are part of SCE's future operations and are incorporated into its long-term peak load forecasts. Existing Demand Management Conservation programs run by SCE include rebates on energy-efficient appliances, incentives for customer-owned solar generation, a metering system that allows SCE customers with smart thermostats and appliances to automatically respond during critical peak pricing and reliability events, and more (SCE, 2011). However, these programs require voluntary participation. As separate and stand-alone programs, SCE cannot guarantee that such voluntary programs would provide either the capacity or reliability needs of SCE in the ENA, as stated in the objectives for the Proposed Project. For these reasons, this alternative was eliminated from further consideration.

2. Distributed Generation

Answer: *Distributed Generation:*

Distributed generation is electricity production that is on-site or close to the load center that could be interconnected at distribution, sub-transmission, or transmission system voltages. Distributed generation is generally limited to systems less than 20 MW. Distributed generation does not include hydroelectricity, geothermal, non-combined heat and power related digester gas, landfill gas, and municipal solid waste.

In March 2007 the CEC released the staff report *Distributed Generation and Cogeneration Policy Roadmap for California* (CEC, 2007*).* The report included a vision for Distributed Generation and Cogeneration of being significant components of California's electrical system, meeting over 25 percent of the total peak demand. To achieve its vision, California will support incentives in the near term, transition to new market mechanisms, and reduce remaining institutional barriers.

In 2010, the California Attorney General's office released the "*Clean Energy Jobs Plan"* that provided possible mechanisms to create 12,000 MW of localized energy generation in California. The Clean Energy Jobs Plan called for California to develop 12,000 MW of localized energy by year 2020. The Plan described localized energy as onsite or small energy systems located close to where energy is consumed that can be constructed quickly (without new transmission lines) and typically without any environmental impact.

Rationale for Elimination:
The distributed generation industry is still a nascent industry that survives despite some difficult market conditions. There are numerous institutional, industry and market barriers that have impeded the growth and adoption of the industry to date. Although the potential is recognized, distributed generation is not currently a significant energy resource. As of 2005, distributed generation penetration is 2.5 percent of total peak demand in California (CEC, 2007).

A Distributed Generation Alternative would involve deployment of distributed generation in the form of many small projects within the ENA at a pace more aggressive than SCE anticipates, or is projected in the Clean Energy Jobs Plan, which identified year 2020 as the target date for developing 12,000 MW of distributed energy. This timeframe exceeds the capacity needs projections within the ENA. Even if distributed generation energy supply sources in the ENA were built, substation capacity would continue to be a limiting factor requiring additional infrastructure. Because the potential for, and timing of, distributed generation within the ENA is uncertain and would require additional substation capacity, this alternative was not carried forward for analysis.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: regulatory Representative
Dated: 03/30/2012

Question 02:

Question 14.7

a. Pursuant to California Public Utilities Code Section 1002.3, alternatives to transmission facilities must be considered for CPCN applications. Discuss the feasibility of implementing each of the following as alternatives to constructing the proposed project:

    3. Renewable and Conventional Generation: electrical generation installations including existing and proposed power plants, peaking generators, solar fields, wind developments, biomass/gas facilities, and geothermal facilities that would connect to the Valley South 115-kV System downstream of Valley Substation (South); or
    4. Combination of one or more of the alternatives listed above.

Response to Question 02:

3.
Solar Photovoltaic (PV)
Beginning with the 2012-2021 Peak Demand Forecast, SCE's Electrical Needs Area forecast planning has also incorporated reductions associated with PV generation. In compiling a Peak Demand Forecast, SCE assumes that approximately 15% of PV output is dependable during daylight hours, and that PV penetration will continue at the same rate as that of 1998-2010. However, because there is currently no technological way to account for the amount of PV-generated electricity being consumed by a PV user, SCE has had to estimate the future benefits associated with that technology. In light of the limitations noted above regarding the extent to which PV generation can be inhibited by weather and environmental factors, and in light of the fact that it typically does not produce maximum output, SCE assumes that about 15% of a PV output is dependable, and only about 11.7% of the PV nameplate would be dependable and applicable to the peak demand.At that rate, PV would have to be installed at about 8-9 times the amount of needed peak demand if no other method is followed.

The most relevant technical issue with solar PV that limits its power output is its inability to maintain a consistent amount of radiant energy upon the panels throughout the day, which results in an inconsistent and undependable generation profile. While some systems are able to track the sun as it moves across the sky, the vast majority of installed solar PV is stationary, which means

it only gets its optimal exposure when the sun is directly overhead at mid-day. Other factors such as shading due to cloud cover or obstructions such as dirty panels and trees further limit PV output. While these factors affect the overall output of the system, even more important for Peak Demand Forecast purposes is the fact that PV's peak generation output does not coincide with peak demand at the substation level. Substation load demand peaks in the mid-afternoon (around 3:00 p.m. – 5:00 p.m.) and residential load peaks in the late afternoon/early evening (5:00 p.m. – 8:00 p.m.), while solar generation typically peaks around mid-day (around 11:00 a.m. – 1:00 p.m.).In contrast, SCE's distribution system is not dependent on weather conditions or time of day to convey power to SCE's customers because it is fed by the bulk electric system which is made up of large conventional power plants or other dependable generation sources. These conventional generators are powered by diverse energy sources (fossil fuel, nuclear,hydroelectric, and renewable) that as a system can be controlled and ramped up or down to match load regardless of weather conditions or time of day.

Proposed Power Plants

During SCE's annual planning process, the actual amount of local generation that would be considered as an offset in the planning of adequate transformation to serve the local electrical system needs would be based on at least three years of operating history during the peak period as defined in Appendix B of SCE's Transmission Planning Criteria and Guidelines (TPCG). Based on that operating history, the amount of generation output to be considered in the planning process could in fact be less than the maximum output of the local generation in question. Review of the status and output of the generator would occur annually to determine its dependability status. When a generator has not even been constructed, the dependability of such a generator cannot be determined and thus the generator cannot be considered for purposes of serving local electrical system needs.

SCE's TPCG Section 2.2.2.4.C also states:

> *"The long-term Likely Contingency loading level will not be exceeded should the expected amount of local generation be reduced to zero with all transformers in service."*

The electrical demand of SCE's Valley South 115 kV System with the expected amount of local generation reduced to zero is projected to exceed the long-term Likely Contingency loading level with all transformers in-service in 2015

Consideration of a generation project not yet constructed as a solution to a reliability-based project to increase transformer capacity and system interconnectivity would pose an unacceptable risk to SCE's ability to reliably serve electrical demand needs of its customers in the San Jacinto Valley area in a timely manner.
The Alberhill System Project basic objectives are listed below as taken from Section 1.4 of Chapter 1 of SCE's Alberhill System Project Proponents Environmental Assessment.

- Serve current and long-term projected electrical demand requirements in the Electrical Needs Area

- Increase system operational flexibility and maintain system reliability by creating system ties that establish the ability to transfer substations from the current Valley South 115 kV System
- Transfer a sufficient amount of electrical demand from the Valley South 115 kV System to maintain a positive reserve capacity on the Valley South 115 kV System through the 10-year planning horizon
- Provide safe and reliable electrical service consistent with SCE's Transmission Planning Criteria and Guidelines
- Increase electrical system reliability by constructing a project in a location suitable to serve the ENA
- Meet project need while minimizing environmental impacts
- Meet project need in a cost-effective manner

Any speculative power plants would fail to meet the following Alberhill project objectives:

- ***Serve current and long-term projected electrical demand requirements in the ENA***

Cannot be declared dependable until such a time that it may qualify, the generation project may not be used for planning to serve the current and long-term projected electrical demand requirements in the Electrical Needs Area. In contrast, SCE's Alberhill System Project proposes an ultimate capacity of 1,680 MVA of transformation to serve the Electrical Needs Area versus the Sun Valley Project output. The Alberhill System Project would provide a much greater ability to serve the current and long-term projected electrical demand requirements in the Electrical Needs Area.

- ***Increase system operational flexibility and maintain system reliability by creating system ties that establish the ability to transfer substations from the current Valley South 115 kV System***

Would not include or provide for any 115 kV line construction outside of the construction of the two gen-tie lines, the Valley South 115 kV System operational flexibility and system reliability is not increased.

- ***Provide safe and reliable electrical service consistent with SCE's TPCG***

Because a speculative project cannot be declared dependable until such a time that it may qualify through the generation process,consideration of the Sun Valley Project in lieu of SCE's Alberhill System Project is not consistent with SCE's TPCG and would not meet the reliability needs of the ENA

Wind

Within the Electrical Needs Area, there is less than .05 MW produced of wind generation. This small amount of generation is included in the forecast for load growth and generation. Wind generation in the ENA is not reliable or does not provide enough generation to serve as a system alternative to the Alberhill Project.

Geothermal

Most of California's developed geothermal resources are located in Sonoma, Lake, Imperial, and Inyo Counties. Other geothermal resource areas in the State are found in Lassen, Mono, Siskiyou,and Modoc Counties. Some of the sites for new geothermal development are located in areas characterized by sensitive cultural and environmental concerns. Other issues that could delay development include permitting and access to transmission.

Given that these geothermal plants are not in the Electrical Needs Area, they were not considered as a system alternative for the Alberhill Project.

4. The combination of these proposed system alternatives are incorporated in SCE's annual planning process. Yet even as a combination of alternatives, these sources do not meet the Alberhill project objectives:

- Serve current and long-term projected electrical demand requirements in the ENA
- Increase system operational flexibility and maintain system reliability by creating system ties that establish the ability to transfer substations from the current Valley South 115 kV System
- Provide safe and reliable electrical service consistent with SCE's TPCG .

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: Regulatory Representative
Dated: 03/30/2012

Question 03:

b. Discuss the status of SCE's Smart Meter program, Summer Discount Plan (air conditioner cycling), Technical Assistance and Technology Incentives Program (TA & TI), and Solar Rooftop Program in terms of existing and projected participation and effects on electrical demand within the Valley South Electrical Needs Area (ENA).

Response to Question 03:

SCE has deployed Edison SmartConnect meters to customers with demands less than 200 kW within the Wildomar and Menifee districts (i.e., the Valley South Electrical Needs Area (ENA)). Edison SmartConnect-enabled demand response and energy conservation programs are currently available to customers within the ENA. Table 1 provides the number of customers on SCE's Edison SmartConnect-enabled demand response and energy conservation programs. However, SCE has not projected participation rates or calculated any demand response or energy conservation effects specifically for the ENA.

Table 2 provides the enrollments in SCE's Auto-DR and Technical Assistance and Technology Incentives Program (TA & TI) as of April 30, 2012. Enrollment forecasts for Auto-DR and TA&TI have not been calculated specifically for the ENA.

The attached 2012 Edison SmartConnect Annual Demand Response and Energy Conservation Report describes all of SCE's demand response and energy conservation programs and results for the year ended 2011.

Table 1: Edison SmartConnect Program Statistics
As of April 30, 2012
Menifee and Wildomar Districts

Demand Response	Menifee	Wildomar
Save Power Day Incentive	182,472	136,509
Summer Advantage Incentive	0	0
Time-of-use Rates	710	495
PCT-enabled SDP	0	0

Energy Conservation		
Web Presentment Tools	74,376	71,401
Budget Assistant	17,636	20,928
In-Home Display	0	0

Table 2: Auto-DR and Technical Assistance and Technology Incentives Program (TA & TI) Enrollments as of April 30, 2012 Menifee and Wildomar Districts		
	Menifee	**Wildomar**
Auto-DR / TA&TI	6	19

1 attachment

R.07-01-041 DR OIR_SCE Compliance Filing Pursuant to D.08-09-039.pdf

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Engineer
Dated: 03/30/2012

Question 04:

c. Provide SCE's latest data regarding residential and nonresidential onsite generation by identifying the megawatt capacity installed in the Valley South ENA from (i) residential self-generation projects, (ii) non-residential selfgeneration projects, and (iii) any other renewable energy projects that would either provide capacity to or remove demand from the Valley South ENA.

Response to Question 04:

Please see the table below which provides the most current nameplate values of residential and nonresidential on-site generation (predominately solar) in MW installed and forecasted to be installed for the ENA. This type of data is incorporated in SCE's annual planning process (beginning in 2011 for the years forecasted years 2012-2021) and is already included in the most recently provided load versus capacity tables (provided on April 4, 2012 in answer to Data Request SCE-020 #6). There were no other renewable generation projects within the ENA.

Summary of NEM MW Installed and Forecasted through 2021 in Electrical Needs Area										
Electrical Needs Area	2005-2012*	2013	2014	2015	2016	2017	2018	2019	2020	2021
	Historical and Forecasted NEM Installation Values (MW)									
Non Residential	6.59	0.99	1.14	1.31	1.50	1.73	1.99	2.29	2.63	3.02
Residential	6.30	0.94	1.09	1.25	1.44	1.65	1.90	2.18	2.51	2.89
Total Capacity Cumulative	**12.89**	**14.82**	**17.05**	**19.60**	**22.54**	**25.92**	**29.81**	**34.28**	**39.43**	**45.34**

* as of 8/29/2012

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Engineer
Dated: 03/30/2012

Question 04-Update:

c. Provide SCE's latest data regarding residential and nonresidential onsite generation by identifying the megawatt capacity installed in the Valley South ENA from (i) residential self-generation projects, (ii) non-residential selfgeneration projects, and (iii) any other renewable energy projects that would either provide capacity to or remove demand from the Valley South ENA.

Response to Question 04-Update:

Data as of 8/29/2012

Summary of NEM MW Installed in Valley South Electrical Needs Area	
Electrical Needs Area	**Installed 2005 to Date**
Non Residential	6.3
Residential	6.2
Total Capacity Cumulative	**12.5**

This data summarizes the installed capacity of residential self-generation projects, non-residential self-generation projects, and any other renewable energy projects that would either provide capacity to or remove demand from the Valley South ENA.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: Regulatory Representative
Dated: 03/30/2012

Question 05:

d. According to SCE's data, how much electricity in megawatts has been provided by solar, wind, biomass/biogas, or other renewable energy generation facilities in the ENA yearly since 2005 and is projected to be provided from 2012 through 2021? How has SCE considered these resources in its peak demand projections or the Valley South 115-kV System?

Response to Question 05:

Please see the table below which provides the most current nameplate values of residential and nonresidential on-site generation (predominately solar but including wind, biomass/biogas, and other renewable sources) in MW installed and forecasted to be installed for the ENA. This type of data is incorporated in SCE's annual planning process (beginning in 2011 for the years forecasted years 2012-2021) and is already included in the most recently provided load versus capacity tables (provided on April 4, 2012 in answer to Data Request SCE-020 #6).

Summary of NEM MW Installed and Forecasted through 2021 in Electrical Needs Area										
Electrical Needs Area	2005-2012*	2013	2014	2015	2016	2017	2018	2019	2020	2021
	Historical and Forecasted NEM Installation Values (MW)									
Non Residential	6.59	0.99	1.14	1.31	1.50	1.73	1.99	2.29	2.63	3.02
Residential	6.30	0.94	1.09	1.25	1.44	1.65	1.90	2.18	2.51	2.89
Total Capacity Cumulative	**12.89**	**14.82**	**17.05**	**19.60**	**22.54**	**25.92**	**29.81**	**34.28**	**39.43**	**45.34**

* as of 8/29/2012

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: Regulatory Representative
Dated: 03/30/2012

Question 06:

e. To what extent and in what ways have (i) additional energy efficiency and demand response, (ii) new sources of rooftop solar and other customer-side generation, and (iii) increased distributed generation been considered in SCE's peak demand projections for the Valley South 115- kV System?

Response to Question 06:

SCE based its load forecast on the measured peak demand of the Electrical Needs Area substations. To the extent that energy efficiency, demand response and onsite generation programs have been implemented, their effects have been reflected in the measured peak demand recorded at each of the substations. However, SCE does not have a definitive way of measuring an exact or approximate amount of coincident peak demand reduced through the implementation of energy efficiency, demand response, and onsite generation.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-028

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 10/10/2012

Question 01:

Question 5.3.2

The PEA states that the proposed 115-kV conductor would be 954-kcmil stranded aluminum conductor and 4/0 aluminum steel-reinforced conductor would be used for grounding. At locations requiring higher tension, 954-kcmil aluminum steel-reinforced conductor would be used.

a. Provide the normal and emergency ampacity for the proposed 954-kcmil conductor.
b. Provide the size and type as well as the normal and emergency ampacity of the existing conductor used for each of the 115-kV segments that would be modified as part of the proposed project (115-kV Segments 1 through 8; see attached map).
c. Identify the parameters used to establish the respective ampacities, such as ambient temperature, conductor temperature rise, wind speed, and loading cycle etc.
d. If the rating of the proposed 954-kcmil conductor differs from that existing conductor used for the specified 115-kV segment, explain the reason for the differences.
e. Describe each type of location along 115-kV subtransmission lines that typically require higher tension and, thus, would likely require 954-kcmil aluminum steel-reinforced conductor for the proposed project.

Response to Question 01:

a. Provide the normal and emergency ampacity for the proposed 954-kcmil conductor.

The overhead 954 kcmil stranded aluminum conductor (SAC) proposed for this project has the following ampacity ratings:
Normal conditions (continuous) – 1,090 amps
Emergency conditions (4 hours) – 1,470 amps

b. Provide the size and type as well as the normal and emergency ampacity of the existing conductor used for each of the 115-kV segments that would be modified as part of the proposed project (115-kV Segments 1 through 8; see attached map).

Segment 1 – 653 kcmil ACSR
Segment 2 – 653 kcmil ACSR

Segment 3 – 653 kcmil ACSR
Segment 4 – 653 kcmil ACSR
Segment 5 – 653 kcmil ACSR
Segment 6 – No existing conductor as this is the first circuit on a new pole line segment.
Segment 7 – 653 kcmil ACSR
Segment 8 – No existing conductor as this is the first circuit on a new pole line segment.

653 kcmil ACSR Conductor
Normal conditions (continuous) – 920 amps
Emergency conditions (4 hours) – 1,240 amps

c. Identify the parameters used to establish the respective ampacities, such as ambient temperature, conductor temperature rise, wind speed, and loading cycle etc.

For the purpose of determining overhead transmission conductor ampacities, SCE assumes the following parameters:

- Latitude: 34 deg N
- Time: 13 hours
- Ambient Temperature: 104 °F (40 °C)
- Wind Speed: 4 ft/sec
- Wind Direction: perpendicular to the wires
- Line Direction: 0 degrees azimuth (N-S direction)
- Atmosphere: clear
- Absorbtivity and emissivity: 0.5
- Altitude: 500 ft (unless the location is in the mountains, then altitude should be estimated and ampacity adjusted accordingly).

For SAC conductors:

Normal Rating:
Conductor temperature: 85 deg-C
Loading Cycle: continuous

4-hr Emergency Rating:
Conductor Temperature: 130 deg-C
Loading Cycle: 4 hours

For ACSR conductors:

Normal Rating:
Conductor temperature: 90 deg-C
Loading Cycle: continuous

4-hr Emergency Rating:
Conductor Temperature: 135 deg-C

Loading Cycle: 4 hours

d. If the rating of the proposed 954-kcmil conductor differs from that existing conductor used for the specified 115-kV segment, explain the reason for the differences.

954 kcmil SAC conductor has a higher capacity rating than that of the existing 653 ACSR conductor primarily because it has a larger cross-sectional area.

e. Describe each type of location along 115-kV subtransmission lines that typically require higher tension and, thus, would likely require 954-kcmil aluminum steel reinforced conductor for the proposed project.

Where new conductor is to be used, SCE's preliminary design incorporates the use of 954 kcmil SAC conductor. The Alberhill System Project does not have any locations identified, as part of the 115 kV subtransmission line construction, where it is expected that the use of 954 kcmil aluminum conductor steel reinforced (ACSR) would be required.

SCE's Amended PEA (Section 3.1.3) states "If needed, 954 aluminum conductor steel reinforced ground conductor would be used at locations requiring higher tension." The word "ground" was included in error and with its removal, the statement is accurate. In review of SCE's preliminary design, it is not expected that it would be required to use 954 kcmil ACSR, however, this is subject to change to during final engineering.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-028

To: ENERGY DIVISION
Prepared by: Pam Blue-Fraijo
Title: Sub-transmission Planner
Dated: 10/10/2012

Question 04 (Part 1 & 2):

Question 14.9

1. The City of Menifee (attached) submitted a letter to the CPUC that states electrical lines on Murrieta Road between Craig Avenue and Beth Drive are located underground. Discuss the feasibility of installing the proposed 115-kV subtransmission line in
   (a) existing underground conduit and
   (b) in new underground conduit at this location.
2. Discuss the feasibility of spanning the roadway section along Murrieta Road between Craig Avenue and Beth Drive. Include a discussion of the size of 115-kV structures that would be required to allow for spanning.

Response to Question 04 (Part 1 & 2):

14.9 1.a: Subtransmission standards will not allow installation of 115kv underground cables in existing distribution conduits.
14.9 1.b: It could be possible to install a new conventional underground system (fully encased concrete duct bank) on Murrieta Road. This determination would require base maps, utility as built look ups, and ultimate street right of way plans/information from the City of Menifee.
14.9 2. : Spanning the existing distribution underground section along Murrieta Road between Craig Avenue and Beth Drive would not be feasible. A span of this length (approximately 1475 feet) does not fit within SCE's typical design standard for subtransmission circuits along city streets. To accommodate a span of this length, Tubular Steel Poles (TSP's) would be required at or near the intersections of Murrieta Road at Craig Avenue and at Beth Drive. The heights of the TPS's are estimated to be a minimum of 130 feet, with a base diameter a minimum of 55 inches and a foundation diameter a minimum of 7.5 feet. It is likely overhang easements will need to be acquired from the adjacent property owners to accommodate the "rise and swing" (blow-out) of the overhead conductors.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-028

To: ENERGY DIVISION
Prepared by: Wendy Worthy
Title: Biologist
Dated: 10/10/2012

Question 05:

Question 14.10

1. The figure, "Proposed 500kV Project Elements Aerial Overview" dated 8/16/2012 by SCE (attached) shows that 2012 biological surveys were conducted in areas along Lake Street north of Walker Canyon Road along the access road to towers R11 and R12, and along Black Powder Road and access roads to towers R4 through R8. Provide GIS survey data for these areas.

2. According to the figure, "Proposed 500kV Project Elements Aerial Overview" dated 8/16/2012 by SCE, the area along Hilltop Road [Hill Top Drive] between existing 500-kV towers M13-T2 and M13-T1 was not surveyed. Provide survey data for this area or explain why this area was not surveyed.

3. The report titled, "Valley-Ivyglen Subtransmission Line Project-Phase 2 AMEC Biological Survey Methods," dated September 4, 2012 does not include a description of the results for the surveys described. Provide additional details and discussion, such as the number of individuals/populations found, nesting status, and habitat quality for the following resources, which were observed during surveys:
   - Rufous-crowned sparrow (near proposed Alberhill Substation site);
   - San Diego black-tailed jackrabbit;
   - All occurrences of smooth tarplant, small-flowered microseris, Coulter's goldfields, and paniculate tarplant;
   - All occurrences of San Jacinto valley crownscale (federally endangered); and
   - Vernal pools.

4. The report titled, "Results of a 2011 final habitat assessment and follow-up trapping surveys for the federally endangered Stephens' kangaroo rat (Dipodomys stephensi) (SKR) and State Sensitive Los Angeles pocket mouse (Perognathus longimembris brevinasus) (LAPM)," dated August 27, 2011 (SJM Biological Consultants) describes the results of small mammal trapping along the proposed Alberhill System Project 115-kV routes and substation site. Provide GIS data for all locations where Dulzura kangaroo rat (a Western Riverside County MSHCP-protected species) were found in proximity to a component of the proposed project.

Response to Question 05:

1. Attached is ALL of the GIS biological resources data previously provided by AECOM that encompasses the 500 kV element of the proposed project referred to in this request. The attached GIS file is labeled "Alberhill_DG_14.10_Item1_All-BIO-Data_GIS-to-CPUC_8-17-12.zip"

2.This area was not previously part of the project but was considered a possibility later after the 2012 bio survey season was over. At this time, subject to detailed construction analysis and based on the current level of engineering analysis, SCE has no plans to work at M13T1, and the need for the access road between M13T1 and M13T2 is still being evaluated. Should this change and road use/tower work be needed, **only** the use of existing maintained access road and work within existing disturbance footprint at the base of M13T1 would be needed. No earth-moving ground disturbance or other activities that could potentially impact sensitive species would occur in this area.

Specific to the access road between M13T2 and M13T1:

- If used, there would be no project-specific road improvements (e.g., widening) and the entire area along the access road is very steep. Regardless, because of the steep terrain (i.e., safety issue for biologist), bio surveys would have been limited to what could have been observed directly within and adjacent to the existing maintained road footprint. This area does fall within the MSHCP survey areas for NEPS and BUOW. Regarding BUOW, no suitable habitat exists (unsuitable due to steep terrain and vegetation density/height) and no protocol-level surveys would be required. Regarding NEPS, because of SCE's road maintenance associated with the existing Serrano-Valley line, no suitable habitat for NEPS is present and no further surveys would be required.

- This area between M13T1 and M13T2 also falls within the SKR Core Reserve. This area would not have been surveyed for SKR as no suitable habitat exists (unsuitable due to steep terrain, dominated by dense stands of grassland and moderate to dense stands of sage scrub). Previous SKR trapping surveys were conducted along Lake Street and a smaller stretch of Hill Top Road in 2010 and 2011. These trapping areas exhibit the same habitat conditions as the maintained access road between M13T1 and M13T2. Due to lack of suitable habitat, SKR were not expected to occur in any of these areas; however, the trapping was conducted to confirm the anticipated lack of SKR presence.

Specific to Tower M13-T1 (although work is not planned here at this time):

- The footprint in which work would occur is maintained as part of the Valley-Serrano line.

- This area does fall within the MSHCP survey areas for NEPS, CAS and BUOW.

Similar to the access road discussed above, encountering sensitive species in this disturbed area would also be unlikely. Further, suitable habitat for SKR does not exist within in the maintained tower disturbance footprint or within the area adjacent to this tower disturbance footprint.

As needed, an assessment of the access road and Tower M13-T1 would be included as part of the pre-construction survey effort with results provided to the CPUC prior to any project-specific use of the access road between M13-T2 and M13-T1 as well as any work at M13-T1. While the presence of sensitive species in this area is unlikely, biological monitoring would be implemented to ensure no impacts to sensitive species would occur.

3.**Response –** For both the Valley-Ivyglen (VIG) and Alberhill project, biological technical reports are being prepared specific to the MSHCP Participating Special Entity process. Based on biological survey data, a description of the survey methodology and list of potential species occurrences was provided to the CPUC. The table below further presents the number of individuals identified during surveys conducted to date along the overlap area. Information gathered for each species was collected per specific protocols and does not include additional information such as nesting status and habitat quality. At this time, the presence/absence of these species as well as numbers of individuals is the basis on which mitigation would be determined. Additional information regarding nesting status will be gathered during the pre-construction surveys.

Valley-Ivyglen Subtransmission Line & Alberhill Substation - Special-status Results
Date: 22 October 2012

Common Name	Scientific Name	Detection Year	No. of Individuals	VIG Phase
Birds				
Rufous-crowned Sparrow	*Aimophila ruficeps*	2006	1	2
		2011	3	2
Cooper's Hawk	*Accipiter cooperii*	2012	1	1
Red-tailed Hawk Nest	*Buteo jamaicensis*	2006	1	2
Lawrence's Goldfinch	*Carduelis lawrencei*	2012	1	1
Willow Flycatcher	*Empidonax traillii*	2011	1	2
California Horned Lark	*Eremophila alpestris actia*	2012	1	2
coastal California Gnatcatcher	*Polioptila californica californica*	2006	1	2
Yellow Warbler	*Setophaga petechia*	2011	1	2
		2012	4	2
		2011	18	2

Least Bell's Vireo	*Vireo bellii pusillus*	2010	28	2
		2011	37	2
Mammals				
Stephens' Kangaroo Rat	*Dipodomys stephensi*	2006	2	2
		2011	17	2
San Diego Black-Tailed Jackrabbit	*Lepus californicus bennettii*	2011	1	2
		2012	1	2
Amphibians				
Western Spadefoot Toad	*Spea hammondii*	2006	3	2
		2011	1	2
Plants				
Chaparral Sand Verbena	*Abronia villosa* var. *aurita*	2010	4	2
San Diego Ambrosia	*Ambrosia pumila*	2010	8	2
		2012	6	2
San Jacinto Valley Crownscale	*Atriplex coronata* var. *notatior*	2012	28	2
Round-leaf Stork's Bill	*California macrophylla*	2011	21	2
Smooth Tarplant	*Centromadia pungens ssp. laevis*	2006	50	2
		2009	50	2
		2011	7595	2
		2012	2492	2
Long-spined Spineflower	*Chorizanthe polygonoides* var. *longispina*	2009	1	2
Paniculate Tarplant	*Deinandra paniculata*	2012	31	2
Coulter's Goldfields	*Lasthenia glabrata* ssp. *coulteri*	2011	31,000	2
		2012	161	2
Coulter's Matilija Poppy	*Romneya coulteri*	2012	2	2
Small-flowered Microseris	*Microseris douglasii*	2011	115	2
		2012	20	2

Specific to “vernal pools” refer the attached file labeled as “Alberhill_DG_14.10_Item3_VIG-Phase2_FairyShrimp_SurveyReport_July2012.pdf” The file includes the report titled “*Results of Focused Surveys for Listed Fairy Shrimp Species for the Valley-Ivyglen Transmission Line Project, Phase II, Riverside County, California. ”* This report is specific to the VIG project and covers an area larger than just the Alberhill overlap area. A total of 99 pools were identified during 2011-2012 focused wet season surveys, but only 20 exhibited inundation suitable for sampling per the US Fish and Wildlife Service (USFWS) Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (1996). Pooling in the study area was primarily associated with depressions in disturbed and

developed areas that are characterized as road ruts within existing access roads and shoulders. The study area is highly dynamic, as the local residents utilize the unpaved access roads daily and the majority of the pools are in or adjacent to the existing access roads. Residents drive vehicles, hike, and walk their dogs through these areas thus altering the pools. As such, pool depths, boundaries, and length of inundation continually changed throughout the survey period. Although they fit the criteria of holding at least 1.2 in (3 cm) of water for eight days or longer, they were altered by recreational activity or dried up prior to the next sampling visit. To date, none of the depressions sampled for fairy shrimp in the VIG area overlapping with Alberhill would meet the definition of a "vernal pool" and nowhere within the VIG project area were listed fairy shrimp observed. Only Versatile Fairy Shrimp (*Branchinecta lindahli*) not considered sensitive by resource agencies were detected in one pool (Appendix B: Photographs 4-5 of the attached report). Other pools did not support any fairy shrimp species during the 2011-2012 survey season.

4.GIS data for small mammal trapping in 2011 was provided to the CPUC showing polygons where SKR and LAPM trapping occurred. It should be noted that Dulzura kangaroo rat (DKR) is not a listed species nor are there focused survey or mitigation requirements for this species. Therefore no specific data points for DKR would have been collected as part of the trapping effort. DKR individuals found during trapping efforts would have been mentioned only as incidental observations within the areas being trapped for the sensitive small mammal species, SKR and LAPM (Refer to Tables 2 and 3 within the August 27, 2011 report). Attached is a query of the identified polygons (i.e., no specific individual data points) that encompassed positive results for DKR provided as a separate GIS deliverable attached here and labeled "Alberhill_DG_14.10_Item4_DKR_GIS-to-CPUC_10-22-12.zip"

DRAFT
RESULTS OF FOCUSED SURVEYS FOR LISTED FAIRY SHRIMP SPECIES FOR THE VALLEY-IVYGLEN TRANSMISSION LINE PROJECT PHASE II RIVERSIDE COUNTY, CALIFORNIA

Submitted to:
Southern California Edison
Corporate Environmental Health and Safety
1218 South Fifth Avenue
Monrovia, California 91016

Submitted by:
AMEC Environment & Infrastructure, Inc.
3120 Chicago Avenue, Suite 110
Riverside, California 92507

July 2012

AMEC Project No. 1255400495

EXECUTIVE SUMMARY

At the request of Southern California Edison (SCE), AMEC Environment & Infrastructure, Inc. (AMEC) delineated and assessed potential habitat for listed fairy shrimp species in support of the proposed Valley-Ivyglen Transmission Line Project, Phase II (project). Identified potential habitat was sampled following U.S. Fish and Wildlife Service (USFWS) protocol (USFWS 1996) for two federally listed fairy shrimp species known from the region: Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) and Riverside Fairy Shrimp (*Streptocephalus wootonii*).

The proposed project is designed to improve reliability and meet projected electrical load requirements in western Riverside County, and involves the eventual construction of a new 115 kilovolt (kV) transmission line between the Valley and Ivyglen substations. The project is located in western Riverside County, California and the proposed Phase II transmission line route traverses portions of unincorporated county and the cities of Corona and Lake Elsinore.

The purpose of this report is to summarize the results of fairy shrimp and vernal pool studies that have been conducted within the Phase II project area during the 2012 wet season. Surveys were also conducted at the south end of this area during the 2008-2009 and 2009-2010 wet seasons.

Of 99 pools identified and sampled, none were found to support federally listed fairy shrimp species during the sampling period. The non-sensitive Versatile Fairy Shrimp (*Branchinecta lindahli*) was identified in one pool in the 2011-2012 season, which was a new pool in an area not previously surveyed. No fairy shrimp were found in any other pool during 2011-2012 Phase II surveys.

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ACRONYMS AND ABBREVIATIONS

AMEC	AMEC Environment & Infrastructure, Inc.
CDFG	California Department of Fish and Game
°C	degrees Celsius
cm	centimeter
°F	degrees Fahrenheit
in	inches
kV	kilovolt
m	meter
MSHCP	Multiple Species Habitat Conservation Plan
project	Valley-Ivyglen Transmission Line Project
ROW	right-of-way
SCE	Southern California Edison
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

At the request of Southern California Edison (SCE), AMEC Environment & Infrastructure, Inc. (AMEC) delineated and assessed potential habitat for listed fairy shrimp species in support of the proposed Valley-Ivyglen Transmission Line Project (project). Identified potential habitat was sampled following U.S. Fish and Wildlife Service (USFWS) protocol (USFWS 1996) for two federally listed fairy shrimp species known from the region: Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) and Riverside Fairy Shrimp (*Streptocephalus wootonii*).

The proposed project is designed to improve reliability and meet projected electrical load requirements in western Riverside County, and involves the eventual construction of a new 115 kilovolt (kV) transmission line between the Valley and Ivyglen substations.

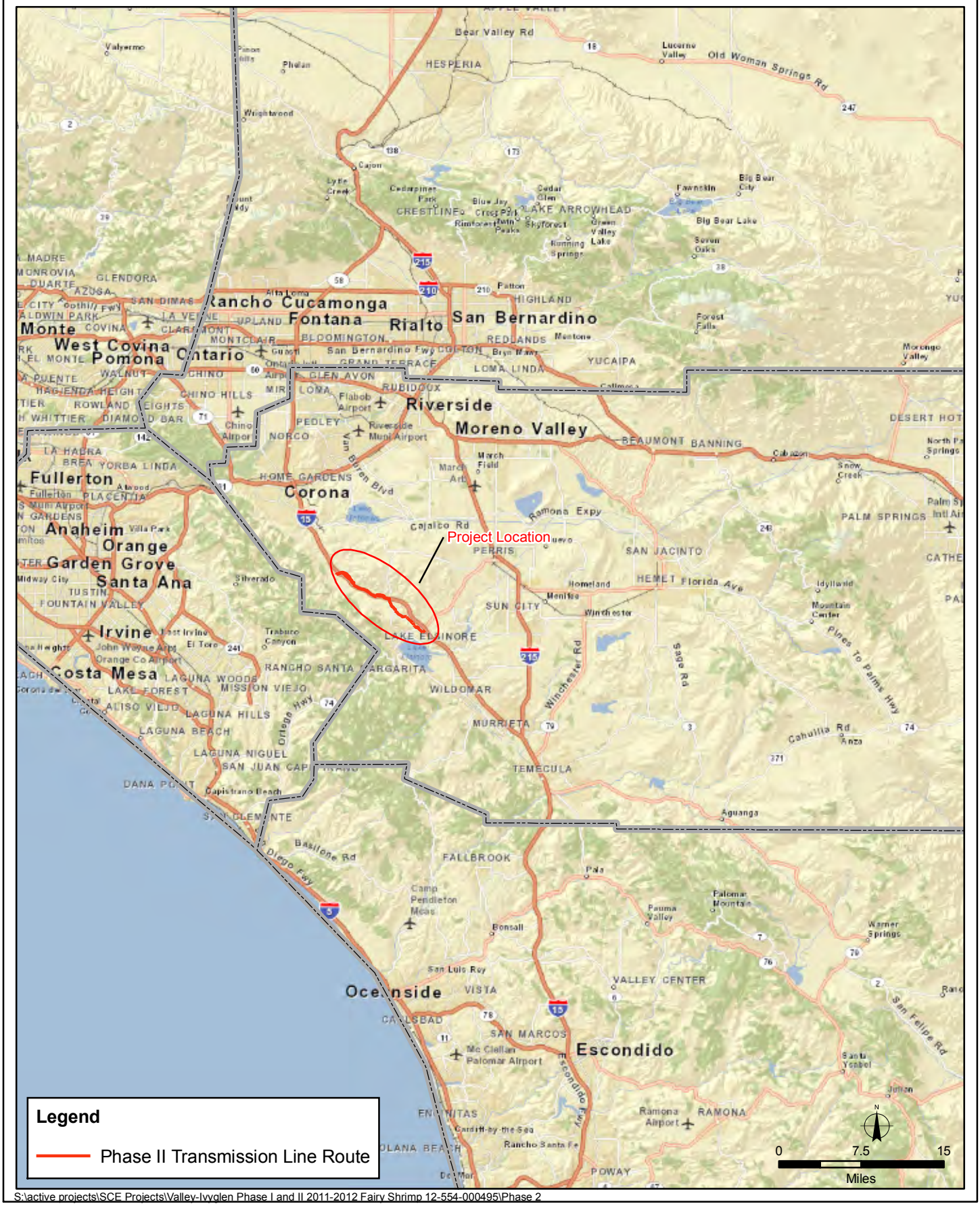
1.1 Project Location and Study Area

The project is located in western Riverside County, California and the proposed Phase II transmission line route traverses portions of unincorporated county and the cities of Corona and Lake Elsinore (See Figures 1 and 2). The route traverses portions of the Lake Elsinore, Lake Mathews, and Alberhill United States Geological Survey (USGS) 7.5-minute series topographic quadrangles.

The project has been divided into two portions: eastern (Phase I) and western (Phase II). Phase I extends from the Valley Substation in the City of Menifee southwest to the corner of Collier Avenue and Third Street in the City of Lake Elsinore. The Valley Substation is located in the City of Menifee on the west side of Menifee Road between McLaughlin and Ethanac Roads. Phase II extends from that corner northwest to the Ivyglen Substation in the City of Corona.

The purpose of this report is to summarize the results of fairy shrimp and vernal pool studies that were conducted within the Phase II portion of the project area (study area) during the 2011-2012 wet season. Phase II will not be discussed further. Fairy Shrimp surveys were also conducted in the Phase II area during the 2008-2009 and 2009-2010 wet seasons (AMEC 2009, 2010), but only at the south end (Pools 4-5, 134-144, and Y2-1). Areas surveyed included the proposed transmission line right-of-way (ROW) and a 500-foot buffer from the centerline of the proposed ROW. AMEC was not given permission to survey and lands belonging to Castle & Cooke, so that area is excluded, with the exception of several public road shoulder pools (see reduced survey area on Figure 2 and pages A2-8 & A2-9 in Appendix A).

The study area is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The MSHCP is a comprehensive, multi-jurisdictional Habitat Conservation Plan, which focuses on conservation of species and their associated habitats in western Riverside County (Riverside County 2003). Section 6.1.2 of the MSHCP requires site surveys of riparian, riverine, and vernal pool resources in order to conserve these resources and the species that use them. The MSHCP does not replace existing federal and state regulations covering lakes, streams, vernal pools, and other wetland areas. Thus, projects must comply with existing regulations for these resources.



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amec

Regional Location
Fairy Shrimp Surveys
Valley-Ivyglen Transmission Line Project: Phase II

FIGURE
1

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Project Location
Fairy Shrimp Surveys
Valley-Ivyglen Transmission Line Project: Phase II

FIGURE
2

2.0 SPECIES DESCRIPTION

2.1 Listing Status and Critical Habitat

Several species of fairy shrimp are considered sensitive by the USFWS and the California Department of Fish and Game (CDFG) (resource agencies) because of their rarity and/or association with sensitive aquatic habitats such as vernal pools (CDFG 1990). Two federally listed fairy shrimp species are known to occur within Riverside County: Riverside County Vernal Pool Fairy Shrimp and Riverside Fairy Shrimp. A third species, Santa Rosa Plateau Fairy Shrimp (*Linderiella santarosae*) is an unlisted sensitive species that occurs only on the Santa Rosa Plateau of Riverside County.

Vernal Pool Fairy Shrimp is a federally listed as threatened species (USFWS 1994). Critical Habitat was designated for this species in the Central Valley of California in 2006 (USFWS 2006). Critical Habitat for Vernal Pool Fairy Shrimp has not been designated in western Riverside County.

Riverside Fairy Shrimp was listed as federally endangered in 1993 (USFWS 1993). Critical Habitat was designated in 2001 (USFWS 2001), and a revised Critical Habitat was proposed in 2004 (USFWS 2004); the final designation of Critical Habitat was announced on 12 April 2005 (USFWS 2005). The proposed project is approximately 9.5 miles northeast of the nearest Riverside Fairy Shrimp Critical Habitat unit, Critical Habitat Unit 2, near Trabuco (USFWS 2005) (see Figure 3).

Western Riverside County, wherein the study area occurs, has historically harbored relatively large populations of fairy shrimp due to natural environmental conditions (e.g., soils, hydrology, and topography) that make much of its habitats conducive to vernal pool formation. These vernal pools, and the fairy shrimp populations they support, have been reduced and fragmented over the years due pressure from human development, such as housing and agriculture. The area however, is still designated as an important vernal pool management area by the USFWS within the larger USFWS Riverside Management Area (USFWS 1998).

S:\active projects\SCE Projects\Valley-Ivyglen Phase I and II 2011-2012 Fairy Shrimp 12-554-000495\Phase 2: rfs_fch27_g(USFW, final 2005)

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Fairy Shrimp Critical Habitat
Fairy Shrimp Surveys
Valley-Ivyglen Transmission Line Project: Phase II

FIGURE
3

2.1.1 Life History

Fairy shrimp (Class: Crustacea; Order: Anostraca) are conspicuous members of the fauna of ephemeral ponds and vernal pools. California has at least 25 known species of fairy shrimp belonging to six genera (Eriksen and Belk 1999). Fairy shrimp have the ability to produce resting eggs (cysts), which allows them to survive from year to year in ephemeral aquatic habitats, as they can withstand desiccation and freezing. This allows fairy shrimp to avoid many potential aquatic predators that require a year-round water source to survive, such as predatory fish and many frog species. The continued survival of a fairy shrimp population in a particular location requires water to be ponded for a length of time sufficient for the completion of their life cycle. The length of time for fairy shrimp from hatching to sexual maturity and egg-laying is variable depending on environmental conditions and the specific species. In general, a minimum of one to two weeks is required. As such, the presence of fairy shrimp (either free swimming or as cysts in the soil) can be considered an indication of an ephemeral pond or vernal pool that holds water for at least one to two weeks every few years.

Fairy shrimp cysts tend to hatch in pools with relatively cool temperatures, with species-specific differences in responses that are related to temperature regime (USFWS 1998). Lack of hatching at higher temperatures (greater than 77° Fahrenheit [F] or 25° Celsius [C]) protects fairy shrimp from the infrequent summer storms that might otherwise be sufficient to stimulate development, but inadequate for the organisms to complete their life cycles. Also, often less than ten percent of the dormant cyst bank hatches with any one hydration (Hathaway and Simovich 1996). This appears to be an ecological bet-hedging strategy, which helps protect the species from hatching the entire cyst bank during years where rainfall and pooling is insufficient to allow the fairy shrimp to reach sexual maturity and breed. In addition, laboratory studies have shown that many fairy shrimp cysts can hatch after 15 years of dormancy when given the proper environmental conditions (Eriksen and Belk 1999). Four species of fairy shrimp are known to occur in Riverside County: Vernal Pool Fairy Shrimp, Riverside Fairy Shrimp, Versatile Fairy Shrimp (*Branchinecta lindahli*), and Santa Rosa Plateau Fairy Shrimp.

Vernal Pool Fairy Shrimp has three disjunct populations in western Riverside County (see Figure 4), but is more widely distributed within California's Central Valley. Typically, this species is found in sandstone puddles surrounded by foothill grassland. Other habitats include small swale, earth slump, or basalt-flow depression basin with a grassy or sometimes muddy bottom within unplowed grassland. It is found in water ranging from 46.1º F to 73.4º F. Vernal Pool Fairy Shrimp have been observed between December and early May. This species hatches soon after pools fill with water of temperatures less than or equal to 50º F, reaching maturity as quickly as 18 days. However, if water temperatures remain at approximately 59º F, then at least 41 days are required for maturity. This species is known from some of the shortest-lived pools (e.g., six to seven weeks for winter pools or three weeks for spring pools). Although Vernal Pool Fairy Shrimp co-occur with several different fairy shrimp species throughout its range, only four of those have the potential to occur in western Riverside County, as noted above. Vernal Pool Fairy Shrimp is known to co-occur with all of them, but has been found in the same pools as Riverside Fairy Shrimp only as cysts, not swimming together. The primary threats to Vernal Pool Fairy Shrimp are urban and agricultural development of its habitat. The closest known occurrence of Vernal Pool Fairy Shrimp is on the Santa Rosa Plateau, approximately 13 miles

south-southeast of the south project terminus of the Valley Substation. The species is also known to occur in Riverside County in Hemet and Skunk Hollow which are each approximately 16 miles from the study area (USFWS 2006, CDFG 2009, Riverside County 2003) (Figure 4). The Hemet location is east of the Phase II south terminus and Skunk Hollow is southeast of the Phase II south terminus.

Riverside Fairy Shrimp has a very restricted and scattered distribution. In Riverside County this species has been detected in vernal pools and temporary ponds at the Santa Rosa Plateau, Menifee, Lake Elsinore, Skunk Hollow and other Murrieta locations, and in the vicinity of Temecula (Riverside County 2003, CDFG 2012), see Figure 4. Elsewhere, it occurs in locations such as Otay Mesa, Marine Corps Base Camp Pendleton, and Miramar Naval Air Station in San Diego County (Simovich and Fugate 1992). It also has been collected in a few places in Orange County and Baja California Norte, Mexico (Eriksen and Belk 1999). The nearest documented population occurrences are near Lake Elsinore, approximately 3 miles southeast of the south end of the study area. This species typically is found in longer-lived pools that often support spikerush (*Eleocharis* sp.). These pools tend to occur in seasonal grasslands sometimes interspersed with chaparral or coastal sage scrub vegetation. Riverside Fairy Shrimp appears to be a relatively warm-water species (i.e., hatching between 50 °F to 77 °F [10 °Cand 25 °C]) (Eriksen and Belk 1999), typically not appearing until late in the season although it has been observed as early as late January (Eng et al. 1990). In Riverside County it is known to co-occur with two other species of fairy shrimp, including the Versatile Fairy Shrimp and the Vernal Pool Fairy Shrimp, but it has been found swimming together with the Versatile Fairy Shrimp Only. Co-occurrence of the Vernal Pool Fairy Shrimp has been in the form of cysts in the same pool only. It typically occupies long-lasting pools in which the water persists into April or May, and which reach an average minimum depth of 11.8 inches (in) (30 centimeters [cm]) at filling (Eng et al. 1990). Riverside Fairy Shrimp requires approximately two months to reach reproductive age after hatching (USFWS 1998). Like Vernal Pool Fairy Shrimp, the main threats to this species are urban and agricultural development.

For comparison, Vernal Pool Fairy Shrimp generally hatch earlier in the rainy season, mature more quickly, and use shallower, cooler pools (typical of early season pools) than Riverside Fairy Shrimp. In contrast, Riverside Fairy Shrimp usually hatch later in the season in pools that are warmer and deeper than Vernal Pool Fairy Shrimp, and they are slower to reach sexual maturity. These different ecological niches likely minimize competition between the species for food and other resources, even when they occupy the same pools.

Santa Rosa Plateau Fairy Shrimp is endemic to grassland cool-water vernal pools which are formed on Southern Basalt Flows located at Santa Rosa Plateau. Therefore, it is not expected to occur within the study area (Eriksen and Belk 1999). It is not state or federally listed as Threatened or Endangered.

Versatile Fairy Shrimp commonly occurs in Riverside County and throughout California and may occupy the same pools as Vernal Pool Fairy Shrimp and the Riverside Fairy Shrimp. This species is common and is not considered to be sensitive by the resource agencies.

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Known Locations of Listed Fairy Shrimp in Riverside County
Fairy Shrimp Surveys
Valley-Ivyglen Transmission Line Project: Phase II

FIGURE
4

3.0 SITE CHARACTERIZATION

The topography within the study area is generally flat or with gentle rolling hills. The approximately 13.2 miles of study area contains a combination of agricultural, municipal, private, and reserve land, most with previous disturbances of some kind.

3.1 Climate

The study area is located within a Mediterranean climate region consisting of warm, dry summers and mild, wet winters. In summer, temperatures often reach 100º F and winter temperatures fall as low as 30º F, with an occasional freeze. Average annual temperature ranges are fairly moderate for the area, ranging from 49.3º F to 79.5º F. Average total precipitation for the area is approximately 10 to 15 inches per year (Desert Research Institute [DRI] 2012).

3.1.1 2011-2012 Wet Season

Most precipitation in coastal Southern California occurs from approximately October through May, but annual precipitation records include precipitation events from July 1st through June 30th. The Elsinore station, near Lake Elsinore, is the closest weather station to the study area. The total rainfall for the 2011-2012 season was 6.68 inches, which is 4.98 inches less than the yearly average of 11.66 in (DRI 2012). For comparison, the 2010-2011 season had a total of 22.38 inches (11.67 of which fell in December 2010) and the 2009-2010 season had a total of 16.55 inches (8.88 of which fell in January 2010). The high rainfall totals of the previous two seasons reflect those two extraordinarily wet months. The four previous seasons had rainfall totals of less than nine inches each.

3.2 Topography, Land Use, and Soils

The study area begins in the relatively flat Warm Springs Valley in the south, and then travels northwest, crossing Alberhill Creek/Temescal Wash and continuing through valleys and low rolling hills in the Terra Cotta and Alberhill areas. It then crosses Temescal Wash again, twice in the space of about 1.5 miles. As it continues northwest it parallels and then enters the Temescal Valley, between the Santa Ana Mountains to the southwest and the Gavilan Hills to the northeast, before terminating at the Ivy Glen Substation in Corona. west and then southwest across a series of low, rolling hills.

The study area is located primarily along relatively flat areas that have historically been used for grazing, agriculture, an old railroad, and rural residential development. Much of the proposed ROW is adjacent to existing transmission lines and paved and dirt roads, although there is one unroaded stretch which crosses several canyons southwest of the Temescal Valley.

Soils in the study area are primarily in the Monserate-Arlington-Exeter and Traver-Domino-Willows associations. These soils are characterized as level to moderately steep soils that have a surface layer of sandy loam often with a hardpan. The soils can range from very shallow to relatively deep (USDA 1971). Soils in the study area do not generally have a high clay component; however, there are "lenses" of clay soils in the study area, and several mapped soil types which are considered sensitive. Phase II travels through several mapped soil types which are considered sensitive by the MSHCP (Riverside County 2003). In the south these include Travers series sandy loams, Altamont series clays, and Willows silty clay. Some of these soils are associated with the Alberhill Creek/Temescal Wash drainage. In the northern portion of Phase II, the alignment passes through additional areas of Altamont clays.

3.3 Weather Conditions and Pool Formation

Vernal pool formation is typically affected by precipitation levels and general rainfall patterns specifically wherein precipitation is delivered by relatively few, large storm systems. Large but widely spaced precipitation events may result in saturated soil conditions and temporary pool formation, but greater precipitation levels and/or more closely spaced storms may be required for longer inundation periods.

Precipitation levels during the 2011-2012 wet season (October-May) were less than one-third that of the previous wet season. This is reflected in the reduced number of inundated pools found this year as compared to previous seasons.

Many of the vernal pools that were sampled during the protocol wet season surveys occurred within areas that are extremely dynamic, as most are continually altered by human activities. Such activities included: an active junkyard, recreational activities, and vehicular traffic on unpaved roads, including off-road vehicles. Of the 99 pools inundated during the 2011-2012 wet season surveys, 78 would fall into the above categories (Appendix B: Photographs 2, 4, 6, 8-10). Other pools were formed on topography created by past construction, agricultural (Appendix B: Photograph 7), or commercial activities (Appendix B: Photograph 1) on sites that are now inactive. Twelve pools fell into this category, most of which were not subject to any disturbance during the 2011-2012 season. Nine pools were in basins in channels directly subject to runoff as a result of rain events (Appendix B: Photograph 3). All of these were artificial and/or the result of alteration of natural drainages. Four roadside pools (260 and 247b, e, & f) were inundated for over 120 days (Appendix B: Photographs 6 & 10). All of these were maintained by non-rainfall related water sources. Pool 260 was maintained by runoff from adjacent commercial landscaping and Pools 247b, e, & f were maintained by leakage from a water pumping station. None of the 99 pools encountered in the 2011-2012 season were natural pools in an undisturbed location. Table 1 summarizes the number of pools that were formed as a result of construction related, roadside, and drainage conditions.

Table 1.
Pool Types for the Proposed Valley-Ivyglen Transmission Line Project

Pool Type	Pool Identification Number	Number of Pools
Road/Road Shoulder	137, 238-240, 242-243, 247a-252, 255-259, 261-263, 265-269c, 275-277, 317-320, 334-339b, 342-344, 347-353, 360, 362	78
Related to Past Disturbance	237, 308-316, 333, 355-356	12
Located in Drainage	234, 241, 244, 260, 264, 325, 340, 357-358	9
	Grand Total:	99

Per the USFWS wet season protocol, 99 depressions were classified as vernal pools due to their initial ponding; however, only 20 of these pools were subsequently surveyed per the USFWS protocol either due to their continuing inundation at the two-week follow-up visit(s), or due to shrimp already being present at the first discovery of inundation. This includes pools that were first documented mid-season and remained inundated per the protocol for at least one sampling event. Only one of the 14 pools identified in previous year's surveys was inundated during the 2011-2012 season, and it was dry by the next visit, so was never sampled. A total of 98 new pools were identified during the 2011-2012 wet season which had not been documented during the 2008-2009 or 2009-2010 wet seasons, mainly because the previous year's surveys did not include the majority of the Phase II alignment. Pools with numbers ≤144 were first documented in 2008-2009; pools with a y2 prefix were first documented in 2009-2010, and pools first documented in 2011-2012 were numbered ≥234.

3.4 Vegetation Communities

The vegetation communities and land cover types in the study area are varied, but most pools occur on developed disturbed land, mainly roadsides and unpaved roads. (ruderal habitat), and grasslands. Vegetation communities and land cover types recorded along the Phase II alignment are briefly described below. These communities are classified per the Western Riverside County MSHCP, which is based on the vegetation communities presented in the *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986; Riverside County 2003).

3.4.1 Agriculture

Agricultural lands within the study area include areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves/orchards. The Phase II alignment crosses areas which were in agricultural production in the past, but little, if any, of these lands were in active production in 2012.

3.4.2 Chaparral

Chaparral is a shrub-dominated vegetation community that is composed largely of evergreen species that range from 3 to 12 feet in height (Riverside County 2003). The most common and widespread species within chaparral is chamise (*Adenostoma fasciculatum*). Other common shrub species include manzanita (*Arctostaphylos* spp.), wild-lilac (*Ceanothus* spp.), oak (*Quercus* spp.), redberry (*Rhamnus* spp.), laurel sumac (*Malosma laurina*), mountain-mahogany (*Cercocarpus betuloides*), toyon (*Heteromeles arbutifolia*), and mission manzanita (*Xylococcus bicolor*). Soft-leaved subshrubs are less common in chaparral than in coastal sage scrub (see below) but occur within canopy gaps of mature stands. Common species include California buckwheat (*Eriogonum fasciculatum*), sages (*Salvia* spp.), California sagebrush (*Artemisia californica*), and monkeyflower (*Mimulus* spp.). In addition, herbaceous species, including deerweed (*Lotus scoparius*), nightshade (*Solanum* spp.), Spanish bayonet (*Yucca whipplei*), rock-rose (*Helianthemum scoparium*), onion (*Allium* spp.), soap plant (*Chlorogalum* spp.), bunch grasses (*Nassella* spp., and *Melica* spp.), wild cucumber (*Marah* spp.), bedstraw (*Galium* spp.), and lupine (*Lupinus* spp.) are also present. Chaparral occurs along the Phase II alignment west of the Temescal Valley floor, in places where the alignment touches on the foot of the Santa Ana Mountains.

3.4.3 Coastal Sage Scrub

In western Riverside County, coastal sage scrub is found both in large contiguous blocks scattered throughout the county, as well as integrated with chaparral and grasslands. Coastal sage scrub is dominated by a characteristic suite of low-statured, aromatic, drought-deciduous shrubs, and subshrub species. Composition varies substantially depending on physical circumstances and the successional status of the vegetation community; however, characteristic species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), California encelia (*Encelia californica*), and several species of sage (e.g., *Salvia mellifera*, *S. apiana*). Other common species include brittlebush (*Encelia farinosa*), lemonadeberry (*Rhus integrifolia*), sugarbush (*R. ovata*), yellow bush penstemon (*Keckiella antirrhinoides*), Mexican elderberry (*Sambucus mexicana*), sweetbush (*Bebbia juncea*), boxthorn (*Lycium* spp.), coastal prickly pear (*Opuntia littoralis*), coastal cholla (*Cylindropuntia prolifera*), tall prickly-pear (*O. oricola*), and species of dudleya (*Dudleya* spp). Within the study area, coastal sage scrub also occurs in various disturbed phases, as a result of mechanical disturbances such as agriculture, grading, or grazing, characterized by a sparse, open shrub habitat separated by grasses or bare ground.

3.4.4 Developed or Disturbed Land

Developed or disturbed land consists of disced, cleared, or otherwise altered areas. Developed lands may include roadways, existing buildings, and structures. Disturbed lands may include ornamental plantings for landscaping, exotics, or ruderal vegetation dominated by nonnative, weedy species such as mustard (*Brassica* sp.), fennel (*Foeniculum vulgare*), tocalote (*Centaurea melitensis*), and Russian thistle (*Salsola tragus*). The majority of the identified pools

occur within developed habitat, along dirt roads, building pads, or other manmade features that result in soil compaction or exposure of hardpan soils suitable for pooling.

3.4.5 Grasslands

Two general types of grasslands occur in western Riverside County: native dominated perennial grassland (valley and foothill grassland); and nonnative dominated, primarily annual grassland (nonnative grassland), which is the dominat grassland on the project alignment.

Valley and foothill grasslands typically contain the perennial bunch grasses, such as purple needlegrass (*Nassella pulchra)* and foothill needlegrass (*N. lepida*). Lesser amounts of other native grasses, such as onion grass (*Melica* spp.), wild rye (*Leymus* spp.), muhly (*Muhlenbergia* spp.), and cane bluestem (*Bothriochloa barbinodis*), also may be present. In addition, nonnative grasses or forbs may be present to varying degrees. Native herbaceous plants commonly found within valley and foothill grasslands include yellow fiddleneck (*Amsinckia menziesii*), common calyptridium (*Calyptridium monardum*), suncup (*Camissonia* spp.), Chinese houses (*Collinsia heterophylla*), California poppy (*Eschscholzia californica*), tarweed (*Hemizonia* spp.), coast goldfields (*Lasthenia californica*), common tidy-tips (*Layia platyglossa*), lupine (*Lupinus* spp.), popcornflower (*Plagiobothrys* spp.), blue dicks (*Dichelostemma capitata*), muilla (*Muilla* spp.), blue-eyed grass (*Sisyrinchium bellum*), and dudleya (*Dudleya* spp.). Little, if any, of this vegetation type occurs on Phase II.

Where grasslands occur on Phase II, they are nonnative grasslands are likely to be dominated by several species of grasses that have evolved to persist in concert with human agricultural practices: slender oat (*Avena barbata*), wild oat (*A. fatua*), fox tail chess (*Bromus madritensis*), soft chess (*B. hordeaceus*), ripgut grass (*B. diandrus*), barley (*Hordeum* spp.), rye grass (*Lolium multiflorum*), English ryegrass (*L. perenne*), rat-tail fescue (*Vulpia myuros*), and Mediterranean schismus (*Schismus barbatus*).

3.4.6 Meadows and Marshes

Meadow and marsh vegetation communities occur in both flowing and still water. This vegetation community includes cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), sedges (*Carex* spp.), spikerushes (*Eleocharis* spp.), sedges (*Cyperus* spp.), smartweed (*Polygonum* spp.), watercress (*Rorippa* spp.), and yerba mansa (*Anemopsis californica*). It also contains perennial and biennial herbs (e.g., *Oenothera* spp., *Lupinus* spp., *Potentilla* spp., and *Sidalcea* spp.) and grasses (e.g., *Agrostis* spp., *Deschampsia* spp., and *Muhlenbergia* spp.). Rooted aquatic plant species with floating stems and leaves, such as pennywort (*Hydrocotyle* spp.), water smartweed (*Polygonum amphibium*), pondweeds (*Potamogeton* spp.), and water-parsley (*Oenanthe sarmentosa*) may also be present. Meadows are not present on Phase II, but the alignment skirts some marshland, primarily in the south.

3.4.7 Riparian Forest, Woodland, and Scrub

Riparian vegetation, including forest, woodland, and scrub subtypes, is distributed in waterways and drainages throughout much of western Riverside County. Depending on community type, a riparian community may be dominated by any of several trees or shrubs, including box elder (*Acer negundo*), bigleaf maple (*A. macrophyllum*), coast live oak (*Quercus agrifolia*), white alder (*Alnus rhombifolia*), sycamore (*Platanus racemosa*), Fremont's cottonwood (*Populus fremontii*), California walnut (*Juglans californica*), Mexican elderberry (*Sambucus mexicana*), wild grape (*Vitis girdiana*), giant reed (*Arundo donax*), mule fat (*Baccharis salicifolia*), tamarisk (*Tamarix* spp.), or any of several species of willow (*Salix* spp.). In addition, various understory herbs may be present, such as saltgrass (*Distichlis spicata*), wild cucumber (*Marah macrocarpus*), mugwort (*Artemisia douglasiana*), stinging nettle (*Urtica dioica*), and poison-oak (*Toxicodendron diversilobum*) (Riverside County 2003). Subcategories of these habitat types within the study area include mule fat scrub, southern cottonwood-willow riparian forest, and southern sycamore-alder riparian woodland. Within the study area, riparian habitats occur primarily along stream courses, floodplains, and riverbanks.

3.4.8 Riversidean Alluvial Fan Sage Scrub

Riversidean alluvial fan sage scrub generally occurs on alluvial fans and benches along the floodplains of larger waterways in the Riverside County. Alluvial scrub is made up predominantly of drought-deciduous soft-leaved shrubs, but with significant cover of larger perennial species typically found in chaparral. Scalebroom (*Lepidospartum squamatum*) generally is regarded as an indicator of Riversidean alluvial fan sage scrub. In addition to scalebroom, alluvial scrub typically is composed of white sage (*Salvia apiana*), redberry (*Rhamnus crocea*), California buckwheat, Spanish bayonet (*Hesperoyucca whipplei*), California croton (*Croton californicus*), cholla (*Cylindropuntia* spp.), tarragon (*Artemisia dracunculus*), yerba santa (*Eriodictyon* spp.), broom baccharis (*Baccharis sarothroides*), and mountain-mahogany (*Cercocarpus betuloides*). Annual species composition has not been studied, but is probably similar to that found in understories of neighboring shrubland vegetation. The alignment skirts this vegetation community in several locations.

3.4.9 Woodlands and Forests

Woodland and forest vegetation communities in western Riverside County are dominated by Engelmann oak (*Quercus engelmannii*), coast live oak, canyon live oak (*Q. chrysolepis*), interior live oak (*Q. wislizenii*), and black oak (*Q. kelloggii*) in the canopy, which may be continuous to intermittent or savannah-like. Four-needle pinyon pine (*Pinus quadrifolia*), single-leaf pinyon pine (*P. monophylla*), and California juniper (*Juniperus californica*) are the canopy species of peninsular juniper woodland, which most commonly occur in southern California, forming a scattered canopy from 10 to 49 feet (ft) (3 to 15 meters [m]) tall. Phase II skirts some individual oaks and some limited oak woodlands.
Open Water.

Open water habitat typically is unvegetated due to a lack of light penetration. However, open water may contain suspended organisms such as filamentous green algae, phytoplankton (including diatoms), and desmids. Floating plants such as duckweed (*Lemna* spp.), water buttercup (*Ranunculus aquatilis*), and mosquito fern (*Azolla filiculoides*) also may be present. Open water includes inland depressions, ponds, lakes, reservoirs, and stream channels containing standing water and often occur in conjunction with riparian and upland vegetation communities. Depth may vary from hundreds of feet to a few inches (Riverside County 2003). The Phase II alignment skirts permanent open water only in the south.

4.0 SURVEY METHODOLOGY

Focused surveys for listed fairy shrimp species were conducted by John F. Green under the authority of USFWS Permit TE-054011-5. A notification letter, dated 20 November 2012, was submitted to the USFWS prior to sampling inundated pools (Appendix C). Surveys were conducted according to USFWS survey guidelines for wet season surveys (USFWS 1996). Once the pools were inundated with at least 1.2 in (3.0 cm) of water following a storm event, pools were sampled once every two weeks until the pools were no longer inundated (or until they experienced 120 days of continuous inundation). In cases where the pools dry and then refill within the same wet season, the pool sampling is reinitiated every time they reach the 1.2 in (3.0 cm) of standing water criterion, and sampling is started within eight days of reaching that criterion, with continual sampling every two weeks. Pools were sampled using a net with a mesh size smaller than (0.1 in) 3.2 millimeters.

All inundated pools were sampled upon each site visit. Pools were sampled with a net. All fairy shrimp netted were identified to species, when maturity level allowed. If only immature fairy shrimp were encountered in the pool, which did not yet exhibit the adult characteristics needed for identification, their life history status was noted and identification was planned for the next survey visit.

A total of 20 pools (out of 99 inundated for at least one visit) were sampled. Table 2 summarizes sampling visits for the study area. Appendix A depicts pool locations, and Appendix D summarizes pool sampling information.

Table 2.
Sampling Visits for the Proposed Valley-Ivyglen Transmission Line Phase II Project Fairy Shrimp Surveys

Date	Survey #	Activity
22 November 2011	0	Checked for ponding after rain event; ponding observed and will begin sampling inundated pools in two weeks.
6 December 2011	1	Sampled inundated pools.
20 December 2011	2	Continued to sample inundated pools. Rain events had occurred which refilled/inundated many pools.
3 January 2012	3	Sampled inundated pools.
17 January 2012	4	Continued to sample inundated pools. Rain events had occurred which refilled/inundated some pools.
31 January 2012	5	Sampled inundated pools.
14 February 2012	6	Sampled inundated pools.
28 February 2012	7	Continued to sample inundated pools. Rain events had occurred which refilled/inundated many pools.
13,19,& 22 March 2012	8	Sampled inundated pools, some new pools found in previously closed areas.
27 March 2012	9	Continued to sample inundated pools. Rain events had occurred which refilled/inundated many pools.
10 & 12 April 2012	10	Continued to sample inundated pools, one new pool found in newly added area.
24 April 2012	11	Continued to sample inundated pools. Rain events had occurred which refilled/inundated a few pools.
8 May 2012	12	Sampled inundated pools.
16 May 2012	13	Continued to sample inundated pools, all now dry except for three that reached their 120 day limit on this date, thus making this the final visit.

5.0 SURVEY RESULTS

A total of 99 pools were identified during 2011-2012 focused wet season surveys, but only 20 exhibited inundation suitable for sampling. The locations of the identified pools are included in Appendix A and detailed pool information is included as Appendix D.

The study area is highly dynamic, as the local residents utilize the unpaved access roads daily and the majority of the pools are in or adjacent to the existing access roads. Residents drive vehicles, hike, walk their dogs, as well as other recreational activities, which alter the pools. As such, pool depths, boundaries, and length of inundation are continually changing. Construction sites with graded lots, roads, and pads are currently inactive, or are influenced by runoff and storm drain flows. These pools remained relatively untouched at the time of the surveys. These pool types (active access roads and inactive construction sites) typically are not considered vernal pools, but they do support Versatile Fairy Shrimp, a ubiquitous species.

Pools within the study area not only changed at the beginning and the end of the wet season, but between sampling visits. A pool would be inundated at the beginning of the season and would not refill even with sufficient rain because vehicular activity or a flood event had reconfigured the pool. Conversely, a pool would be formed in the middle of the season that was not present upon initiation of surveys). Therefore, several pools were only sampled once. Although they fit the criteria of holding at least 1.2 in (3 cm) of water for over eight days, they were altered by recreational activity or dried up prior to the next sampling visit. Of the 20 pools sampled, 11 were sampled only once.

No listed fairy shrimp species were identified in any of the pools. Only Versatile Fairy Shrimp, not considered sensitive by resource agencies, was detected in one pool (Appendix B: Photographs 4-5). Other pools did not support any fairy shrimp species during the 2011-2012 season. Table 3 provides information relating to Versatile Fairy Shrimp occupancy and Appendix D provides pool sampling information.

Table 3.
Pools with Versatile Fairy Shrimp Occupancy during Surveys

Survey Week	Number of Pools Occupied*/Inundated	Survey Week (continued)	Number of Pools Occupied*/Inundated
1	1 / 6	8	0 / 18
2	0 / 27	9	1 / 90
3	0 / 3	10	0 / 7
4	0 / 11	11	0 / 8
5	0 / 10	12	0 / 4
6	0 / 5	13	0 / 3
7	0 / 40		

Notes:
*Occupied by Versatile Fairy Shrimp or *Branchinecta* sp. (too small to identify)

The 2011-2012 season had several rain events which filled, maintained, or refilled pools, but was also interspersed with dry periods and unseasonably high temperatures which sometimes caused rapid drying of pools. This resulted in one pool with *Branchinecta* shrimp which were too small to confidently identify drying prior to the next survey visit, preventing positive identification. This pool, however, had adult Versatile Fairy Shrimp in it on a previous visit this season, so it is likely that those juveniles were Versatile Fairy Shrimp as well.

6.0 CONCLUSION

Pooling in the study area was associated with depressions in disturbed and developed areas. Most of these pools are associated with existing access roads and shoulders.

Only Versatile Fairy Shrimp were positively identified during 2011-2012 focused wet season surveys. This is also the only species of fairy shrimp found in the study area during two previous years of surveys (south end). No listed fairy shrimp were detected (i.e., Riverside Fairy Shrimp and Vernal Pool Fairy Shrimp). Versatile Fairy Shrimp is a ubiquitous species, is distributed throughout the study area, and is not considered sensitive by resource agencies.

This survey result confirms that listed fairy shrimp were not detected within potentially suitable habitat during AMEC's 2011-2012 wet season surveys.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

John F. Green
Permit Number TE-054011-5

Date

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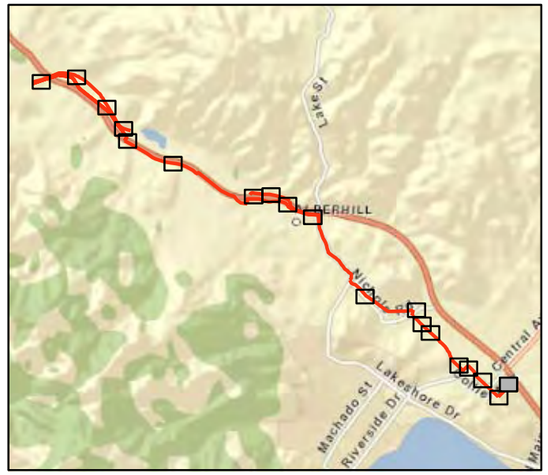
APPENDIX A

STUDY AREA MAPS

Legend

- Vernal Pools First Identified in 2008/2009 Season
- Vernal Pools First Identified in 2009/2010 Season
- Vernal Pools First Identified in 2011/2012 Season
- Phase II Transmission Line Route
- 2011/2012 Fairy Shrimp Study Area
- Castle & Cooke Properties



Map Notes-
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2010_vernal_pools_final,
merged_field_pools_031109
Route: line12 & UGroute(SCE 2011)
Projection: NAD 83 state plane CA 406ft

N
W E
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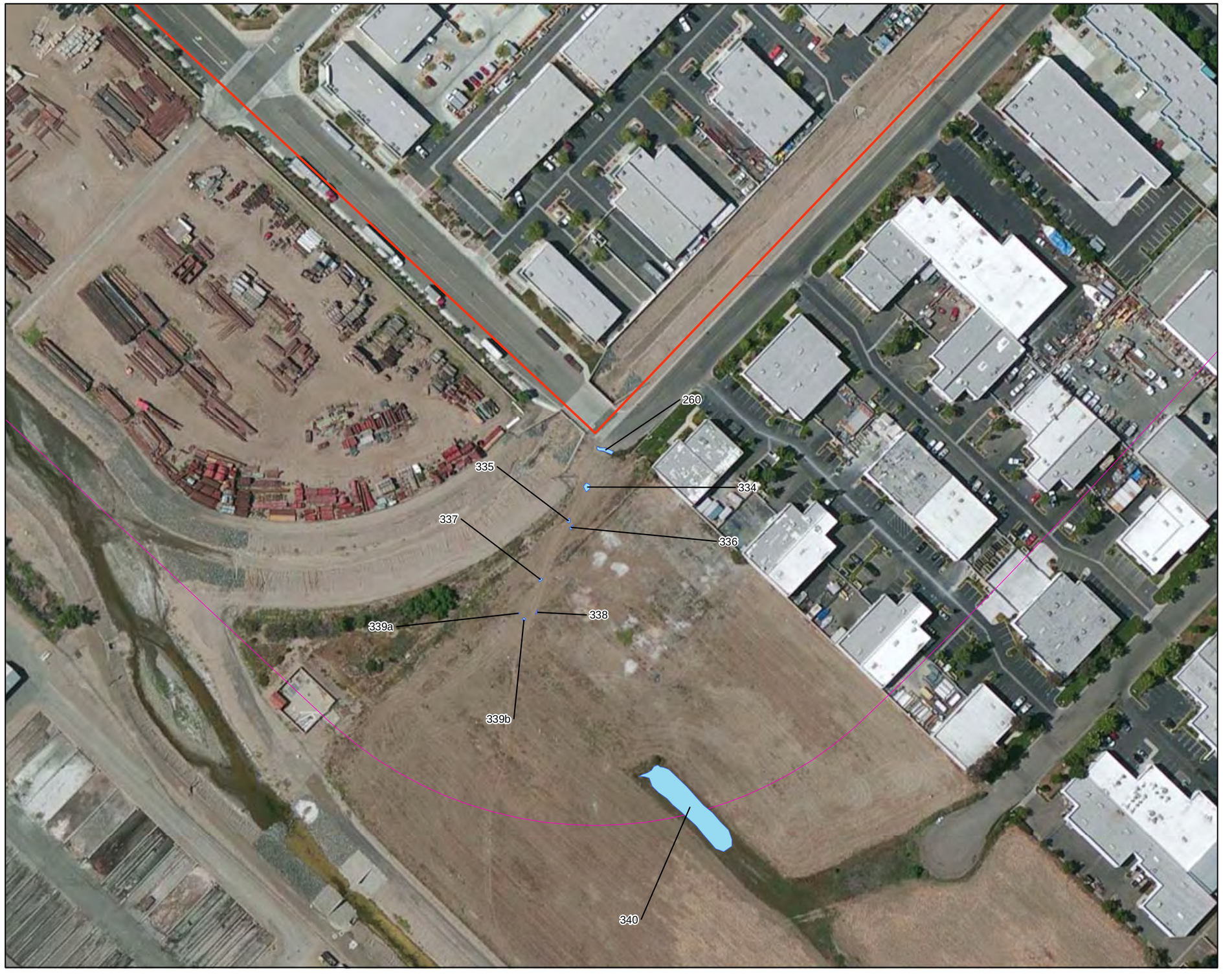
0 85 170 340
Feet

1 inch = 125 feet

Appendix A
Vernal Pools
Valley-Ivyglen Transmission Line Project: Phase II



Legend

- Vernal Pools First Identified in 2008/2009 Season
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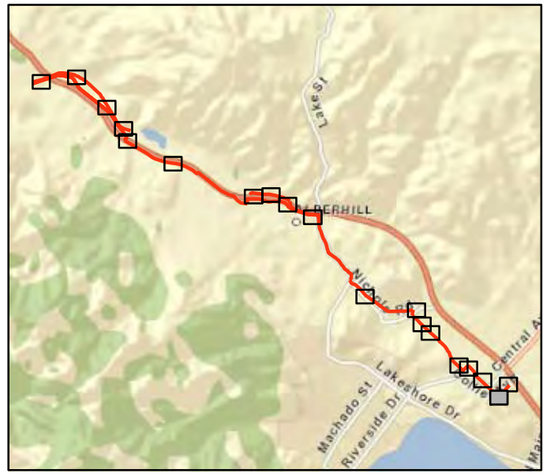

Map Notes-
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Fairy Shrimp 12-554-000495\Phase 2
Survey: 2011_2012_vernal_pools,
2010_vernal_pools_final,
merged_field_pools_031109
Route: line12 & UGroute(SCE 2011)
Projection: NAD 83 state plane CA 406ft

N
W E
S

0 85 170 340
Feet

1 inch = 125 feet

Appendix A
Vernal Pools
Valley-Ivyglen Transmission Line Project: Phase II

Legend

- Vernal Pools First Identified in 2008/2009 Season
- Vernal Pools First Identified in 2009/2010 Season
- Vernal Pools First Identified in 2011/2012 Season
- Phase II Transmission Line Route
- 2011/2012 Fairy Shrimp Study Area
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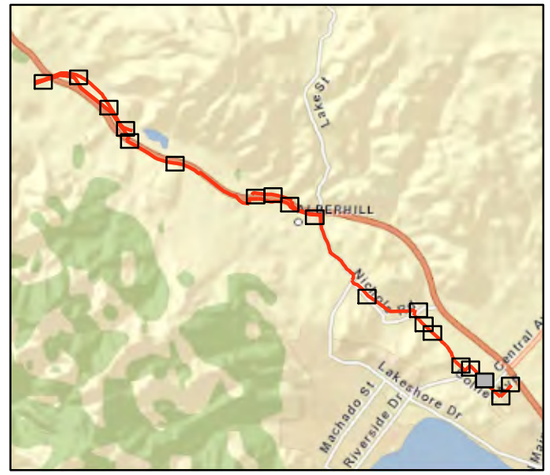

Map Notes-
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Fairy Shrimp 12-554-000495\Phase 2
Survey: 2011_2012_vernal_pools,
2010_vernal_pools_final,
merged_field_pools_031109
Route: line12 & UGroute(SCE 2011)
Projection: NAD 83 state plane CA 406ft

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Feet

1 inch = 125 feet

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Vernal Pools
Valley-Ivyglen Transmission Line Project: Phase II

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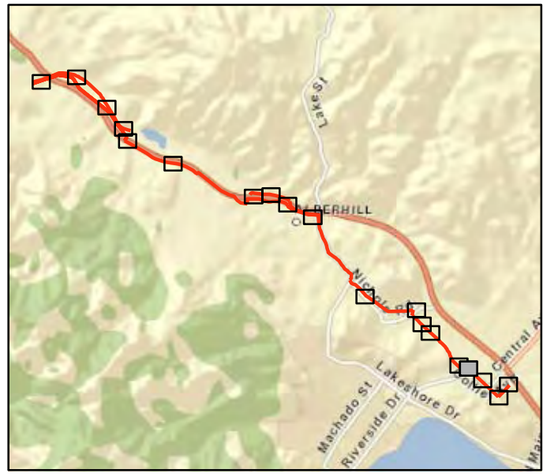

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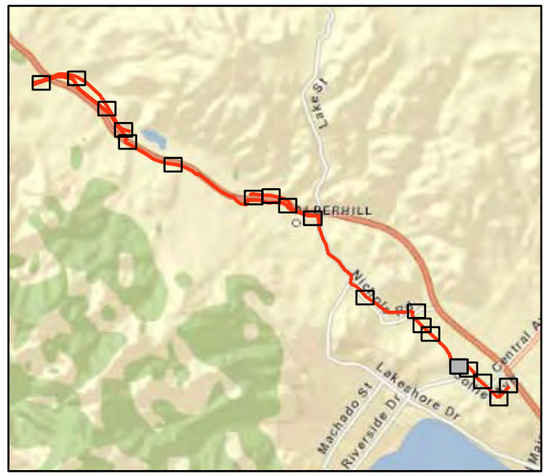

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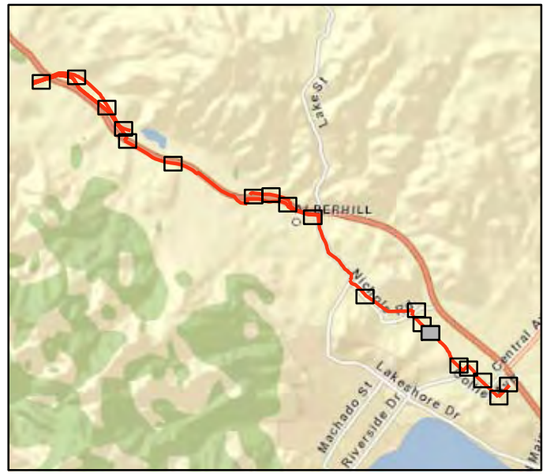

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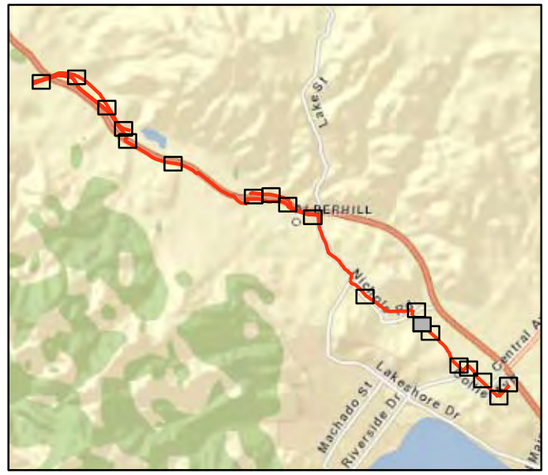

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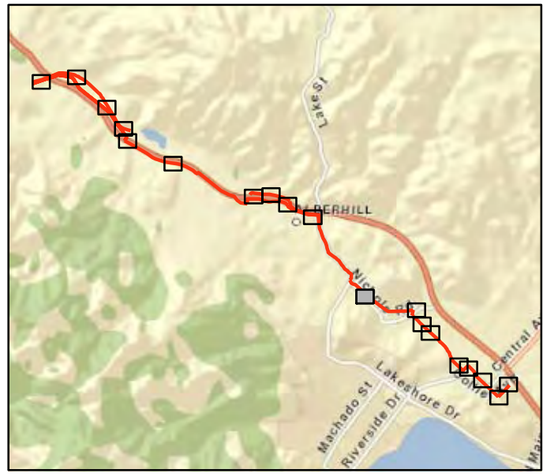

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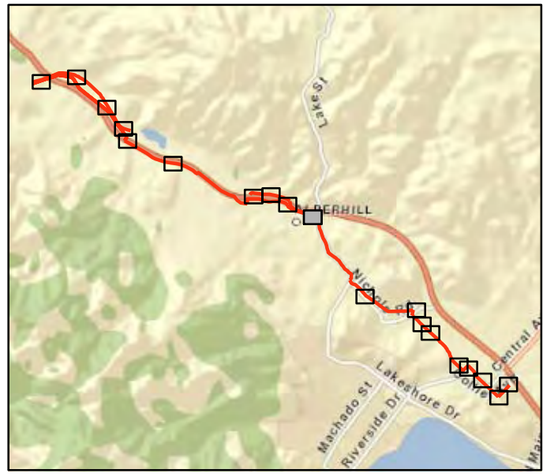

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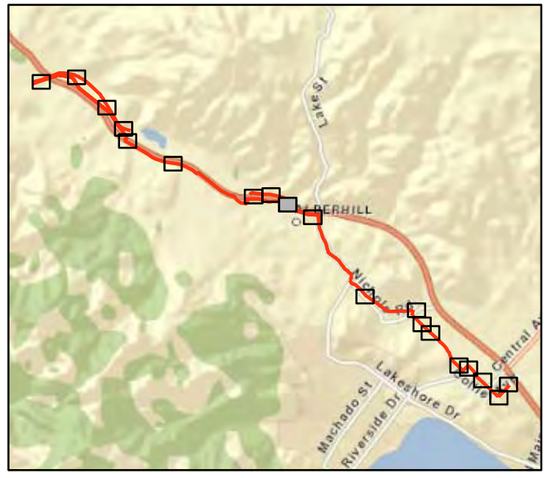

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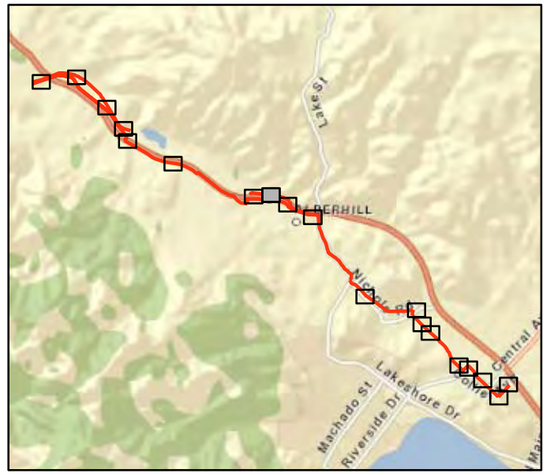

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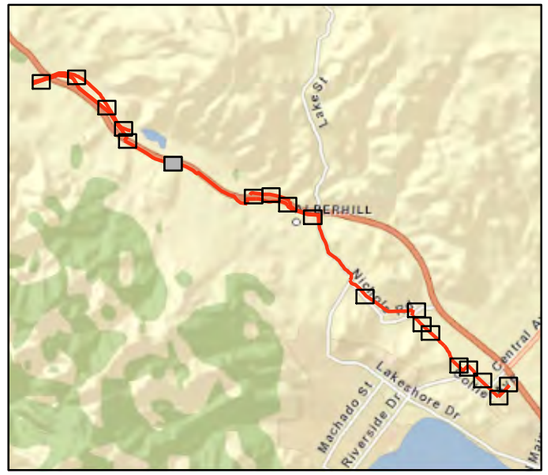

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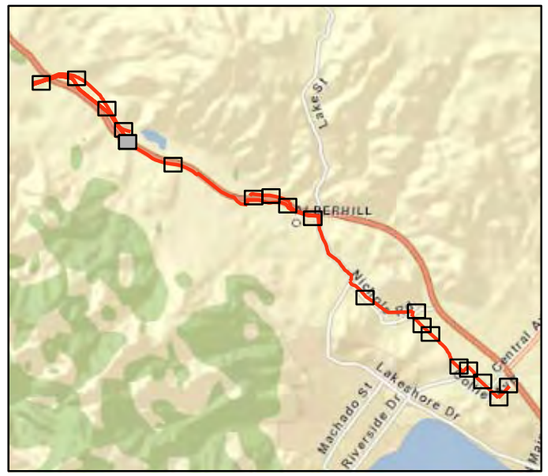

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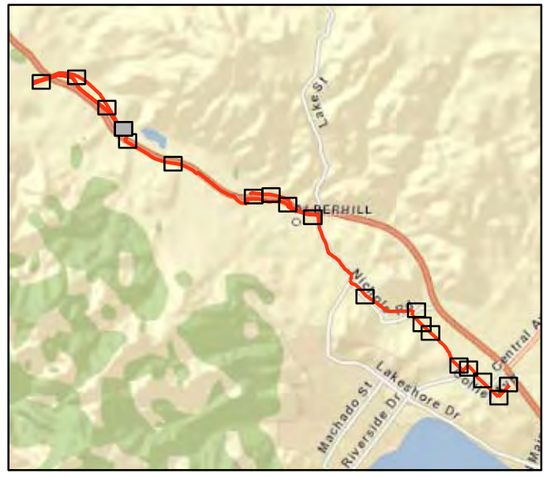

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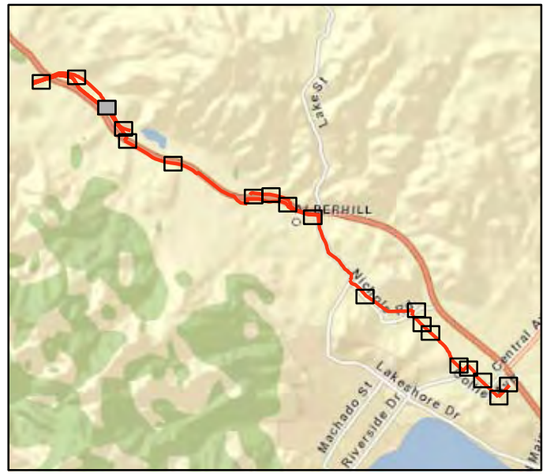

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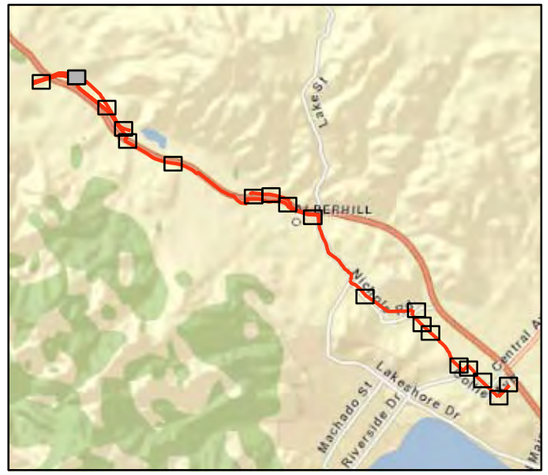

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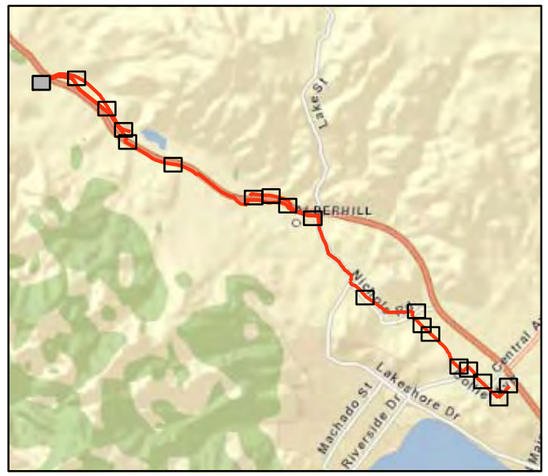

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APPENDIX B

STUDY AREA PHOTOGRAPHS

Photograph 1: Pool 237 in an abandoned commercial yard (Taken 22 November 2011).

Photograph 2: This complex of roadside pools at 239 was heavily impacted by road construction during the 2011-2012 season (Taken 22 November 2011).

F I G U R E

Study Area Photographs
Proposed Valley - Ivyglen Transmission Line Project,
Phase II

B-1

Photograph 3: Pool 241 formed in a basin next to the culvert at upper left (Taken 22 November 2011).

Photograph 4: Road shoulder Pool 247a was the only one that had fairy shrimp in it during the 2011-2012 surveys. Versatile Fairy Shrimp were in it at the time of this photo (Taken 6 December 2011).

F I G U R E

Study Area Photographs
Proposed Valley - Ivyglen Transmission Line Project,
Phase II

B-2

Photograph 5: Versatile Fairy Shrimp from Pool 247a (Taken 6 December 2011).

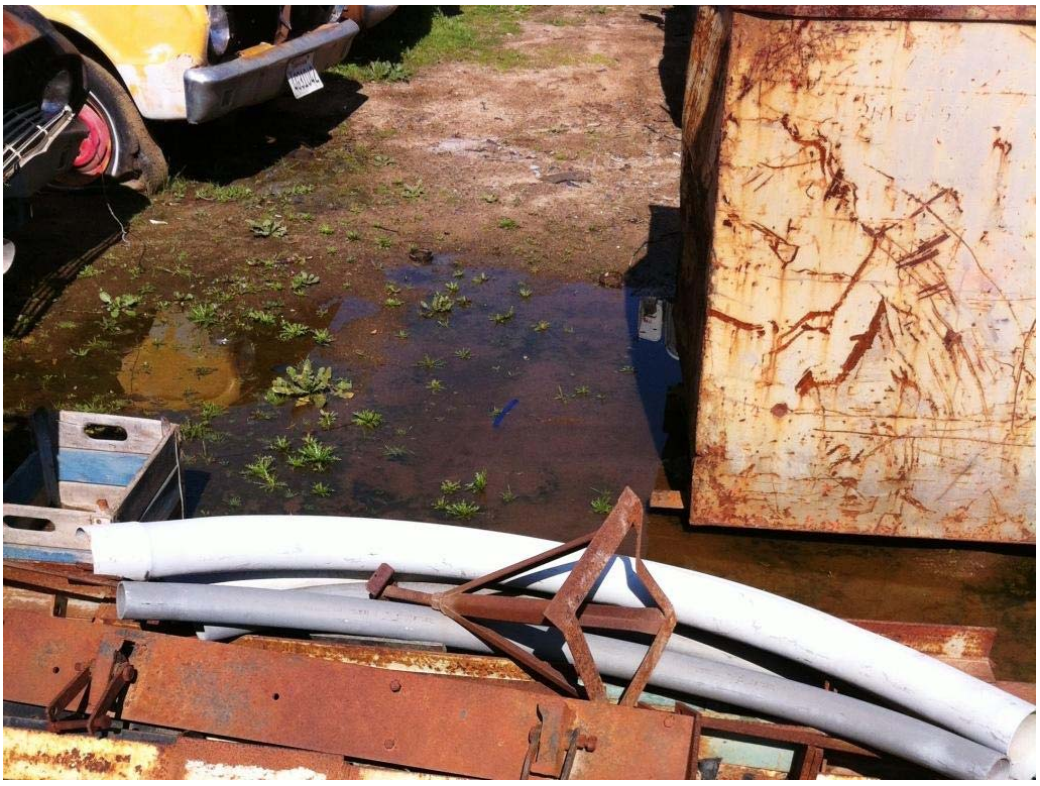
Photograph 6: Pool 260 remained inundated for over 120 days due to landscaping runoff (Taken 3 January 2012).

Study Area Photographs
Proposed Valley - Ivyglen Transmission Line Project,
Phase II

FIGURE

B-3

Photograph 7: Pool 315 at the edge of abandoned agricultural lands (Taken 19 March 2012).



Photograph 8: Pool 342 on a junkyard road (Taken 27 March 2012).

Study Area Photographs
Proposed Valley - Ivyglen Transmission Line Project,
Phase II

FIGURE

B-4

Photograph 9: Pool 238 obliterated by road maintenance (Taken 6 April 2012).

Photograph 10: Three pools in the 247 complex were maintained for over 120 days due to leakage from the water pumping station at upper right (Taken 22 November 2011).

Study Area Photographs
Proposed Valley - Ivyglen Transmission Line Project, Phase II

FIGURE

B-5

APPENDIX C

USFWS NOTIFICATION LETTER

To	Ms. Erin McCarthy Recovery Permit Coordinator U.S. Fish and Wildlife Service 6010 Hidden Valley Road Suite 100 Carlsbad, California 92011
From	John F. Green
Tel	951-369-8060
Fax	951-369-8035
Date	20 November 2011
Subject	Notification of Initiation of Surveys for Federally-listed Vernal Pool Branchiopods along Phase II of the Valley-Ivyglen Subtransmission Line Project, Riverside County, CA

Dear Ms. McCarthy,

This letter is to inform the U.S. Fish and Wildlife Service (USFWS) that AMEC Environment & Infrastructure, Inc. (AMEC) is proposing to conduct wet-season surveys for federally-listed vernal pool Branchiopods in accordance with USFWS *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* along the alignment of Phase II of the Valley-Ivyglen Subtransmission Line Project (VIG) on behalf of Southern California Edison (SCE). All surveys will be conducted by either John F. Green (TE-054011-5) or Nicole Kimball (TE-053598-3), and possibly Karen Miller LaCoste (TE-820658). It is anticipated that the vernal pool surveys will begin after the next significant rain event.

Phase II of the Valley-Ivyglen Subtransmission Line is a linear project which begins within the Lake Elsinore USGS 7.5' quadrangle in Section 31, Township 5 south, Range 4 west. From there it travels northwest, terminating within the Lake Matthews USGS 7.5' quadrangle in Section 2, Township 5 south, Range 6 west. The site passes through commercial and residential areas both urban and rural, and through undeveloped valleys and hillsides (see Figure 1, Phase II).

Please contact me at the numbers above or at john.f.green@amec.com if you have any questions regarding this notification.

Sincerely,

John F. Green

AMEC Environmental & Infrastructure, Inc.
3120 Chicago Ave., Ste. 110t
Riverside, CA 92507 www.amec.com

APPENDIX D

POOL SAMPLING INFORMATION

Appendix D. Pool Sampling Information for the Proposed Valley-Ivyglen Transmission Line Project

Pool	Week	Date	Time of Sample	Actual Depth (cm)	Max Depth (cm)	Actual Length (m)	Actual Width (m)	Max Length (m)	Max Width (m)	Water Temp (°C)	Air Temp (°C)	Shrimp sp.	No. of shrimp	Reproductive Status	Gender	Habitat Condition	Other Species	Comments
4					20			12	3							Const		abandoned project
5					28			72.5	13							Const		abandoned project
134					no past year's data			past year's data missing								Const		Looks like old business demolished here
135																Const		Looks like old business demolished here
136																Const		abandoned project
137					18			18	9							Const		abandoned project
138					19			64	7							Const		abandoned project
139					30.5			5.5	3.5							Const		abandoned project
140					18			30	6							Const		abandoned project
141					13			22	15							Const		abandoned project
142					21			20	10							Const		abandoned project
143					33			37	11.5							Const		abandoned project
144					28			41	15							Const		abandoned project
Y2-1					15			4.5	2							Const		abandoned project
239g	5	01/31/2012	***	10	13	1	1	2.5	2	?	?	?	?	?	?	Const		pool present, but unable to access due to road construction
239g	8	03/13/2012	11:32	?	13	?	?	2.5	2	?	?	?	?	?	?	Const		pool present, but unable to access due to road construction
239g	9	03/27/2012	3:56	11	13	3	4.5	4.5	3	25.6	20.4	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247a	1	12/06/2011	10:00	5	5	1	0.5	1	0.5		15	VFS	100s	juvenile/adult	F, M	RR	***	road shoulder, disturbed, garbage, tracks
247a	2	12/20/2011	?	13	13	3.5	7	3.5	7	?	?	***	***	***	***	RR	***	believed to have dried, newly refilled
247a	9	03/27/2012	2:44	11	13	5	8	5	8	25.6	21	*Branchinecta* sp. too small to ID confidently	10s	juvenile	***	RR	one adult scavenger or diving beetle	FS most likely VFS because this species was previously detected in the pool
247b	1	12/06/2011	10:10	17	17	5	2	5	2		15	***	***	***	***	RR	water boatmen	road shoulder, disturbed, garbage, tracks
247b	2	12/20/2011	?	15	16	3	10	6	17	?	?	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247b	5	01/31/2012	?	13	20	2.7	9	6.1	16.8	12.2	?	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247b	6	02/14/2012	10:25	17	20	2	12	6.1	16.8	11.1	14.4	***	***	***	***	RR	scavenger beetles, diving beetles, backswimmers	road shoulder, disturbed, garbage, tracks
247b	7	02/28/2012	1:53	15	20	3	10	6.1	16.8	13.3	12.8	***	***	***	***	RR	seed shrimp, possible cranefly larvae	road shoulder, disturbed, garbage, tracks

Appendix D. Pool Sampling Information for the Proposed Valley-Ivyglen Transmission Line Project

Pool	Week	Date	Time of Sample	Actual Depth (cm)	Max Depth (cm)	Actual Length (m)	Actual Width (m)	Max Length (m)	Max Width (m)	Water Temp (°C)	Air Temp (°C)	Shrimp sp.	No. of shrimp	Reproductive Status	Gender	Habitat Condition	Other Species	Comments
247b	8	03/13/2012	11:05	15	20	2	6	6.1	16.8	13.3	12.8	***	***	***	***	RR	diving beetles, mosquito larvae	road shoulder, disturbed, garbage, tracks
247b	9	03/27/2012	2:52	19	20	3.5	7	6.1	16.8	25.6	21	***	***	***	***	RR	adult diving or scavenger beetles	road shoulder, disturbed, garbage, tracks
247b	10	4/101/12	9:10	19	20	2.5	12	6.1	16.8	11.7	14.4	***	***	***	***	RR	water boatmen, mayfly larvae	road shoulder, disturbed, garbage, tracks
247b	11	04/24/2012	11:00	24	24	2.5	14	6.1	16.8	21.1	16.5	***	***	***	***	RR	water boatmen, mosquito larvae, water beetles, emergent vegetation	road shoulder, disturbed, garbage, tracks
247b	12	05/08/2012	10:18	11.5	24	1.5	3	6.1	16.8	24.4	29.4	***	***	***	***	RR	water boatmen, water beetles & beetle larvae, emergent vegetation	road shoulder, disturbed, garbage, tracks
247b	13	05/16/2012	11:30	16	24	2.5	9	6.1	16.8	23.3	30.6	***	***	***	***	RR	water beetles & beetle larvae, emergent vegetation	road shoulder, disturbed, garbage, tracks, mowed; 120 day limit
247e	1	12/06/2011	10:15	2	2	2	0.5	2	0.5	?	15	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247e	2	12/20/2011	?	3	4	1	5	4.6	9	?	?	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247e	6	02/14/2012	10:43	4	8	1	6	4.6	9	15	14.4	***	***	***	***	RR	diving beetles	road shoulder, disturbed, garbage, tracks
247e	7	02/28/2012	1:57	3	8	1	6	4.6	9	13.3	12.8	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247e	8	03/13/2012	11:12	3	8	1	5	4.6	9	18.9	12.8	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247e	9	03/27/2012	2:56	3	8	1	6	4.6	9	25.6	21	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247e	10	4/101/12	9:21	4	8	1	5.5	4.6	9	14.4	14.4	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247e	11	04/24/2012	11:07	4	8	1	6	4.6	9	26.7	16.5	***	***	***	***	RR	seed shrimp, emergent vegetation	road shoulder, disturbed, garbage, tracks
247e	12	05/08/2012	10:10	4	8	1	2	4.6	9	25.5	29.4	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247e	13	05/16/2012	11:25	4.5	8	1	7	4.6	9	32.2	30.6	***	***	***	***	RR	water beetles, seed shrimp	road shoulder, disturbed, garbage, tracks; 120 day limit
247f	1	12/06/2011	10:20	5	5	1	0.5	1	0.5	?	15	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247f	2	12/20/2011	?	3	3	2	16	2	16	?	?	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks

Appendix D. Pool Sampling Information for the Proposed Valley-Ivyglen Transmission Line Project

Pool	Week	Date	Time of Sample	Actual Depth (cm)	Max Depth (cm)	Actual Length (m)	Actual Width (m)	Max Length (m)	Max Width (m)	Water Temp (°C)	Air Temp (°C)	Shrimp sp.	No. of shrimp	Reproductive Status	Gender	Habitat Condition	Other Species	Comments
247f	6	02/14/2012	10:35	12	13	1	9	1	10.7	11.7	14.4	***	***	***	***	RR	scavenger beetles, diving beetles	road shoulder, disturbed, garbage, tracks
247f	7	02/28/2012	1:55	8	13	1.5	6	1.5	10.7	13.3	12.8	***	***	***	***	RR	mosquito larvae	road shoulder, disturbed, garbage, tracks
247f	8	03/13/2012	11:08	13	13	1	4	1.5	10.7	14.4	12.8	***	***	***	***	RR	mosquito larvae	road shoulder, disturbed, garbage, tracks
247f	9	03/27/2012	2:54	14	14	1.5	9	1.5	10.7	25.6	21	***	***	***	***	RR	mosquito larvae	road shoulder, disturbed, garbage, tracks
247f	10	4/101/12	9:16	8	14	1	8	1.5	10.7	13.3	14.4	***	***	***	***	RR	mayfly larvae	road shoulder, disturbed, garbage, tracks
247f	11	04/24/2012	11:04	8	14	1	8	1.5	10.7	21.1	16.5	***	***	***	***	RR	mosquito larvae, water beetles, algal mats, emergent vegetation snails, copepods	road shoulder, disturbed, garbage, tracks
247f	12	05/08/2012	10:15	2	14	0.1	2	1.5	10.7	22.2	29.4	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
247f	13	05/16/2012	11:34	5	14	1	3	1.5	10.7	27.8	30.6	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks, mowed; 120 day limit
260	1	12/06/2011	?	11	11	2	1	3	1	?	?	***	***	***	***	RR	snails, water boatmen	road shoulder, disturbed, garbage, tracks
260	2	12/20/2011	?	7	9	1	3	1	3	?	?	***	***	***	***	RR	snails, dragonfly & damselfly larvae	road shoulder, disturbed, garbage, tracks
260	3	01/03/2012	?	9	12	3	1	3	1	?	?	***	***	***	***	RR	snails, stonefly larvae, dragonfly larvae	road shoulder, disturbed, garbage, tracks
260	4	01/17/2012	?	9	13	3	1	3	1	12.8	?	***	***	***	***	RR	snails, dragonfly larvae	road shoulder, disturbed, garbage, tracks
260	5	01/31/2012	?	10	13	3	1	3	1	7.8	?	***	***	***	***	RR	snails, dragonfly & damselfly larvae	road shoulder, disturbed, garbage, tracks
260	6	02/14/2012	9:19	13	13	3	1	3	1	9.4	11.5	***	***	***	***	RR	snails, stonefly larvae	road shoulder, disturbed, garbage, tracks
260	7	02/28/2012	10:22	12	13	7	2	10	4	10	12.6	***	***	***	***	RR	dragonfly & damselfly larvae	road shoulder, disturbed, garbage, tracks
260	8	03/13/2012	10:31	14	14	6	2	10	4	12.2	11.7	***	***	***	***	RR	damselfly & mosquito larvae	road shoulder, disturbed, garbage, tracks
260	9	03/27/2012	9:10	14	14	6	2.5	7	4	10	10.8	***	***	***	***	RR	frog eggs, water beetle	road shoulder, disturbed, garbage, tracks
263	1	12/06/2011	?	3	12	1	1	5.5	4	?	?	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks

Appendix D. Pool Sampling Information for the Proposed Valley-Ivyglen Transmission Line Project

Pool	Week	Date	Time of Sample	Actual Depth (cm)	Max Depth (cm)	Actual Length (m)	Actual Width (m)	Max Length (m)	Max Width (m)	Water Temp (°C)	Air Temp (°C)	Shrimp sp.	No. of shrimp	Reproductive Status	Gender	Habitat Condition	Other Species	Comments
263	2	12/20/2011	?	13	13	3	5.5	4	5.5	?	?	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
263	6	02/14/2012	9:38	8.75	12	2.5	3	5.5	4	8.9	9.7	***	***	***	***	RR	***	road shoulder, disturbed, garbage, tracks
263	7	02/28/2012	11:15	15	15	12	4.5	12	4.5	12.8	11.1	***	***	***	***	RR	adult diving or scavenger beetles	road shoulder, disturbed, garbage, tracks
264	3	01/03/2012	?	20	30	30	5	50	6	?	?	***	***	***	***	RR	***	road shoulder, disturbed, tracks
264	4	01/17/2012	?	18	30	30	3.5	50	6	?	?	***	***	***	***	RR	***	road shoulder, disturbed, tracks
264	5	01/31/2012	?	20	30	2.2	22	50	6	13.3	?	***	***	***	***	RR	scavenger beetles, diving beetles, water boatmen, backswimmers, other unidentified insect larvae	road shoulder, disturbed, tracks
308	9	03/27/2012	12:05	10	13	3	19	3	19	22.2	19.1	***	***	***	***	vacant lot	***	disturbed, garbage, discing/plowing
310	9	03/27/2012	12:44	5	6	0.5	0.3	0.5	0.3	25.6	19.1	***	***	***	***	RR	***	road shoulder, disturbed, tracks
312	9	03/27/2012	12:37	3	4	11	10	11	10	25.6	19.1	***	***	***	***	vacant lot	***	disturbed, tracks, garbage
313	9	03/27/2012	12:40	6	6	3	4	3	4	25.6	19.1	***	***	***	***	vacant lot	***	disturbed, tracks, garbage
314	9	03/27/2012	12:32	5	5	1	0.5	3	2	25.6	19.1	***	***	***	***	vacant lot	***	disturbed, garbage
315	9	03/27/2012	12:25	7	7	4	13	4	13	21.1	19.1	***	***	***	***	vacant lot	***	disturbed, garbage, discing/plowing
316	9	03/27/2012	12:20	14	14	1	3	1	3	11.1	19.1	***	***	***	***	vacant lot	***	disturbed, garbage
317	9	03/27/2012	11:50	4	5	2	6	2	7	25.6	19.1	***	***	***	***	RR	***	road shoulder, disturbed, tracks, garbage
318	9	03/27/2012	11:55	2	3	3.5	2.5	3.5	2.5	25.6	19.1	***	***	***	***	RR	***	unpaved road, disturbed, tracks, garbage
319	9	03/27/2012	12:00	6	6	1.5	0.75	1.5	1	25.6	19.1	***	***	***	***	RR	***	unpaved road, disturbed, tracks, garbage
320	9	03/27/2012	10:00	12	13	2.5	5	2.5	5	12.8	12.8	***	***	***	***	RR	***	unpaved road/road shoulder, disturbed, tracks, garbage
325	9	03/27/2012	3:28	32	32	5.2	7.6	5.2	7.6	25.6	20.4	***	***	***	***	artificial pool	***	disturbed, plastic-lined artifical drainage with unlined collection pool
325	10	4/101/12	9:42	21	32	4	6	5.2	7.6	13	17	***	***	***	***	artificial pool	Pacific tree frog adults, tadpoles; mosquito & mayfly larvae; midge larvae?	disturbed, plastic-lined artifical drainage with unlined collection pool

Appendix D. Pool Sampling Information for the Proposed Valley-Ivyglen Transmission Line Project

Pool	Week	Date	Time of Sample	Actual Depth (cm)	Max Depth (cm)	Actual Length (m)	Actual Width (m)	Max Length (m)	Max Width (m)	Water Temp (°C)	Air Temp (°C)	Shrimp sp.	No. of shrimp	Reproductive Status	Gender	Habitat Condition	Other Species	Comments
325	11	04/24/2012	11:30	22	32	8	5	5.2	8	18.3	17.1	***	***	***	***	artificial pool	Pacific tree frog tadpoles, water boatmen, mosquito larvae, water beetles, seed shrimp, midge larvae	disturbed, plastic-lined artifical drainage with unlined collection pool
325	12	05/08/2012	10:35	16	32	6	5	5.2	8	21.1	29.2	***	***	***	***	artificial pool	Pacific tree frog adults, tadpoles; beetles & larvae, water boatmen, water striders	disturbed, plastic-lined artifical drainage with unlined collection pool

< = less than; F = Female; M = Male; RR = Road Rut(s); Const. = associated with construction project; VFS = Versatile Fairy Shrimp

FINAL HYDROLOGY AND HYDRAULIC STUDY FOR SOUTHERN CALIFORNIA EDISION ALBERHILL SUBSTATION

RIVERSIDE COUNTY
CALIFORNIA

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AUGUST 22, 2011
REVISED:
NOVEMBER 22, 2011
REVISED:
DECEMBER 29, 2011

This report has been prepared by or under the direction of the following registered civil engineer who attests to the technical information contained herein. The registered civil engineer has also judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

Joseph L. Castaneda RCE 59835 Registered Civil Engineer	12-29-2011 Date	Seal

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EXHIBITS

I. INTRODUCTION

The Alberhill Substation is a proposed electrical substation for Southern California Edison in the unincorporated area of Alberhill, located north of Lake Elsinore. The purpose of this study is to determine the peak flow rates tributary to the project site and generated by the project site, and develop preliminary storm drain alignments to collect and convey the onsite and offsite flows through the project site. The scope of this report will include the following:

- Determine the maximum peak 100-year and 10-year flow rates emanating from the onsite and offsite areas for the pre-project and post-project conditions utilizing the Riverside County Flood Control and Water Conservation District's (RCFC & WCD) Rational Method.
- Determine the 10-year and 100-year peak flow and volume generated from the onsite and offsite area tributary to the three onsite basins utilizing the Riverside County Flood Control and Water Conservation District (RCFC & WCD) Unit Hydrograph Method.
- Determine the peak outflow from the three basins based upon the unit hydrographs and volume stored within the basins.
- Prepare basin routing calculations to determine the peak outflows from the basins.
- Determine the storm drain facilities required to intercept and convey the peak flow rates emanating from the onsite and offsite areas.
- Preparation of a preliminary hydrology and hydraulics report, which consists of hydrological and analytical results and exhibits.

II. PROJECT SITE AND DRAINAGE OVERVIEW

The Alberhill Substation is located in the unincorporated area of Alberhill, in Riverside County. The project site is roughly bounded by Interstate 15 to the south, open space area to the north, Love Lane to the west, Temescal Canyon Road to the south west, and open space area to the east (see Figure 1 – Vicinity Map). The project proposes to collect offsite runoff into one of three basins or offsite storm drains, which will discharge the flows back into Temescal Wash, which is the existing downstream tributary. The project will use a series of subsurface storm drains, trapezoidal channels, and v-ditches to collect and convey the onsite and offsite flows. The project is adjacent to Temescal Wash, however, the project is not within the flood plain. The currently Flood Insurance Rate Map (FIRM) panel 06065C2006G has been included as Figure 2.

III. HYDROLOGY ANALYSIS

The RCFC & WCD Hydrology Manual (Reference 1) was used to develop the hydrological parameters for the rational method and unit hydrograph analyses. The calculations were performed using the computer program developed by Civil Cadd/Civil Design.

The rainfall depths for the 2-year and 100-year storm events were obtained from the isohyetal maps included in the RCFC&WCD Hydrology Manual. The isohyetal maps are included as Exhibit G. The Slope of Intensity Duration Curves is included in Exhibit H.

Storm Event	1-hour (in)	3-hour (in)	6-hour (in)	24-hour (in)
2-Year	0.55	1.00	1.40	2.50
100-Year	1.45	2.50	3.50	6.50

The existing soil classification for the area consists of Soil "A", Soil "B", Soil "C" and Soil "D", as shown on Exhibit E. Exhibit E is a hydrologic soils map that was obtained from the United States Department of Agriculture, Natural Resources Conservation Service (NRCS). As recommended by the County of Riverside, an Antecedent Moisture Condition (AMC) II was utilized for the 10-year and 100-year storm events.

The existing condition onsite land use currently consists of graded area, and abandoned buildings which are currently being demolished. The property was previously a horse farm, therefore a runoff index number corresponding to graded land was utilized, with an impervious percentage of 85%. The post-project condition utilized runoff index numbers corresponding to open space, and an impervious percentage of 80%, which is considered conservative for this type of development. The following table summarizes the land use types utilized for the calculations:

Description	Hydrology Manual Land Cover Designation	Soil A RI	Soil B RI	Soil C RI	Soil D RI	Area Impervious
Offsite Open Space	Open Brush – Poor Cover	62	76	84	88	0
Existing Onsite Area	Barren/Graded	78	86	91	93	0.85
Offsite Residential Area (Rural)	Barren/Graded	78	86	91	93	0.70
Post-Project Onsite	Barren/Graded	78	86	91	93	0.80
Basin Areas	Barren/Graded	78	86	91	93	0

The rural residential area is south of Interstate 15 and is tributary to the project site at the southerly boundary. There is an existing 36" pipe that crosses Concordia Ranch Road, and collects approximately 15 acres of offsite area.

The unit hydrograph analyses were performed using a lag time that was calculated by the following formula:

Lag (hours) = TC_{RM} (hours) x 0.80

where TC_{RM} is the corresponding rational method time of concentration for the area from the 10-year rational method calculations, and 0.80 represents an 80% reduction in the time of concentration.

Area "A" is designated as the area tributary to Basin A and to the Line "A" systems (see the Drainage Facilities Map for Line "A" system locations). Area "B" is designated as the areas tributary to Basin B-1A, B-1B and B-2. Area C is the area tributary to the southerly offsite area along Temescal Canyon Road. Area D is the north westerly area that is not conveyed into Basin A. Areas C and D only required Rational Method Analyses since the areas are not tributary to a basin. Area B-1A includes only the area tributary to Basin B-1A, not including the area upstream that is tributary to Basin B-1B. The unit hydrographs for areas B-1A, B-1B and B-2 are used in the series basin routing for the Line B systems (see Section V – Detention Basin Analysis).

The pre-project rational method calculations have been included as Appendix A, the post-project rational method calculations have been included as Appendix B, and the onsite post-project unit hydrograph calculations have been included as Appendix C. The pre-project rational method hydrology map has been included as Exhibit A, the post-project rational method hydrology map has been included as Exhibits B-1 and B-2, and the post-project unit hydrograph watershed areas have been included as Exhibit C.

IV. HYDRAULIC ANALYSIS

The proposed project consists of subsurface storm drain systems, trapezoidal channels, v-ditches, and retention basins. The facilities will be utilized to flood protect the project site. The storm drain facilities were sized the Haestad Flowmaster Program Normal Depth Calculations (see Appendix E) and the Water Surface Profile Gradient (WSPG) Program (see Appenedix F).

STORM DRAIN FACILITIES

The project proposes to construct a total of two subsurface storm drain systems, designated as Lines "A" and "B", which will convey the flows from the four detention basins and discharge the flows back in the Temescal Wash. Additionally, the project will incorporate a series of trapezoidal channels, v-ditches, and subsurface storm drains to convey the onsite flows into Line "A". The project will also construct a trapezoidal channel that will convey the flows emanating from the offsite area "A" into Basin "A" for the 10-year storm flows. Flows in excess of the 10-year storm event will sheet flow to the west and discharge into Temescal Wash, which is the existing downstream tributary. The existing area to the north of the project does not have a defined concentration point for flows entering the project site. Therefore, the 10-year channel design will extend approximately 400 feet along the northerly boundary to collect the offsite flows, and the flows in excess will sheet flow similar to the existing sheet flow condition.

Line "A" and Associated Storm Drain Systems

A total of two storm drains designated as Line A-1 and Line A-2 collect the offsite flows and discharge into Detention Basin "A". Line "A-1" is a proposed trapezoidal channel with a base width of 5 feet, left side slope of 2:1, vertical right side slope, and a depth of 2 feet. The system collects the offsite flows from Area A that are tributary to the north

easterly project boundary. The system has been designed to intercept and convey the 10-year peak flow rate. The flows in excess of the 10-year storm event will sheet flow to the west and discharge into the Temescal Wash, which is the existing downstream tributary for the offsite and onsite areas. Line "A-1" was designed as a wide system to insure that the majority of the sheet flows would be intercepted. Line "A-2" is a proposed v-ditch and trapezoidal channel that collects the remainder of the Area "A" offsite flows to the north of the project site and discharges into Basin "A".

Line "A" is a proposed 36" and 42" RCP storm drain that collects the peak 10-year flows from Detention Basin "A", in addition to the peak 100-year flows generated by the onsite area from Lateral "A-1". The total flow rate is 57.4 ft^3/s (basin outflow) plus 65.6 ft^3/s (onsite 100-year flow rate) which totals 123.0 ft^3/s (see Detention Basin Analysis section for basin outflows). Lateral "A-1" is a proposed 36" RCP that collects flows from the onsite areas and discharges into Line "A". See Exhibit D, Drainage Facilities Map, for details on the storm drain facilities.

Line "A-1" collects the offsite flows from the northerly offsite area for the peak 10-year storm event. The flows in excess of the 10-year storm event will sheet flow to the west and ultimately discharge into the Temescal Wash, which is the existing downstream tributary. The offsite flows tributary to the project at node 109 split between sheet flows to the west and flowing to the south onto the project site. Currently there are barricades to the north of the project that act as a channel with the hillside and discharge flows onto the project site (see Exhibit I – Field Reconnaissance Map). Since the barricades are not a permanent facility, and there is no defined natural concentration point for the entirety of the tributary offsite flows, Line "A-1" will be constructed along approximately 400 feet of the northerly project boundary near node 109 to collect the 10-year offsite flows. Line "A-1" will utilize 2:1 side slopes (see Figure 3 for Line "A-1" cross section) along the project boundary so that flows can "sheet flow" into the system, and the southerly side of the system will utilize vertical wall that is four feet high. This wall will ensure that the 100-year flows do not enter Detention Basin "A", since the depth of the 100-year flows is 2.6 feet. The channel will be 2 feet deep, based upon the 10-year normal depth calculations.

Line "B" and Associated Storm Drain Systems

Line "B" collects flows from Basin B-2, as well as flows from the existing 36" CMP that crosses Concordia Ranch Road. Line "B" has pipe sizes ranging from 36" RCP to 42" RCP. The system flows along the easterly and southerly project boundary, and ultimately discharges flow at the westerly project boundary into Temescal Wash. Line B was analyzed in the WSPG calculations with the peak flow rate out of Basin B-2 (71.9 ft^3/s), and not including the 32.2 ft^3/s from the offsite area to the south from Lateral "B-1" (the existing 36" CMP). This is due to the fact that with the timing of the basin routing, the peak flows from the offsite area will already have been conveyed through the storm drain system, and not have an impact on the Line "B" hydraulics. Therefore it was not included in the WSPG analysis.

Lateral "B-3" is a 48" storm drain that conveys flows from Basin B-1B to Basin B-1A. Lateral "B-3" has a peak flow rate of 147.8 ft^3/s. Lateral "B-2" is a 42" storm drain that conveys flows from Basin B-1A to Basin B-2, and has a peak flow rate of 84.9 ft^3/s.

The major storm drain systems (Line "A", Line "B", Lateral "A-1", Lateral "B-2", and Lateral "B-3") were analyzed using the Water Surface Profile Gradient Program, and the calculations have been included in Appendix F. The remaining smaller onsite systems were analyzed for normal depth using the Haestad Flowmaster Program, and the calculations have been included in Appendix E.

V. DETENTION BASIN ANALYSIS

The project proposes a total of 4 detention basins that will be utilized to collect offsite flows. The offsite flows will then be routed through subsurface storm drain and discharged at the existing downstream terminus, Temescal Wash.

In order to compile basin outflow curves, WSPG calculations were performed for the basin outlets using multiple flow rates to obtain a flow rate and a corresponding upstream water surface elevation. The upstream water surface elevation represents the water within the basin. Using this data, water surface elevations were interpolated at the basin elevations to develop an elevation vs. outflow table (see Appendix D for outflow tables).

Basin "A" utilized the 10-year unit hydrographs due to the offsite system having a maximum capacity for the 10-year storm event. Basin routing calculations were performed for the 1-hour, 3-hour, 6-hour and 24-hour storm durations to determine the maximum peak outflow for the 10-year storm event. The results are summarized below:

Storm Duration	Peak Outflow
10-Year, 1-Hour	49.4 ft^3/s
10-Year, 3-Hour	56.2 ft^3/s
10-Year, 6-Hour	57.4 ft^3/s
10-Year, 24-Hour	4 ft^3/s

Line "A" (reach 2) was sized for the 10-year, 6-hour peak outflow from the basin, and reach 1 was sized for the peak basin outflow and the total onsite peak 100-year flow rate from Lateral "A-1".

Basin "B-1A", Basin "B-1B" and Basin "B-2" utilized the 100-year unit hydrographs for the basin outflow calculations. The peak flow rate for Line "B" consists of the peak flow rate from Basin "B-2", which was analyzed as series basins.

The outflow curve for Basin B-1B was analyzed using the weir equation, since the hydraulics are solely controlled by the weir and not the storm drain. The back water

condition for Lateral "B-3" does not pond higher than the weir elevation, and therefore does not impact the outflow of the basin.

The basin routing calculations have been included in Appendix D.

Since the majority of the flows for the watershed area are offsite flows, the mitigation for the offsite flows is sufficient for overall mitigation associated with the development of the project.

VI. CONCLUSIONS

Drainage analyses were prepared for the project site in order to determine the pre-project and post-project conditions. The following conclusions were derived from the hydrology and hydraulic results:

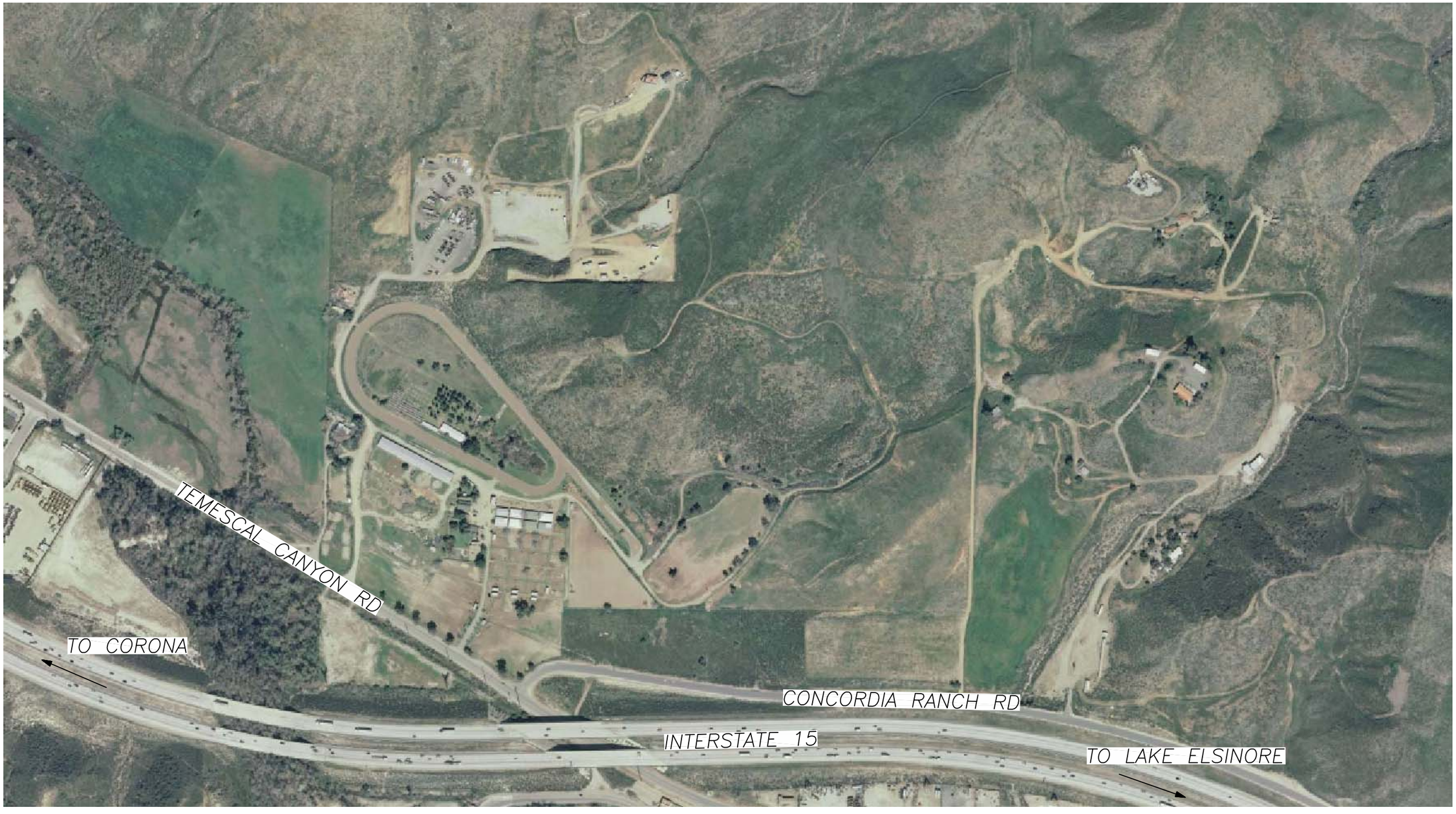
1. The offsite flows from the areas to the north and east of the project will be intercepted and mitigated through three detention basins.
2. The onsite storm drain facilities have been sized for the peak 100-year flow rates to provide flood protection to the project site.
3. The project mitigates flows for increased runoff using the three proposed detention basins.

VII. REFERENCES

1. Riverside County Flood Control and Water Conservation District Hydrology Manual, April 1978.
2. Los Angeles County Flood Control Design Manual, March 1982

FIGURES

FIGURE 1: VICINITY MAP

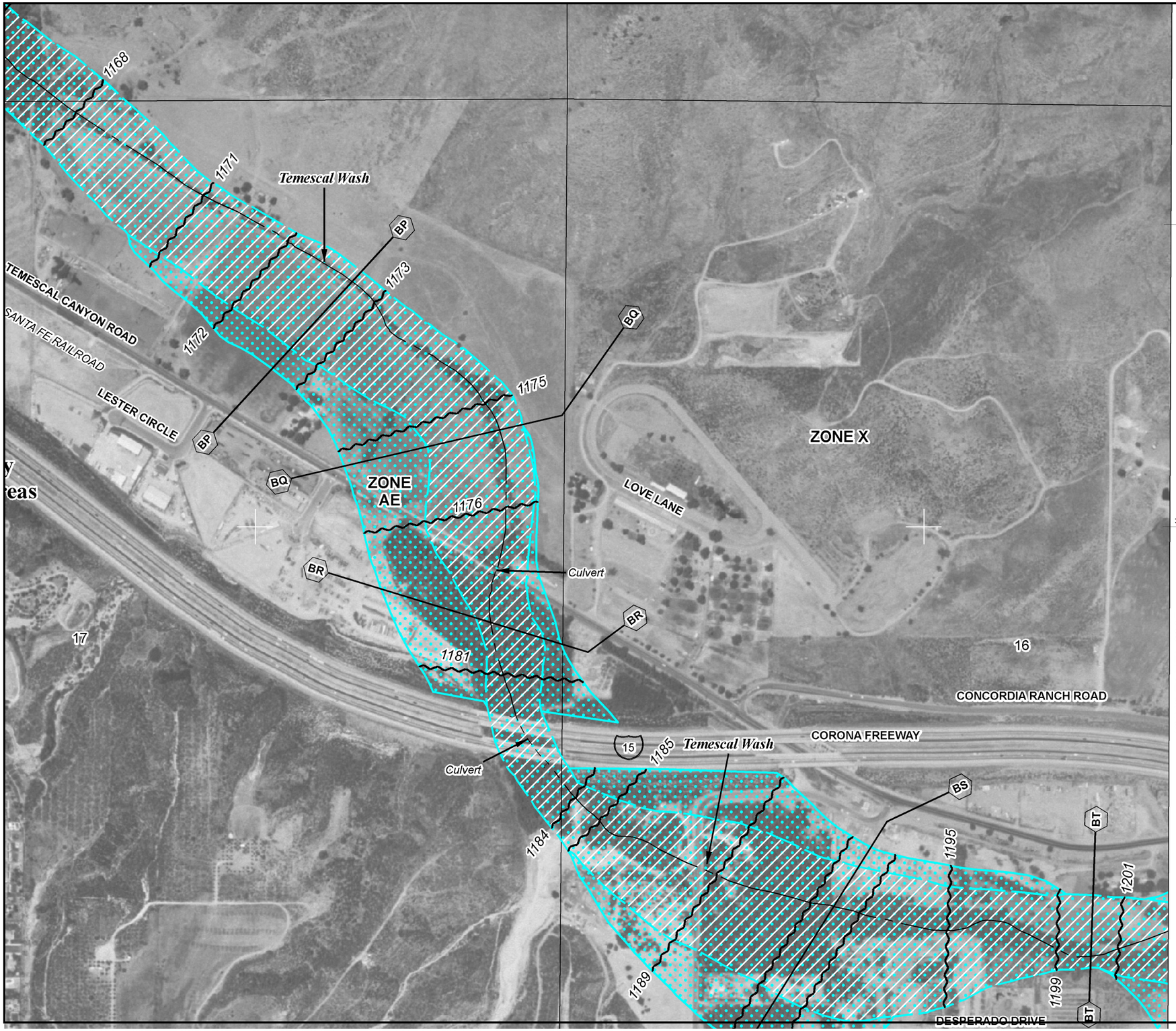


REGIONAL DRAINAGE SOLUTION
ALTERNATIVE 2

JLC Engineering & Consulting, Inc.
36263 CALLE DE LOBO
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

FIGURE 1

FIGURE 2: FLOOD INSURANCE RATE MAP (FIRMETTE)



MAP SCALE 1" = 500'

250 0 500 1000

FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2006G

FIRM

FLOOD INSURANCE RATE MAP

RIVERSIDE COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 2006 OF 3805

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
RIVERSIDE COUNTY	060245	2006	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06065C2006G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

FIGURE 3: PROPOSED LINE "A-1" TRAPEZOIDAL CHANNEL CROSS SECTION

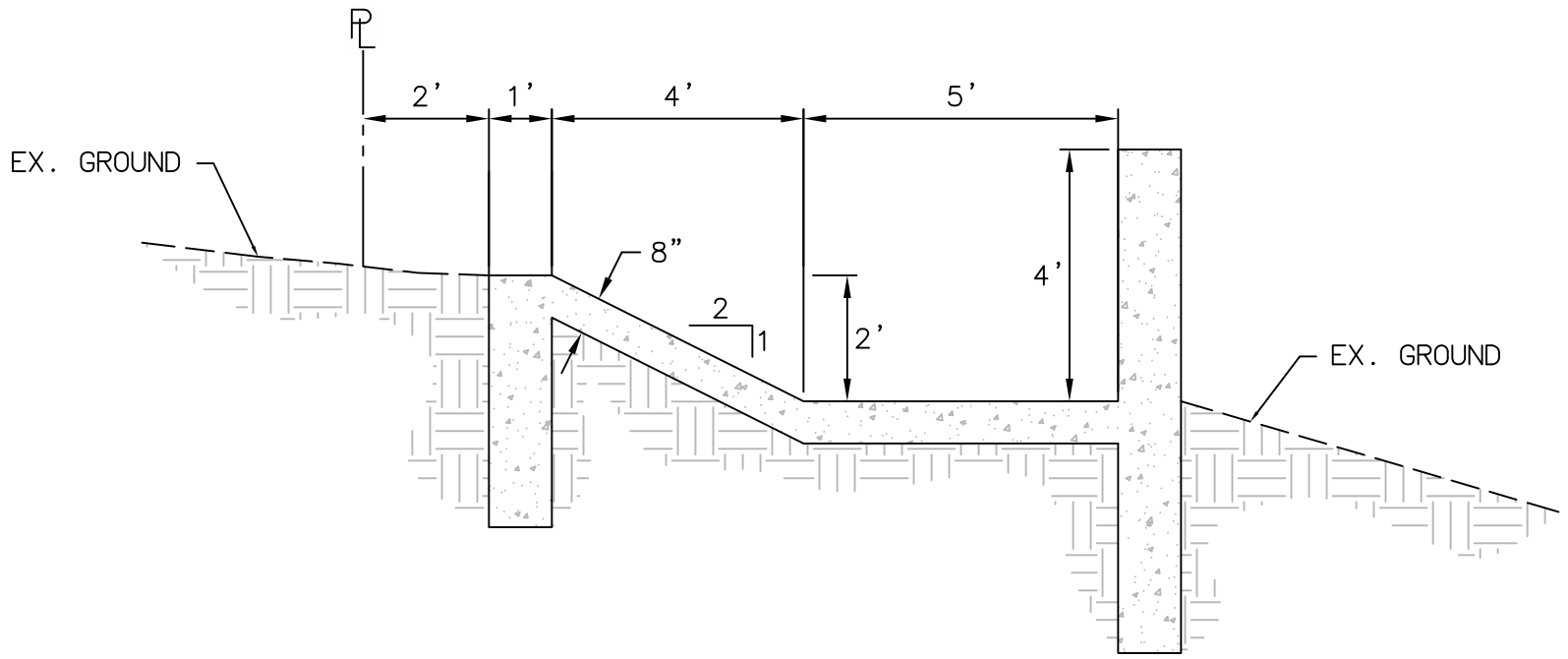


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FIGURE 3

APPENDICES

APPENDIX A: EXISTING CONDITION RATIONAL METHOD ANALYSIS

APPENDIX A.1: AREA "A"

100-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/01/11 File:ARAEX100.out

ALBERHILL EXISTING CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 100-YEAR STORM EVENT
FILENAME: ARAEX100

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.450(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 603.000(Ft.)
Top (of initial area) elevation = 2380.000(Ft.)
Bottom (of initial area) elevation = 2040.000(Ft.)
Difference in elevation = 340.000(Ft.)
Slope = 0.56385 s(percent)= 56.38
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.848 min.
Rainfall intensity = 3.622(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.841
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 84.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 23.757(CFS)
Total initial stream area = 7.800(Ac.)
Pervious area fraction = 1.000

++

Process from Point/Station 102.000 to Point/Station 103.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2040.000(Ft.)
End of natural channel elevation = 1828.000(Ft.)
Length of natural channel = 786.000(Ft.)

```
Estimated mean flow rate at midpoint of channel =     44.469(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  19.44(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2697
Corrected/adjusted channel slope =  0.2697
Travel time =    0.67 min.     TC =    8.52  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.839
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.490(In/Hr) for a   100.0 year storm
Subarea runoff =     39.817(CFS) for     13.600(Ac.)
Total runoff =     63.574(CFS)       Total area =      21.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      104.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1828.000(Ft.)
End of natural channel elevation =   1708.000(Ft.)
Length of natural channel  =   780.000(Ft.)
Estimated mean flow rate at midpoint of channel =    102.343(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  18.75(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1538
Corrected/adjusted channel slope =  0.1538
Travel time =    0.69 min.     TC =    9.22  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.369(In/Hr) for a   100.0 year storm
Subarea runoff =     73.591(CFS) for     26.100(Ac.)
Total runoff =    137.165(CFS)       Total area =      47.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      105.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1708.000(Ft.)
End of natural channel elevation =   1512.000(Ft.)
Length of natural channel  =  1206.000(Ft.)
Estimated mean flow rate at midpoint of channel =    214.555(CFS)
```

```
Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  24.16(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1625
Corrected/adjusted channel slope =  0.1625
Travel time =    0.83 min.     TC =   10.05  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.835
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.241(In/Hr) for a   100.0 year storm
Subarea runoff =    144.962(CFS) for     53.600(Ac.)
Total runoff =    282.128(CFS)       Total area =     101.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1512.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1483.000(Ft.)
Estimated mean flow rate at midpoint of channel =    324.126(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  23.57(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1194
Corrected/adjusted channel slope =  0.1194
Travel time =    1.05 min.     TC =   11.10  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.832
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.950
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.099(In/Hr) for a   100.0 year storm
Subarea runoff =     77.591(CFS) for     30.100(Ac.)
Total runoff =    359.719(CFS)       Total area =     131.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    131.200(Ac.)
Runoff from this stream =    359.719(CFS)
Time of concentration =   11.10 min.
Rainfall intensity =     3.099(In/Hr)
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      107.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   823.000(Ft.)
Top (of initial area) elevation =  1988.000(Ft.)
Bottom (of initial area) elevation =  1580.000(Ft.)
Difference in elevation =   408.000(Ft.)
Slope =    0.49575  s(percent)=      49.57
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.119 min.
Rainfall intensity =      3.385(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     21.254(CFS)
Total initial stream area =        7.500(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1580.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1171.000(Ft.)
Estimated mean flow rate at midpoint of channel =     44.349(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  17.10(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2092
Corrected/adjusted channel slope =  0.2092
Travel time =    1.14 min.     TC =   10.26  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.833
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.030
Decimal fraction soil group C = 0.970
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.79
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.210(In/Hr) for a   100.0 year storm
Subarea runoff =     43.589(CFS) for     16.300(Ac.)
Total runoff =     64.842(CFS)        Total area =      23.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     23.800(Ac.)
Runoff from this stream =     64.842(CFS)
Time of concentration =   10.26 min.
Rainfall intensity =     3.210(In/Hr)
```

```
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      359.719     11.10                3.099
2       64.842     10.26                3.210
Largest stream flow has longer time of concentration
Qp =    359.719 + sum of
          Qb         Ia/Ib
          64.842 *    0.965 =     62.598
Qp =    422.317

Total of 2 streams to confluence:
Flow rates before confluence point:
     359.719      64.842
Area of streams before confluence:
      131.200       23.800
Results of confluence:
Total flow rate =    422.317(CFS)
Time of concentration =    11.096 min.
Effective stream area after confluence =    155.000(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      109.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1335.000(Ft.)
End of natural channel elevation =   1254.000(Ft.)
Length of natural channel  =  1202.000(Ft.)
Estimated mean flow rate at midpoint of channel =    469.044(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  19.92(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0674
Corrected/adjusted channel slope =  0.0674
Travel time =    1.01 min.     TC =   12.10  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.812
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.430
Decimal fraction soil group C = 0.570
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  80.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.980(In/Hr) for a   100.0 year storm
Subarea runoff =     83.046(CFS) for     34.300(Ac.)
Total runoff =    505.363(CFS)       Total area =     189.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      110.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1254.000(Ft.)
End of natural channel elevation =   1188.000(Ft.)
Length of natural channel  =  1290.000(Ft.)
Estimated mean flow rate at midpoint of channel =    535.129(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
```

```
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  18.10(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    1.19 min.     TC =   13.29  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.834
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.470
Decimal fraction soil group C = 0.530
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.46
Pervious area fraction =  0.930; Impervious fraction =  0.070
Rainfall intensity =      2.857(In/Hr) for a   100.0 year storm
Subarea runoff =     53.129(CFS) for     22.300(Ac.)
Total runoff =    558.492(CFS)       Total area =     211.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      110.000 to Point/Station      111.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1188.000(Ft.)
End of natural channel elevation =   1181.000(Ft.)
Length of natural channel  =   979.000(Ft.)
Estimated mean flow rate at midpoint of channel =    571.557(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   6.91(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0072
Corrected/adjusted channel slope =  0.0072
Travel time =    2.36 min.     TC =   15.65  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.864
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  91.00
Pervious area fraction =  0.850; Impervious fraction =  0.150
Rainfall intensity =      2.655(In/Hr) for a   100.0 year storm
Subarea runoff =     22.701(CFS) for      9.900(Ac.)
Total runoff =    581.193(CFS)       Total area =     221.500(Ac.)
End of computations, total study area =          221.50 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.986
Area averaged RI index number =  83.8
```

10-YEAR

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
       Rational Hydrology Study        Date: 08/05/11  File:ARAEX10.out
------------------------------------------------------------------------
ALBERHILL EXISTING CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARAEX10

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6045

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.550(In.)
100 year, 1 hour precipitation =  1.450(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.920(In/Hr)
Slope of intensity duration curve = 0.4500




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      101.000 to Point/Station      102.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   603.000(Ft.)
Top (of initial area) elevation =  2380.000(Ft.)
Bottom (of initial area) elevation =  2040.000(Ft.)
Difference in elevation =   340.000(Ft.)
Slope =    0.56385  s(percent)=      56.38
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.848 min.
Rainfall intensity =      2.298(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.810
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     14.530(CFS)
Total initial stream area =        7.800(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2040.000(Ft.)
End of natural channel elevation =   1828.000(Ft.)
Length of natural channel  =   786.000(Ft.)
```

```
Estimated mean flow rate at midpoint of channel =     27.197(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  16.92(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2697
Corrected/adjusted channel slope =  0.2697
Travel time =    0.77 min.     TC =    8.62  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.807
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.203(In/Hr) for a    10.0 year storm
Subarea runoff =     24.180(CFS) for     13.600(Ac.)
Total runoff =     38.710(CFS)        Total area =      21.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      104.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1828.000(Ft.)
End of natural channel elevation =   1708.000(Ft.)
Length of natural channel  =   780.000(Ft.)
Estimated mean flow rate at midpoint of channel =     62.316(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  16.18(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1538
Corrected/adjusted channel slope =  0.1538
Travel time =    0.80 min.     TC =    9.43  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.804
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.117(In/Hr) for a    10.0 year storm
Subarea runoff =     44.394(CFS) for     26.100(Ac.)
Total runoff =     83.104(CFS)        Total area =      47.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      105.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1708.000(Ft.)
End of natural channel elevation =   1512.000(Ft.)
Length of natural channel  =  1206.000(Ft.)
Estimated mean flow rate at midpoint of channel =    129.992(CFS)
```

```
Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  20.71(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1625
Corrected/adjusted channel slope =  0.1625
Travel time =    0.97 min.     TC =   10.40  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.800
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.025(In/Hr) for a    10.0 year storm
Subarea runoff =     86.816(CFS) for     53.600(Ac.)
Total runoff =    169.920(CFS)       Total area =     101.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1512.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1483.000(Ft.)
Estimated mean flow rate at midpoint of channel =    195.215(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  20.11(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1194
Corrected/adjusted channel slope =  0.1194
Travel time =    1.23 min.     TC =   11.62  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.795
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.950
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.926(In/Hr) for a    10.0 year storm
Subarea runoff =     46.097(CFS) for     30.100(Ac.)
Total runoff =    216.018(CFS)       Total area =     131.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    131.200(Ac.)
Runoff from this stream =    216.018(CFS)
Time of concentration =   11.62 min.
Rainfall intensity =     1.926(In/Hr)
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      107.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   823.000(Ft.)
Top (of initial area) elevation =  1988.000(Ft.)
Bottom (of initial area) elevation =  1580.000(Ft.)
Difference in elevation =   408.000(Ft.)
Slope =    0.49575  s(percent)=      49.57
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.119 min.
Rainfall intensity =      2.148(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.805
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     12.968(CFS)
Total initial stream area =        7.500(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1580.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1171.000(Ft.)
Estimated mean flow rate at midpoint of channel =     27.060(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  14.89(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2092
Corrected/adjusted channel slope =  0.2092
Travel time =    1.31 min.     TC =   10.43  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.798
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.030
Decimal fraction soil group C = 0.970
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.79
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.022(In/Hr) for a    10.0 year storm
Subarea runoff =     26.311(CFS) for     16.300(Ac.)
Total runoff =     39.279(CFS)        Total area =      23.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     23.800(Ac.)
Runoff from this stream =     39.279(CFS)
Time of concentration =   10.43 min.
Rainfall intensity =     2.022(In/Hr)
```

```
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      216.018     11.62                 1.926
2       39.279     10.43                 2.022
Largest stream flow has longer time of concentration
Qp =    216.018 + sum of
          Qb         Ia/Ib
          39.279 *    0.952 =     37.409
Qp =    253.427

Total of 2 streams to confluence:
Flow rates before confluence point:
     216.018      39.279
Area of streams before confluence:
      131.200       23.800
Results of confluence:
Total flow rate =    253.427(CFS)
Time of concentration =    11.625 min.
Effective stream area after confluence =    155.000(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      109.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1335.000(Ft.)
End of natural channel elevation =   1254.000(Ft.)
Length of natural channel  =  1202.000(Ft.)
Estimated mean flow rate at midpoint of channel =    281.467(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  16.94(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0674
Corrected/adjusted channel slope =  0.0674
Travel time =    1.18 min.     TC =   12.81  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.766
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.430
Decimal fraction soil group C = 0.570
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  80.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.844(In/Hr) for a    10.0 year storm
Subarea runoff =     48.472(CFS) for     34.300(Ac.)
Total runoff =    301.899(CFS)       Total area =     189.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      110.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1254.000(Ft.)
End of natural channel elevation =   1188.000(Ft.)
Length of natural channel  =  1290.000(Ft.)
Estimated mean flow rate at midpoint of channel =    319.681(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
```

```
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  15.36(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    1.40 min.     TC =   14.21  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.798
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.470
Decimal fraction soil group C = 0.530
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.46
Pervious area fraction =  0.930; Impervious fraction =  0.070
Rainfall intensity =      1.760(In/Hr) for a    10.0 year storm
Subarea runoff =     31.300(CFS) for     22.300(Ac.)
Total runoff =    333.199(CFS)       Total area =     211.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      110.000 to Point/Station      111.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1188.000(Ft.)
End of natural channel elevation =   1181.000(Ft.)
Length of natural channel  =   979.000(Ft.)
Estimated mean flow rate at midpoint of channel =    340.993(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   5.86(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0072
Corrected/adjusted channel slope =  0.0072
Travel time =    2.78 min.     TC =   16.99  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.843
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  91.00
Pervious area fraction =  0.850; Impervious fraction =  0.150
Rainfall intensity =      1.624(In/Hr) for a    10.0 year storm
Subarea runoff =     13.543(CFS) for      9.900(Ac.)
Total runoff =    346.741(CFS)       Total area =     221.500(Ac.)
End of computations, total study area =          221.50 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.986
Area averaged RI index number =  83.8
```

APPENDIX A.2: AREA "B"

100-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/05/11 File:ARBEX100.out

ALBERHILL EXISTING CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 100-YEAR STORM EVENT
FILENAME: ARBEX100

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.450(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 201.000 to Point/Station 202.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 765.000(Ft.)
Top (of initial area) elevation = 1844.000(Ft.)
Bottom (of initial area) elevation = 1556.000(Ft.)
Difference in elevation = 288.000(Ft.)
Slope = 0.37647 s(percent)= 37.65
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.358 min.
Rainfall intensity = 3.346(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 84.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 19.872(CFS)
Total initial stream area = 7.100(Ac.)
Pervious area fraction = 1.000

++

Process from Point/Station 202.000 to Point/Station 203.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 1556.000(Ft.)
End of natural channel elevation = 1440.000(Ft.)
Length of natural channel = 851.000(Ft.)

```
Estimated mean flow rate at midpoint of channel =     38.064(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.22(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1363
Corrected/adjusted channel slope =  0.1363
Travel time =    1.07 min.     TC =   10.43  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.834
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.186(In/Hr) for a   100.0 year storm
Subarea runoff =     34.528(CFS) for     13.000(Ac.)
Total runoff =     54.400(CFS)       Total area =      20.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      204.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1440.000(Ft.)
End of natural channel elevation =   1302.000(Ft.)
Length of natural channel  =  1459.000(Ft.)
Estimated mean flow rate at midpoint of channel =     83.765(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.85(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0946
Corrected/adjusted channel slope =  0.0946
Travel time =    1.76 min.     TC =   12.19  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.829
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.971(In/Hr) for a   100.0 year storm
Subarea runoff =     53.451(CFS) for     21.700(Ac.)
Total runoff =    107.851(CFS)       Total area =      41.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      204.000 to Point/Station      205.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1302.000(Ft.)
End of natural channel elevation =   1217.000(Ft.)
Length of natural channel  =  1511.000(Ft.)
Estimated mean flow rate at midpoint of channel =    161.776(CFS)
```

```
Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.03(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0563
Corrected/adjusted channel slope =  0.0563
Travel time =    1.93 min.     TC =   14.12  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.826
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.020
Decimal fraction soil group C = 0.860
Decimal fraction soil group D = 0.120
RI index for soil(AMC 2)  =  84.31
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.780(In/Hr) for a   100.0 year storm
Subarea runoff =     96.029(CFS) for     41.800(Ac.)
Total runoff =    203.880(CFS)       Total area =      83.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      205.000 to Point/Station      208.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1217.000(Ft.)
End of natural channel elevation =   1184.000(Ft.)
Length of natural channel  =  1434.000(Ft.)
Estimated mean flow rate at midpoint of channel =    240.583(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   9.42(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0230
Corrected/adjusted channel slope =  0.0230
Travel time =    2.54 min.     TC =   16.66  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.824
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.430
Decimal fraction soil group C = 0.070
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  84.40
Pervious area fraction =  0.970; Impervious fraction =  0.030
Rainfall intensity =      2.581(In/Hr) for a   100.0 year storm
Subarea runoff =     64.014(CFS) for     30.100(Ac.)
Total runoff =    267.894(CFS)       Total area =     113.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      205.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    113.700(Ac.)
Runoff from this stream =    267.894(CFS)
Time of concentration =   16.66 min.
Rainfall intensity =     2.581(In/Hr)
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      206.000 to Point/Station      207.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   553.000(Ft.)
Top (of initial area) elevation =  1230.000(Ft.)
Bottom (of initial area) elevation =  1210.000(Ft.)
Difference in elevation =    20.000(Ft.)
Slope =    0.03617  s(percent)=       3.62
TC = k(0.474)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.514 min.
Rainfall intensity =      3.048(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.855
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.710
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.290
RI index for soil(AMC 2)  =  86.53
Pervious area fraction =  0.780; Impervious fraction =  0.220
Initial subarea runoff =     11.209(CFS)
Total initial stream area =        4.300(Ac.)
Pervious area fraction = 0.780


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      207.000 to Point/Station      208.000
**** IMPROVED CHANNEL TRAVEL TIME ****
______________________________________________________________________________
Upstream point elevation =  1210.000(Ft.)
Downstream point elevation =  1184.000(Ft.)
Channel length thru subarea  =  1809.000(Ft.)
Channel base width     =   10.000(Ft.)
Slope or 'Z' of left channel bank =  10.000
Slope or 'Z' of right channel bank =  10.000
Estimated mean flow rate at midpoint of channel =     17.717(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    1.500(Ft.)
Flow(q) thru subarea =     17.717(CFS)
Depth of flow =   0.434(Ft.), Average velocity =   2.849(Ft/s)
Channel flow top width =   18.676(Ft.)
Flow Velocity =    2.85(Ft/s)
Travel time  =   10.58 min.
Time of concentration =   22.10 min.

Sub-Channel No. 1 Critical depth =      0.398(Ft.)
  '     '       '     Critical flow top width =     17.969(Ft.)
  '     '       '     Critical flow velocity=    3.180(Ft/s)
  '     '       '     Critical flow area =      5.572(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.817
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.790
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.210
RI index for soil(AMC 2)  =  83.19
Pervious area fraction =  0.870; Impervious fraction =  0.130
Rainfall intensity =      2.273(In/Hr) for a   100.0 year storm
Subarea runoff =     12.925(CFS) for      6.960(Ac.)
Total runoff =     24.133(CFS)        Total area =      11.260(Ac.)
Depth of flow =   0.511(Ft.), Average velocity =   3.122(Ft/s)

Sub-Channel No. 1 Critical depth =      0.477(Ft.)
  '     '       '     Critical flow top width =     19.531(Ft.)
  '     '       '     Critical flow velocity=    3.430(Ft/s)
  '     '       '     Critical flow area =      7.037(Sq.Ft)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      207.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
____________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     11.260(Ac.)
Runoff from this stream =     24.133(CFS)
Time of concentration =   22.10 min.
Rainfall intensity =     2.273(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      267.894     16.66                2.581
2       24.133     22.10                2.273
Largest stream flow has longer or shorter time of concentration
Qp =    267.894 + sum of
          Qa          Tb/Ta
          24.133 *    0.754 =     18.191
Qp =    286.085

Total of 2 streams to confluence:
Flow rates before confluence point:
     267.894      24.133
Area of streams before confluence:
      113.700       11.260
Results of confluence:
Total flow rate =    286.085(CFS)
Time of concentration =    16.656 min.
Effective stream area after confluence =    124.960(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      208.000 to Point/Station      209.000
**** IMPROVED CHANNEL TRAVEL TIME ****
____________________________________________________________________________
Upstream point elevation =  1184.000(Ft.)
Downstream point elevation =  1179.000(Ft.)
Channel length thru subarea  =   743.000(Ft.)
Channel base width     =   12.000(Ft.)
Slope or 'Z' of left channel bank =   4.000
Slope or 'Z' of right channel bank =   4.000
Estimated mean flow rate at midpoint of channel =    289.562(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =    289.562(CFS)
Depth of flow =   2.335(Ft.), Average velocity =   5.863(Ft/s)
!!Warning: Water is above left or right bank elevations
Channel flow top width =   28.000(Ft.)
Flow Velocity =    5.86(Ft/s)
Travel time  =    2.11 min.
Time of concentration =   18.77 min.

Sub-Channel No. 1 Critical depth =      2.063(Ft.)
  '     '       '     Critical flow top width =     28.000(Ft.)
  '     '       '     Critical flow velocity=    6.936(Ft/s)
  '     '       '     Critical flow area =     41.750(Sq.Ft)

ERROR - Channel depth exceeds maximum allowable depth
 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.829
Decimal fraction soil group A = 0.215
Decimal fraction soil group B = 0.785
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.28
```

```
Pervious area fraction =  0.850; Impervious fraction =  0.150
Rainfall intensity =      2.446(In/Hr) for a   100.0 year storm
Subarea runoff =      6.898(CFS) for      3.400(Ac.)
Total runoff =    292.983(CFS)        Total area =     128.360(Ac.)
Depth of flow =   2.348(Ft.), Average velocity =   5.891(Ft/s)
!!Warning: Water is above left or right bank elevations
ERROR - Channel depth exceeds maximum allowable depth

Sub-Channel No. 1 Critical depth =      2.078(Ft.)
  '     '       '     Critical flow top width =     28.000(Ft.)
  '     '       '     Critical flow velocity=    6.945(Ft/s)
  '     '       '     Critical flow area =     42.188(Sq.Ft)

End of computations, total study area =          128.36 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.975
Area averaged RI index number =  84.2
```

10-YEAR

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
       Rational Hydrology Study        Date: 08/05/11  File:ARBEX10.out
------------------------------------------------------------------------
ALBERHILL EXISTING CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARBEX10

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6045

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.550(In.)
100 year, 1 hour precipitation =  1.450(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.920(In/Hr)
Slope of intensity duration curve = 0.4500




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      201.000 to Point/Station      202.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   765.000(Ft.)
Top (of initial area) elevation =  1844.000(Ft.)
Bottom (of initial area) elevation =  1556.000(Ft.)
Difference in elevation =   288.000(Ft.)
Slope =    0.37647  s(percent)=      37.65
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.358 min.
Rainfall intensity =      2.123(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.804
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     12.120(CFS)
Total initial stream area =        7.100(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      202.000 to Point/Station      203.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1556.000(Ft.)
End of natural channel elevation =   1440.000(Ft.)
Length of natural channel  =   851.000(Ft.)
```

```
Estimated mean flow rate at midpoint of channel =     23.215(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.52(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1363
Corrected/adjusted channel slope =  0.1363
Travel time =    1.23 min.     TC =   10.59  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.799
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.009(In/Hr) for a    10.0 year storm
Subarea runoff =     20.863(CFS) for     13.000(Ac.)
Total runoff =     32.982(CFS)        Total area =      20.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      204.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1440.000(Ft.)
End of natural channel elevation =   1302.000(Ft.)
Length of natural channel  =  1459.000(Ft.)
Estimated mean flow rate at midpoint of channel =     50.786(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.96(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0946
Corrected/adjusted channel slope =  0.0946
Travel time =    2.03 min.     TC =   12.62  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.792
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.856(In/Hr) for a    10.0 year storm
Subarea runoff =     31.883(CFS) for     21.700(Ac.)
Total runoff =     64.866(CFS)        Total area =      41.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      204.000 to Point/Station      205.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1302.000(Ft.)
End of natural channel elevation =   1217.000(Ft.)
Length of natural channel  =  1511.000(Ft.)
Estimated mean flow rate at midpoint of channel =     97.299(CFS)
```

```
Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.17(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0563
Corrected/adjusted channel slope =  0.0563
Travel time =    2.26 min.     TC =   14.88  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.787
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.020
Decimal fraction soil group C = 0.860
Decimal fraction soil group D = 0.120
RI index for soil(AMC 2)  =  84.31
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.724(In/Hr) for a    10.0 year storm
Subarea runoff =     56.682(CFS) for     41.800(Ac.)
Total runoff =    121.548(CFS)       Total area =      83.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      205.000 to Point/Station      208.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1217.000(Ft.)
End of natural channel elevation =   1184.000(Ft.)
Length of natural channel  =  1434.000(Ft.)
Estimated mean flow rate at midpoint of channel =    143.429(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   8.03(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0230
Corrected/adjusted channel slope =  0.0230
Travel time =    2.98 min.     TC =   17.85  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.783
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.430
Decimal fraction soil group C = 0.070
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  84.40
Pervious area fraction =  0.970; Impervious fraction =  0.030
Rainfall intensity =      1.588(In/Hr) for a    10.0 year storm
Subarea runoff =     37.408(CFS) for     30.100(Ac.)
Total runoff =    158.956(CFS)       Total area =     113.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      205.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    113.700(Ac.)
Runoff from this stream =    158.956(CFS)
Time of concentration =   17.85 min.
Rainfall intensity =     1.588(In/Hr)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      206.000 to Point/Station      207.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   553.000(Ft.)
Top (of initial area) elevation =  1230.000(Ft.)
Bottom (of initial area) elevation =  1210.000(Ft.)
Difference in elevation =    20.000(Ft.)
Slope =    0.03617  s(percent)=       3.62
TC = k(0.474)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.514 min.
Rainfall intensity =      1.934(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.832
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.710
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.290
RI index for soil(AMC 2)  =  86.53
Pervious area fraction =  0.780; Impervious fraction =  0.220
Initial subarea runoff =      6.920(CFS)
Total initial stream area =        4.300(Ac.)
Pervious area fraction = 0.780


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Process from Point/Station      207.000 to Point/Station      208.000
**** IMPROVED CHANNEL TRAVEL TIME ****
______________________________________________________________________________
Upstream point elevation =  1210.000(Ft.)
Downstream point elevation =  1184.000(Ft.)
Channel length thru subarea  =  1809.000(Ft.)
Channel base width     =   10.000(Ft.)
Slope or 'Z' of left channel bank =  10.000
Slope or 'Z' of right channel bank =  10.000
Estimated mean flow rate at midpoint of channel =     10.703(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    1.500(Ft.)
Flow(q) thru subarea =     10.703(CFS)
Depth of flow =   0.330(Ft.), Average velocity =   2.442(Ft/s)
Channel flow top width =   16.593(Ft.)
Flow Velocity =    2.44(Ft/s)
Travel time  =   12.35 min.
Time of concentration =   23.86 min.

Sub-Channel No. 1 Critical depth =      0.297(Ft.)
  '     '       '     Critical flow top width =     15.938(Ft.)
  '     '       '     Critical flow velocity=    2.780(Ft/s)
  '     '       '     Critical flow area =      3.850(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.773
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.790
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.210
RI index for soil(AMC 2)  =  83.19
Pervious area fraction =  0.870; Impervious fraction =  0.130
Rainfall intensity =      1.394(In/Hr) for a    10.0 year storm
Subarea runoff =      7.499(CFS) for      6.960(Ac.)
Total runoff =     14.419(CFS)        Total area =      11.260(Ac.)
Depth of flow =   0.388(Ft.), Average velocity =   2.677(Ft/s)

Sub-Channel No. 1 Critical depth =      0.355(Ft.)
  '     '       '     Critical flow top width =     17.109(Ft.)
  '     '       '     Critical flow velocity=    2.993(Ft/s)
  '     '       '     Critical flow area =      4.818(Sq.Ft)
```

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Process from Point/Station      207.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
____________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     11.260(Ac.)
Runoff from this stream =     14.419(CFS)
Time of concentration =   23.86 min.
Rainfall intensity =     1.394(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      158.956     17.85                1.588
2       14.419     23.86                1.394
Largest stream flow has longer or shorter time of concentration
Qp =    158.956 + sum of
          Qa          Tb/Ta
          14.419 *    0.748 =     10.788
Qp =    169.744

Total of 2 streams to confluence:
Flow rates before confluence point:
     158.956      14.419
Area of streams before confluence:
      113.700       11.260
Results of confluence:
Total flow rate =    169.744(CFS)
Time of concentration =    17.854 min.
Effective stream area after confluence =    124.960(Ac.)


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Process from Point/Station      208.000 to Point/Station      209.000
**** IMPROVED CHANNEL TRAVEL TIME ****
____________________________________________________________________________
Upstream point elevation =  1184.000(Ft.)
Downstream point elevation =  1178.000(Ft.)
Channel length thru subarea  =   598.000(Ft.)
Channel base width     =   12.000(Ft.)
Slope or 'Z' of left channel bank =   4.000
Slope or 'Z' of right channel bank =   4.000
Estimated mean flow rate at midpoint of channel =    171.591(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =    171.591(CFS)
Depth of flow =   1.649(Ft.), Average velocity =   5.596(Ft/s)
Channel flow top width =   25.191(Ft.)
Flow Velocity =    5.60(Ft/s)
Travel time  =    1.78 min.
Time of concentration =   19.63 min.

Sub-Channel No. 1 Critical depth =      1.547(Ft.)
  '     '       '     Critical flow top width =     24.375(Ft.)
  '     '       '     Critical flow velocity=    6.099(Ft/s)
  '     '       '     Critical flow area =     28.134(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.797
Decimal fraction soil group A = 0.130
Decimal fraction soil group B = 0.870
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.97
Pervious area fraction =  0.850; Impervious fraction =  0.150
Rainfall intensity =      1.521(In/Hr) for a    10.0 year storm
```

```
Subarea runoff =      3.639(CFS) for      3.000(Ac.)
Total runoff =    173.383(CFS)        Total area =     127.960(Ac.)
Depth of flow =   1.658(Ft.), Average velocity =   5.613(Ft/s)

Sub-Channel No. 1 Critical depth =      1.563(Ft.)
  '     '       '     Critical flow top width =     24.500(Ft.)
  '     '       '     Critical flow velocity=    6.080(Ft/s)
  '     '       '     Critical flow area =     28.516(Sq.Ft)

End of computations, total study area =          127.96 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.975
Area averaged RI index number =  84.3
```

APPENDIX A.3: AREA "C"

100-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/17/11 File:ARCEX100.out

ALBERHILL EXISTING CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 100-YEAR STORM EVENT
FILENAME: ARCEX100

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.450(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 301.000 to Point/Station 302.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 924.000(Ft.)
Top (of initial area) elevation = 1189.000(Ft.)
Bottom (of initial area) elevation = 1180.000(Ft.)
Difference in elevation = 9.000(Ft.)
Slope = 0.00974 s(percent)= 0.97
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 18.612 min.
Rainfall intensity = 2.455(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.813
Decimal fraction soil group A = 0.780
Decimal fraction soil group B = 0.220
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 79.74
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 3.991(CFS)
Total initial stream area = 2.000(Ac.)
Pervious area fraction = 0.800
End of computations, total study area = 2.00 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number = 79.7

10-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/05/11 File:ARCEX10.out

ALBERHILL EXISTING CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARCEX10

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.920(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 301.000 to Point/Station 302.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 924.000(Ft.)
Top (of initial area) elevation = 1189.000(Ft.)
Bottom (of initial area) elevation = 1180.000(Ft.)
Difference in elevation = 9.000(Ft.)
Slope = 0.00974 s(percent)= 0.97
TC = k(-0.820)*[(length^3)/(elevation change)]^0.2
Warning: TC computed to be less than 5 min.; program is assuming the
time of concentration is 5 minutes.
Initial area time of concentration = 5.000 min.
Rainfall intensity = 2.815(In/Hr) for a 10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.780
Decimal fraction soil group C = 0.220
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 79.74
Pervious area fraction = 0.850; Impervious fraction = 0.150
Initial subarea runoff = 4.605(CFS)
Total initial stream area = 2.000(Ac.)
Pervious area fraction = 0.850
End of computations, total study area = 2.00 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.850
Area averaged RI index number = 79.7

APPENDIX B: POST-PROJECT CONDITION RATIONAL METHOD ANALYSIS

APPENDIX B.1: AREA "A"

100-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 11/19/11 File:ARAP100.out

ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 100-YEAR STORM EVENT
FILENAME: ARAP100

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.450(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 603.000(Ft.)
Top (of initial area) elevation = 2380.000(Ft.)
Bottom (of initial area) elevation = 2040.000(Ft.)
Difference in elevation = 340.000(Ft.)
Slope = 0.56385 s(percent)= 56.38
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.848 min.
Rainfall intensity = 3.622(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.841
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 84.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 23.757(CFS)
Total initial stream area = 7.800(Ac.)
Pervious area fraction = 1.000

++

Process from Point/Station 102.000 to Point/Station 103.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2040.000(Ft.)
End of natural channel elevation = 1828.000(Ft.)
Length of natural channel = 786.000(Ft.)

```
Estimated mean flow rate at midpoint of channel =     44.469(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  19.44(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2697
Corrected/adjusted channel slope =  0.2697
Travel time =    0.67 min.     TC =    8.52  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.839
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.490(In/Hr) for a   100.0 year storm
Subarea runoff =     39.817(CFS) for     13.600(Ac.)
Total runoff =     63.574(CFS)       Total area =      21.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      104.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1828.000(Ft.)
End of natural channel elevation =   1708.000(Ft.)
Length of natural channel  =   780.000(Ft.)
Estimated mean flow rate at midpoint of channel =    102.343(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  18.75(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1538
Corrected/adjusted channel slope =  0.1538
Travel time =    0.69 min.     TC =    9.22  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.369(In/Hr) for a   100.0 year storm
Subarea runoff =     73.591(CFS) for     26.100(Ac.)
Total runoff =    137.165(CFS)       Total area =      47.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      105.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1708.000(Ft.)
End of natural channel elevation =   1512.000(Ft.)
Length of natural channel  =  1206.000(Ft.)
Estimated mean flow rate at midpoint of channel =    214.555(CFS)
```

```
Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  24.16(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1625
Corrected/adjusted channel slope =  0.1625
Travel time =    0.83 min.     TC =   10.05  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.835
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.241(In/Hr) for a   100.0 year storm
Subarea runoff =    144.962(CFS) for     53.600(Ac.)
Total runoff =    282.128(CFS)       Total area =     101.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1512.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1483.000(Ft.)
Estimated mean flow rate at midpoint of channel =    324.126(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  23.57(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1194
Corrected/adjusted channel slope =  0.1194
Travel time =    1.05 min.     TC =   11.10  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.832
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.950
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.099(In/Hr) for a   100.0 year storm
Subarea runoff =     77.591(CFS) for     30.100(Ac.)
Total runoff =    359.719(CFS)       Total area =     131.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    131.200(Ac.)
Runoff from this stream =    359.719(CFS)
Time of concentration =   11.10 min.
Rainfall intensity =     3.099(In/Hr)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      107.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   823.000(Ft.)
Top (of initial area) elevation =  1988.000(Ft.)
Bottom (of initial area) elevation =  1580.000(Ft.)
Difference in elevation =   408.000(Ft.)
Slope =    0.49575  s(percent)=      49.57
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.119 min.
Rainfall intensity =      3.385(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     21.254(CFS)
Total initial stream area =        7.500(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1580.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1171.000(Ft.)
Estimated mean flow rate at midpoint of channel =     44.349(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  17.10(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2092
Corrected/adjusted channel slope =  0.2092
Travel time =    1.14 min.     TC =   10.26  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.833
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.030
Decimal fraction soil group C = 0.970
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.79
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.210(In/Hr) for a   100.0 year storm
Subarea runoff =     43.589(CFS) for     16.300(Ac.)
Total runoff =     64.842(CFS)        Total area =      23.800(Ac.)


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Process from Point/Station      107.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     23.800(Ac.)
Runoff from this stream =     64.842(CFS)
Time of concentration =   10.26 min.
Rainfall intensity =     3.210(In/Hr)
```

```
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      359.719     11.10                3.099
2       64.842     10.26                3.210
Largest stream flow has longer time of concentration
Qp =    359.719 + sum of
          Qb         Ia/Ib
          64.842 *    0.965 =     62.598
Qp =    422.317

Total of 2 streams to confluence:
Flow rates before confluence point:
     359.719      64.842
Area of streams before confluence:
      131.200       23.800
Results of confluence:
Total flow rate =    422.317(CFS)
Time of concentration =    11.096 min.
Effective stream area after confluence =    155.000(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      109.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1335.000(Ft.)
End of natural channel elevation =   1254.000(Ft.)
Length of natural channel  =  1202.000(Ft.)
Estimated mean flow rate at midpoint of channel =    469.044(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  19.92(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0674
Corrected/adjusted channel slope =  0.0674
Travel time =    1.01 min.     TC =   12.10  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.812
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.430
Decimal fraction soil group C = 0.570
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  80.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.980(In/Hr) for a   100.0 year storm
Subarea runoff =     83.046(CFS) for     34.300(Ac.)
Total runoff =    505.363(CFS)       Total area =     189.300(Ac.)


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Process from Point/Station      109.000 to Point/Station      111.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1254.000(Ft.)
Downstream point elevation =  1180.000(Ft.)
Channel length thru subarea  =   697.000(Ft.)
Channel base width     =    5.000(Ft.)
Slope or 'Z' of left channel bank =   0.000
Slope or 'Z' of right channel bank =   2.000
Manning's 'N'    = 0.015
```

```
Maximum depth of channel  =    3.000(Ft.)
Flow(q) thru subarea =    505.363(CFS)
Depth of flow =   1.976(Ft.), Average velocity =  36.652(Ft/s)
Channel flow top width =    8.953(Ft.)
Flow Velocity =   36.65(Ft/s)
Travel time  =    0.32 min.
Time of concentration =   12.42 min.

Sub-Channel No. 1 Critical depth =      4.875(Ft.)
  '     '       '     Critical flow top width =     11.000(Ft.)
  '     '       '     Critical flow velocity=   11.325(Ft/s)
  '     '       '     Critical flow area =     44.625(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    189.300(Ac.)
Runoff from this stream =    505.363(CFS)
Time of concentration =   12.42 min.
Rainfall intensity =     2.946(In/Hr)


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Process from Point/Station      110.000 to Point/Station      111.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   871.000(Ft.)
Top (of initial area) elevation =  1397.000(Ft.)
Bottom (of initial area) elevation =  1180.000(Ft.)
Difference in elevation =   217.000(Ft.)
Slope =    0.24914  s(percent)=      24.91
TC = k(0.545)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.802 min.
Rainfall intensity =      3.137(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.831
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.950
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      9.379(CFS)
Total initial stream area =        3.600(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station      110.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.600(Ac.)
Runoff from this stream =      9.379(CFS)
Time of concentration =   10.80 min.
Rainfall intensity =     3.137(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1      505.363     12.42                2.946
2        9.379     10.80                3.137
Largest stream flow has longer time of concentration
Qp =    505.363 + sum of
          Qb         Ia/Ib
```

```
          9.379 *    0.939 =      8.809
Qp =    514.171

Total of 2 streams to confluence:
Flow rates before confluence point:
     505.363       9.379
Area of streams before confluence:
      189.300        3.600
Results of confluence:
Total flow rate =    514.171(CFS)
Time of concentration =    12.419 min.
Effective stream area after confluence =    192.900(Ac.)


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Process from Point/Station      110.000 to Point/Station      111.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.832
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.920
Decimal fraction soil group C = 0.080
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.77
Pervious area fraction =  1.000; Impervious fraction =  0.000
Time of concentration =    12.42 min.
Rainfall intensity =      2.946(In/Hr) for a   100.0 year storm
Subarea runoff =      9.317(CFS) for      3.800(Ac.)
Total runoff =    523.488(CFS)        Total area =     196.700(Ac.)


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Process from Point/Station      111.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1178.200(Ft.)
Downstream point/station elevation =  1177.160(Ft.)
Pipe length  =   157.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   523.488(CFS)
Nearest computed pipe diameter  =     84.00(In.)
Calculated individual pipe flow  =   523.488(CFS)
Normal flow depth in pipe =   69.38(In.)
Flow top width inside pipe =   63.71(In.)
Critical Depth =   71.47(In.)
Pipe flow velocity =     15.40(Ft/s)
Travel time through pipe =    0.17 min.
Time of concentration (TC) =    12.59 min.


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Process from Point/Station      111.000 to Point/Station      121.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =    196.700(Ac.)
Runoff from this stream =    523.488(CFS)
Time of concentration =   12.59 min.
Rainfall intensity =     2.928(In/Hr)
Program is now starting with Main Stream No. 2


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Process from Point/Station      112.000 to Point/Station      113.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   920.000(Ft.)
Top (of initial area) elevation =  1194.000(Ft.)
Bottom (of initial area) elevation =  1185.000(Ft.)
Difference in elevation =     9.000(Ft.)
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```
Slope =    0.00978  s(percent)=       0.98
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   18.564 min.
Rainfall intensity =      2.458(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.838
Decimal fraction soil group A = 0.100
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  85.16
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      1.854(CFS)
Total initial stream area =        0.900(Ac.)
Pervious area fraction = 0.800


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      113.000 to Point/Station      114.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1185.000(Ft.)
Downstream point elevation =  1182.000(Ft.)
Channel length thru subarea  =   296.000(Ft.)
Channel base width     =    1.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =     12.138(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =     12.138(CFS)
Depth of flow =   0.969(Ft.), Average velocity =   6.365(Ft/s)
Channel flow top width =    2.937(Ft.)
Flow Velocity =    6.37(Ft/s)
Travel time  =    0.78 min.
Time of concentration =   19.34 min.

Sub-Channel No. 1 Critical depth =      1.148(Ft.)
  '     '       '     Critical flow top width =      3.297(Ft.)
  '     '       '     Critical flow velocity=    4.919(Ft/s)
  '     '       '     Critical flow area =      2.467(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.841
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Rainfall intensity =      2.413(In/Hr) for a   100.0 year storm
Subarea runoff =     20.490(CFS) for     10.100(Ac.)
Total runoff =     22.344(CFS)       Total area =      11.000(Ac.)
Depth of flow =   1.306(Ft.), Average velocity =   7.419(Ft/s)

Sub-Channel No. 1 Critical depth =      1.563(Ft.)
  '     '       '     Critical flow top width =      4.125(Ft.)
  '     '       '     Critical flow velocity=    5.581(Ft/s)
  '     '       '     Critical flow area =      4.004(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      114.000 to Point/Station      115.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1182.000(Ft.)
Downstream point/station elevation =  1181.000(Ft.)
Pipe length  =    70.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    22.344(CFS)
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```
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    22.344(CFS)
Normal flow depth in pipe =   16.64(In.)
Flow top width inside pipe =   22.13(In.)
Critical Depth =   20.23(In.)
Pipe flow velocity =      9.62(Ft/s)
Travel time through pipe =    0.12 min.
Time of concentration (TC) =    19.46 min.


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Process from Point/Station      115.000 to Point/Station      120.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1181.000(Ft.)
Downstream point elevation =  1179.000(Ft.)
Channel length thru subarea  =   124.000(Ft.)
Channel base width     =    1.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =     26.407(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =     26.407(CFS)
Depth of flow =   1.266(Ft.), Average velocity =   9.208(Ft/s)
Channel flow top width =    3.531(Ft.)
Flow Velocity =    9.21(Ft/s)
Travel time  =    0.22 min.
Time of concentration =   19.68 min.

Sub-Channel No. 1 Critical depth =      1.688(Ft.)
  '     '       '     Critical flow top width =      4.375(Ft.)
  '     '       '     Critical flow velocity=    5.823(Ft/s)
  '     '       '     Critical flow area =      4.535(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.840
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Rainfall intensity =      2.394(In/Hr) for a   100.0 year storm
Subarea runoff =      8.046(CFS) for      4.000(Ac.)
Total runoff =     30.390(CFS)        Total area =      15.000(Ac.)
Depth of flow =   1.354(Ft.), Average velocity =   9.536(Ft/s)

Sub-Channel No. 1 Critical depth =      1.813(Ft.)
  '     '       '     Critical flow top width =      4.625(Ft.)
  '     '       '     Critical flow velocity=    5.962(Ft/s)
  '     '       '     Critical flow area =      5.098(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      115.000 to Point/Station      120.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 2 in normal stream number 1
Stream flow area =     15.000(Ac.)
Runoff from this stream =     30.390(CFS)
Time of concentration =   19.68 min.
Rainfall intensity =     2.394(In/Hr)


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Process from Point/Station      116.000 to Point/Station      117.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
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Initial area flow distance =   643.000(Ft.)
Top (of initial area) elevation =  1201.000(Ft.)
Bottom (of initial area) elevation =  1193.000(Ft.)
Difference in elevation =     8.000(Ft.)
Slope =    0.01244  s(percent)=       1.24
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.330 min.
Rainfall intensity =      2.679(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.842
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.850
Decimal fraction soil group C = 0.150
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  85.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      6.542(CFS)
Total initial stream area =        2.900(Ac.)
Pervious area fraction = 0.800


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Process from Point/Station      117.000 to Point/Station      120.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1193.000(Ft.)
Downstream point elevation =  1179.000(Ft.)
Channel length thru subarea  =  1476.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =     13.092(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =     13.092(CFS)
Depth of flow =   1.454(Ft.), Average velocity =   6.192(Ft/s)
Channel flow top width =    2.908(Ft.)
Flow Velocity =    6.19(Ft/s)
Travel time  =    3.97 min.
Time of concentration =   19.30 min.

Sub-Channel No. 1 Critical depth =      1.609(Ft.)
  '     '       '     Critical flow top width =      3.219(Ft.)
  '     '       '     Critical flow velocity=    5.055(Ft/s)
  '     '       '     Critical flow area =      2.590(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.130
Decimal fraction soil group C = 0.870
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.18
Pervious area fraction =  0.970; Impervious fraction =  0.030
Rainfall intensity =      2.415(In/Hr) for a   100.0 year storm
Subarea runoff =     13.040(CFS) for      6.600(Ac.)
Total runoff =     19.581(CFS)       Total area =       9.500(Ac.)
Depth of flow =   1.691(Ft.), Average velocity =   6.847(Ft/s)

Sub-Channel No. 1 Critical depth =      1.891(Ft.)
  '     '       '     Critical flow top width =      3.781(Ft.)
  '     '       '     Critical flow velocity=    5.478(Ft/s)
  '     '       '     Critical flow area =      3.574(Sq.Ft)



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Process from Point/Station      117.000 to Point/Station      120.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
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Along Main Stream number: 2 in normal stream number 2
Stream flow area =      9.500(Ac.)
Runoff from this stream =     19.581(CFS)
Time of concentration =   19.30 min.
Rainfall intensity =     2.415(In/Hr)


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Process from Point/Station      118.000 to Point/Station      119.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   534.000(Ft.)
Top (of initial area) elevation =  1195.000(Ft.)
Bottom (of initial area) elevation =  1191.000(Ft.)
Difference in elevation =     4.000(Ft.)
Slope =    0.00749  s(percent)=       0.75
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.753 min.
Rainfall intensity =      2.647(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.845
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      3.133(CFS)
Total initial stream area =        1.400(Ac.)
Pervious area fraction = 0.800


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Process from Point/Station      119.000 to Point/Station      120.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1191.000(Ft.)
Downstream point elevation =  1179.000(Ft.)
Channel length thru subarea  =  1069.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =  50.000
Slope or 'Z' of right channel bank =  50.000
Estimated mean flow rate at midpoint of channel =     10.497(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     10.497(CFS)
Depth of flow =   0.274(Ft.), Average velocity =   2.791(Ft/s)
Channel flow top width =   27.427(Ft.)
Flow Velocity =    2.79(Ft/s)
Travel time  =    6.38 min.
Time of concentration =   22.14 min.

Sub-Channel No. 1 Critical depth =      0.307(Ft.)
  '     '       '     Critical flow top width =     30.664(Ft.)
  '     '       '     Critical flow velocity=    2.233(Ft/s)
  '     '       '     Critical flow area =      4.701(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Rainfall intensity =      2.271(In/Hr) for a   100.0 year storm
Subarea runoff =     14.640(CFS) for      7.700(Ac.)
Total runoff =     17.773(CFS)       Total area =       9.100(Ac.)
Depth of flow =   0.334(Ft.), Average velocity =   3.184(Ft/s)
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Sub-Channel No. 1 Critical depth =      0.379(Ft.)
  '     '       '     Critical flow top width =     37.891(Ft.)
  '     '       '     Critical flow velocity=    2.476(Ft/s)
  '     '       '     Critical flow area =      7.178(Sq.Ft)


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Process from Point/Station      119.000 to Point/Station      120.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 2 in normal stream number 3
Stream flow area =      9.100(Ac.)
Runoff from this stream =     17.773(CFS)
Time of concentration =   22.14 min.
Rainfall intensity =     2.271(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       30.390     19.68                2.394
2       19.581     19.30                2.415
3       17.773     22.14                2.271
Largest stream flow has longer or shorter time of concentration
Qp =     30.390 + sum of
          Qb          Ia/Ib
          19.581 *    0.991 =     19.410
          Qa          Tb/Ta
          17.773 *    0.889 =     15.804
Qp =     65.605

Total of 3 streams to confluence:
Flow rates before confluence point:
      30.390      19.581      17.773
Area of streams before confluence:
       15.000        9.500        9.100
Results of confluence:
Total flow rate =     65.605(CFS)
Time of concentration =    19.684 min.
Effective stream area after confluence =     33.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      120.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1179.000(Ft.)
Downstream point/station elevation =  1177.160(Ft.)
Pipe length  =    63.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    65.605(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    65.605(CFS)
Normal flow depth in pipe =   23.02(In.)
Flow top width inside pipe =   25.36(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.23(Ft/s)
Travel time through pipe =    0.06 min.
Time of concentration (TC) =    19.75 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      120.000 to Point/Station      121.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     33.600(Ac.)
Runoff from this stream =     65.605(CFS)
Time of concentration =   19.75 min.
```

```
Rainfall intensity =     2.391(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      523.488     12.59               2.928
2       65.605     19.75               2.391
Largest stream flow has longer or shorter time of concentration
Qp =    523.488 + sum of
          Qa          Tb/Ta
          65.605 *    0.637 =     41.818
Qp =    565.307

Total of 2 main streams to confluence:
Flow rates before confluence point:
     523.488      65.605
Area of streams before confluence:
      196.700       33.600


Results of confluence:
Total flow rate =    565.307(CFS)
Time of concentration =    12.589 min.
Effective stream area after confluence  =    230.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      121.000 to Point/Station      122.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1177.160(Ft.)
Downstream point/station elevation =  1175.900(Ft.)
Pipe length  =   253.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   565.307(CFS)
Nearest computed pipe diameter  =     90.00(In.)
Calculated individual pipe flow  =   565.307(CFS)
Normal flow depth in pipe =   77.81(In.)
Flow top width inside pipe =   61.59(In.)
Critical Depth =   73.48(In.)
Pipe flow velocity =     13.92(Ft/s)
Travel time through pipe =    0.30 min.
Time of concentration (TC) =    12.89 min.
End of computations, total study area =          230.30 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.976
Area averaged RI index number =  83.7
```

10-YEAR

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
       Rational Hydrology Study        Date: 11/19/11  File:ARAP10.out
------------------------------------------------------------------------
ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARAP10

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6045

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.550(In.)
100 year, 1 hour precipitation =  1.450(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.920(In/Hr)
Slope of intensity duration curve = 0.4500




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      101.000 to Point/Station      102.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   603.000(Ft.)
Top (of initial area) elevation =  2380.000(Ft.)
Bottom (of initial area) elevation =  2040.000(Ft.)
Difference in elevation =   340.000(Ft.)
Slope =    0.56385  s(percent)=      56.38
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.848 min.
Rainfall intensity =      2.298(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.810
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     14.530(CFS)
Total initial stream area =        7.800(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2040.000(Ft.)
End of natural channel elevation =   1828.000(Ft.)
Length of natural channel  =   786.000(Ft.)
```

```
Estimated mean flow rate at midpoint of channel =     27.197(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  16.92(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2697
Corrected/adjusted channel slope =  0.2697
Travel time =    0.77 min.     TC =    8.62  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.807
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.203(In/Hr) for a    10.0 year storm
Subarea runoff =     24.180(CFS) for     13.600(Ac.)
Total runoff =     38.710(CFS)        Total area =      21.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      104.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1828.000(Ft.)
End of natural channel elevation =   1708.000(Ft.)
Length of natural channel  =   780.000(Ft.)
Estimated mean flow rate at midpoint of channel =     62.316(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  16.18(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1538
Corrected/adjusted channel slope =  0.1538
Travel time =    0.80 min.     TC =    9.43  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.804
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.117(In/Hr) for a    10.0 year storm
Subarea runoff =     44.394(CFS) for     26.100(Ac.)
Total runoff =     83.104(CFS)        Total area =      47.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      105.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1708.000(Ft.)
End of natural channel elevation =   1512.000(Ft.)
Length of natural channel  =  1206.000(Ft.)
Estimated mean flow rate at midpoint of channel =    129.992(CFS)
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Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  20.71(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1625
Corrected/adjusted channel slope =  0.1625
Travel time =    0.97 min.     TC =   10.40  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.800
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.025(In/Hr) for a    10.0 year storm
Subarea runoff =     86.816(CFS) for     53.600(Ac.)
Total runoff =    169.920(CFS)       Total area =     101.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1512.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1483.000(Ft.)
Estimated mean flow rate at midpoint of channel =    195.215(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  20.11(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1194
Corrected/adjusted channel slope =  0.1194
Travel time =    1.23 min.     TC =   11.62  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.795
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.950
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.926(In/Hr) for a    10.0 year storm
Subarea runoff =     46.097(CFS) for     30.100(Ac.)
Total runoff =    216.018(CFS)       Total area =     131.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    131.200(Ac.)
Runoff from this stream =    216.018(CFS)
Time of concentration =   11.62 min.
Rainfall intensity =     1.926(In/Hr)
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Process from Point/Station      106.000 to Point/Station      107.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   823.000(Ft.)
Top (of initial area) elevation =  1988.000(Ft.)
Bottom (of initial area) elevation =  1580.000(Ft.)
Difference in elevation =   408.000(Ft.)
Slope =    0.49575  s(percent)=      49.57
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.119 min.
Rainfall intensity =      2.148(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.805
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     12.968(CFS)
Total initial stream area =        7.500(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station      107.000 to Point/Station      108.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1580.000(Ft.)
End of natural channel elevation =   1335.000(Ft.)
Length of natural channel  =  1171.000(Ft.)
Estimated mean flow rate at midpoint of channel =     27.060(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  14.89(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.2092
Corrected/adjusted channel slope =  0.2092
Travel time =    1.31 min.     TC =   10.43  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.798
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.030
Decimal fraction soil group C = 0.970
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.79
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.022(In/Hr) for a    10.0 year storm
Subarea runoff =     26.311(CFS) for     16.300(Ac.)
Total runoff =     39.279(CFS)        Total area =      23.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     23.800(Ac.)
Runoff from this stream =     39.279(CFS)
Time of concentration =   10.43 min.
Rainfall intensity =     2.022(In/Hr)
```

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Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      216.018     11.62                 1.926
2       39.279     10.43                 2.022
Largest stream flow has longer time of concentration
Qp =    216.018 + sum of
          Qb         Ia/Ib
          39.279 *    0.952 =     37.409
Qp =    253.427

Total of 2 streams to confluence:
Flow rates before confluence point:
     216.018      39.279
Area of streams before confluence:
      131.200       23.800
Results of confluence:
Total flow rate =    253.427(CFS)
Time of concentration =    11.625 min.
Effective stream area after confluence =    155.000(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      109.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1335.000(Ft.)
End of natural channel elevation =   1254.000(Ft.)
Length of natural channel  =  1202.000(Ft.)
Estimated mean flow rate at midpoint of channel =    281.467(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  16.94(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0674
Corrected/adjusted channel slope =  0.0674
Travel time =    1.18 min.     TC =   12.81  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.766
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.430
Decimal fraction soil group C = 0.570
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  80.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.844(In/Hr) for a    10.0 year storm
Subarea runoff =     48.472(CFS) for     34.300(Ac.)
Total runoff =    301.899(CFS)       Total area =     189.300(Ac.)


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Process from Point/Station      109.000 to Point/Station      111.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1254.000(Ft.)
Downstream point elevation =  1180.000(Ft.)
Channel length thru subarea  =   697.000(Ft.)
Channel base width     =    5.000(Ft.)
Slope or 'Z' of left channel bank =   0.000
Slope or 'Z' of right channel bank =   2.000
Manning's 'N'    = 0.015
```

```
Maximum depth of channel  =    3.000(Ft.)
Flow(q) thru subarea =    301.899(CFS)
Depth of flow =   1.470(Ft.), Average velocity =  31.737(Ft/s)
Channel flow top width =    7.940(Ft.)
Flow Velocity =   31.74(Ft/s)
Travel time  =    0.37 min.
Time of concentration =   13.17 min.

Sub-Channel No. 1 Critical depth =      3.688(Ft.)
  '     '       '     Critical flow top width =     11.000(Ft.)
  '     '       '     Critical flow velocity=    9.565(Ft/s)
  '     '       '     Critical flow area =     31.563(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    189.300(Ac.)
Runoff from this stream =    301.899(CFS)
Time of concentration =   13.17 min.
Rainfall intensity =     1.821(In/Hr)


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Process from Point/Station      110.000 to Point/Station      111.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   871.000(Ft.)
Top (of initial area) elevation =  1397.000(Ft.)
Bottom (of initial area) elevation =  1180.000(Ft.)
Difference in elevation =   217.000(Ft.)
Slope =    0.24914  s(percent)=      24.91
TC = k(0.545)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.802 min.
Rainfall intensity =      1.991(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.795
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.950
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      5.700(CFS)
Total initial stream area =        3.600(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station      110.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.600(Ac.)
Runoff from this stream =      5.700(CFS)
Time of concentration =   10.80 min.
Rainfall intensity =     1.991(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      301.899     13.17                1.821
2        5.700     10.80                1.991
Largest stream flow has longer time of concentration
Qp =    301.899 + sum of
          Qb         Ia/Ib
```

```
          5.700 *    0.915 =      5.213
Qp =    307.112

Total of 2 streams to confluence:
Flow rates before confluence point:
     301.899       5.700
Area of streams before confluence:
      189.300        3.600
Results of confluence:
Total flow rate =    307.112(CFS)
Time of concentration =    13.173 min.
Effective stream area after confluence =    192.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      110.000 to Point/Station      111.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.795
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.920
Decimal fraction soil group C = 0.080
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.77
Pervious area fraction =  1.000; Impervious fraction =  0.000
Time of concentration =    13.17 min.
Rainfall intensity =      1.821(In/Hr) for a    10.0 year storm
Subarea runoff =      5.502(CFS) for      3.800(Ac.)
Total runoff =    312.614(CFS)        Total area =     196.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      111.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1178.200(Ft.)
Downstream point/station elevation =  1177.160(Ft.)
Pipe length  =   157.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   312.614(CFS)
Nearest computed pipe diameter  =     69.00(In.)
Calculated individual pipe flow  =   312.614(CFS)
Normal flow depth in pipe =   57.56(In.)
Flow top width inside pipe =   51.32(In.)
Critical Depth =   58.11(In.)
Pipe flow velocity =     13.50(Ft/s)
Travel time through pipe =    0.19 min.
Time of concentration (TC) =    13.37 min.


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Process from Point/Station      111.000 to Point/Station      121.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =    196.700(Ac.)
Runoff from this stream =    312.614(CFS)
Time of concentration =   13.37 min.
Rainfall intensity =     1.809(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      112.000 to Point/Station      113.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   920.000(Ft.)
Top (of initial area) elevation =  1194.000(Ft.)
Bottom (of initial area) elevation =  1185.000(Ft.)
Difference in elevation =     9.000(Ft.)
```

```
Slope =    0.00978  s(percent)=       0.98
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   18.564 min.
Rainfall intensity =      1.560(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.807
Decimal fraction soil group A = 0.100
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  85.16
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      1.133(CFS)
Total initial stream area =        0.900(Ac.)
Pervious area fraction = 0.800


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      113.000 to Point/Station      114.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1185.000(Ft.)
Downstream point elevation =  1182.000(Ft.)
Channel length thru subarea  =   296.000(Ft.)
Channel base width     =    1.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =      7.412(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =      7.412(CFS)
Depth of flow =   0.753(Ft.), Average velocity =   5.611(Ft/s)
Channel flow top width =    2.507(Ft.)
Flow Velocity =    5.61(Ft/s)
Travel time  =    0.88 min.
Time of concentration =   19.44 min.

Sub-Channel No. 1 Critical depth =      0.891(Ft.)
  '     '       '     Critical flow top width =      2.781(Ft.)
  '     '       '     Critical flow velocity=    4.402(Ft/s)
  '     '       '     Critical flow area =      1.684(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.810
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Rainfall intensity =      1.528(In/Hr) for a    10.0 year storm
Subarea runoff =     12.508(CFS) for     10.100(Ac.)
Total runoff =     13.641(CFS)       Total area =      11.000(Ac.)
Depth of flow =   1.027(Ft.), Average velocity =   6.556(Ft/s)

Sub-Channel No. 1 Critical depth =      1.219(Ft.)
  '     '       '     Critical flow top width =      3.438(Ft.)
  '     '       '     Critical flow velocity=    5.044(Ft/s)
  '     '       '     Critical flow area =      2.704(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      114.000 to Point/Station      115.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1182.000(Ft.)
Downstream point/station elevation =  1181.000(Ft.)
Pipe length  =    70.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.641(CFS)
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```
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    13.641(CFS)
Normal flow depth in pipe =   13.20(In.)
Flow top width inside pipe =   20.30(In.)
Critical Depth =   16.49(In.)
Pipe flow velocity =      8.57(Ft/s)
Travel time through pipe =    0.14 min.
Time of concentration (TC) =    19.58 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      115.000 to Point/Station      120.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1181.000(Ft.)
Downstream point elevation =  1179.000(Ft.)
Channel length thru subarea  =   124.000(Ft.)
Channel base width     =    1.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =     16.121(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =     16.121(CFS)
Depth of flow =   0.994(Ft.), Average velocity =   8.135(Ft/s)
Channel flow top width =    2.988(Ft.)
Flow Velocity =    8.14(Ft/s)
Travel time  =    0.25 min.
Time of concentration =   19.83 min.

Sub-Channel No. 1 Critical depth =      1.328(Ft.)
  '     '       '     Critical flow top width =      3.656(Ft.)
  '     '       '     Critical flow velocity=    5.214(Ft/s)
  '     '       '     Critical flow area =      3.092(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.810
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Rainfall intensity =      1.514(In/Hr) for a    10.0 year storm
Subarea runoff =      4.905(CFS) for      4.000(Ac.)
Total runoff =     18.546(CFS)        Total area =      15.000(Ac.)
Depth of flow =   1.065(Ft.), Average velocity =   8.428(Ft/s)

Sub-Channel No. 1 Critical depth =      1.422(Ft.)
  '     '       '     Critical flow top width =      3.844(Ft.)
  '     '       '     Critical flow velocity=    5.386(Ft/s)
  '     '       '     Critical flow area =      3.444(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      115.000 to Point/Station      120.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 2 in normal stream number 1
Stream flow area =     15.000(Ac.)
Runoff from this stream =     18.546(CFS)
Time of concentration =   19.83 min.
Rainfall intensity =     1.514(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      116.000 to Point/Station      117.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
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Initial area flow distance =   643.000(Ft.)
Top (of initial area) elevation =  1201.000(Ft.)
Bottom (of initial area) elevation =  1193.000(Ft.)
Difference in elevation =     8.000(Ft.)
Slope =    0.01244  s(percent)=       1.24
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.330 min.
Rainfall intensity =      1.701(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.812
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.850
Decimal fraction soil group C = 0.150
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  85.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      4.007(CFS)
Total initial stream area =        2.900(Ac.)
Pervious area fraction = 0.800


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      117.000 to Point/Station      120.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1193.000(Ft.)
Downstream point elevation =  1179.000(Ft.)
Channel length thru subarea  =  1476.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =      7.930(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.000(Ft.)
Flow(q) thru subarea =      7.930(CFS)
Depth of flow =   1.205(Ft.), Average velocity =   5.462(Ft/s)
Channel flow top width =    2.410(Ft.)
Flow Velocity =    5.46(Ft/s)
Travel time  =    4.50 min.
Time of concentration =   19.83 min.

Sub-Channel No. 1 Critical depth =      1.313(Ft.)
  '     '       '     Critical flow top width =      2.625(Ft.)
  '     '       '     Critical flow velocity=    4.603(Ft/s)
  '     '       '     Critical flow area =      1.723(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.776
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.130
Decimal fraction soil group C = 0.870
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.18
Pervious area fraction =  0.970; Impervious fraction =  0.030
Rainfall intensity =      1.514(In/Hr) for a    10.0 year storm
Subarea runoff =      7.757(CFS) for      6.600(Ac.)
Total runoff =     11.764(CFS)        Total area =       9.500(Ac.)
Depth of flow =   1.397(Ft.), Average velocity =   6.028(Ft/s)

Sub-Channel No. 1 Critical depth =      1.539(Ft.)
  '     '       '     Critical flow top width =      3.078(Ft.)
  '     '       '     Critical flow velocity=    4.966(Ft/s)
  '     '       '     Critical flow area =      2.369(Sq.Ft)



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Process from Point/Station      117.000 to Point/Station      120.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
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Along Main Stream number: 2 in normal stream number 2
Stream flow area =      9.500(Ac.)
Runoff from this stream =     11.764(CFS)
Time of concentration =   19.83 min.
Rainfall intensity =     1.514(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      118.000 to Point/Station      119.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   534.000(Ft.)
Top (of initial area) elevation =  1195.000(Ft.)
Bottom (of initial area) elevation =  1191.000(Ft.)
Difference in elevation =     4.000(Ft.)
Slope =    0.00749  s(percent)=       0.75
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.753 min.
Rainfall intensity =      1.680(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      1.923(CFS)
Total initial stream area =        1.400(Ac.)
Pervious area fraction = 0.800


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      119.000 to Point/Station      120.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1191.000(Ft.)
Downstream point elevation =  1179.000(Ft.)
Channel length thru subarea  =  1069.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =  50.000
Slope or 'Z' of right channel bank =  50.000
Estimated mean flow rate at midpoint of channel =      6.342(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =      6.342(CFS)
Depth of flow =   0.227(Ft.), Average velocity =   2.460(Ft/s)
Channel flow top width =   22.705(Ft.)
Flow Velocity =    2.46(Ft/s)
Travel time  =    7.24 min.
Time of concentration =   22.99 min.

Sub-Channel No. 1 Critical depth =      0.252(Ft.)
  '     '       '     Critical flow top width =     25.195(Ft.)
  '     '       '     Critical flow velocity=    1.998(Ft/s)
  '     '       '     Critical flow area =      3.174(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.804
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Rainfall intensity =      1.417(In/Hr) for a    10.0 year storm
Subarea runoff =      8.776(CFS) for      7.700(Ac.)
Total runoff =     10.699(CFS)       Total area =       9.100(Ac.)
Depth of flow =   0.276(Ft.), Average velocity =   2.804(Ft/s)
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Sub-Channel No. 1 Critical depth =      0.309(Ft.)
  '     '       '     Critical flow top width =     30.859(Ft.)
  '     '       '     Critical flow velocity=    2.247(Ft/s)
  '     '       '     Critical flow area =      4.762(Sq.Ft)


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Process from Point/Station      119.000 to Point/Station      120.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 2 in normal stream number 3
Stream flow area =      9.100(Ac.)
Runoff from this stream =     10.699(CFS)
Time of concentration =   22.99 min.
Rainfall intensity =     1.417(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       18.546     19.83                1.514
2       11.764     19.83                1.514
3       10.699     22.99                1.417
Largest stream flow has longer or shorter time of concentration
Qp =     18.546 + sum of
          Qa          Tb/Ta
          11.764 *    1.000 =     11.763
          Qa          Tb/Ta
          10.699 *    0.863 =      9.228
Qp =     39.538

Total of 3 streams to confluence:
Flow rates before confluence point:
      18.546      11.764      10.699
Area of streams before confluence:
       15.000        9.500        9.100
Results of confluence:
Total flow rate =     39.538(CFS)
Time of concentration =    19.833 min.
Effective stream area after confluence =     33.600(Ac.)


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Process from Point/Station      120.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1179.000(Ft.)
Downstream point/station elevation =  1177.160(Ft.)
Pipe length  =    63.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    39.538(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    39.538(CFS)
Normal flow depth in pipe =   20.20(In.)
Flow top width inside pipe =   17.52(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.01(Ft/s)
Travel time through pipe =    0.07 min.
Time of concentration (TC) =    19.91 min.


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Process from Point/Station      120.000 to Point/Station      121.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     33.600(Ac.)
Runoff from this stream =     39.538(CFS)
Time of concentration =   19.91 min.
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Rainfall intensity =     1.512(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      312.614     13.37               1.809
2       39.538     19.91               1.512
Largest stream flow has longer or shorter time of concentration
Qp =    312.614 + sum of
          Qa          Tb/Ta
          39.538 *    0.671 =     26.547
Qp =    339.161

Total of 2 main streams to confluence:
Flow rates before confluence point:
     312.614      39.538
Area of streams before confluence:
      196.700       33.600


Results of confluence:
Total flow rate =    339.161(CFS)
Time of concentration =    13.367 min.
Effective stream area after confluence  =    230.300(Ac.)


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Process from Point/Station      121.000 to Point/Station      122.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1177.160(Ft.)
Downstream point/station elevation =  1175.900(Ft.)
Pipe length  =   253.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   339.161(CFS)
Nearest computed pipe diameter  =     75.00(In.)
Calculated individual pipe flow  =   339.161(CFS)
Normal flow depth in pipe =   62.81(In.)
Flow top width inside pipe =   55.34(In.)
Critical Depth =   59.71(In.)
Pipe flow velocity =     12.37(Ft/s)
Travel time through pipe =    0.34 min.
Time of concentration (TC) =    13.71 min.
End of computations, total study area =          230.30 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.976
Area averaged RI index number =  83.7
```

APPENDIX B.2: AREA "B"

100-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 11/19/11 File:ARBP100.out

ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 100-YEAR STORM EVENT
FILENAME: ARBP100

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.450(In/Hr)
Slope of intensity duration curve = 0.4500

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Process from Point/Station 201.000 to Point/Station 202.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 765.000(Ft.)
Top (of initial area) elevation = 1844.000(Ft.)
Bottom (of initial area) elevation = 1556.000(Ft.)
Difference in elevation = 288.000(Ft.)
Slope = 0.37647 s(percent)= 37.65
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.358 min.
Rainfall intensity = 3.346(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 84.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 19.872(CFS)
Total initial stream area = 7.100(Ac.)
Pervious area fraction = 1.000

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Process from Point/Station 202.000 to Point/Station 203.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 1556.000(Ft.)
End of natural channel elevation = 1440.000(Ft.)
Length of natural channel = 851.000(Ft.)

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Estimated mean flow rate at midpoint of channel =     38.064(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.22(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1363
Corrected/adjusted channel slope =  0.1363
Travel time =    1.07 min.     TC =   10.43  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.834
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.186(In/Hr) for a   100.0 year storm
Subarea runoff =     34.528(CFS) for     13.000(Ac.)
Total runoff =     54.400(CFS)       Total area =      20.100(Ac.)


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Process from Point/Station      203.000 to Point/Station      204.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1440.000(Ft.)
End of natural channel elevation =   1302.000(Ft.)
Length of natural channel  =  1459.000(Ft.)
Estimated mean flow rate at midpoint of channel =     83.765(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.85(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0946
Corrected/adjusted channel slope =  0.0946
Travel time =    1.76 min.     TC =   12.19  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.829
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.971(In/Hr) for a   100.0 year storm
Subarea runoff =     53.451(CFS) for     21.700(Ac.)
Total runoff =    107.851(CFS)       Total area =      41.800(Ac.)


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Process from Point/Station      204.000 to Point/Station      205.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1302.000(Ft.)
End of natural channel elevation =   1217.000(Ft.)
Length of natural channel  =  1511.000(Ft.)
Estimated mean flow rate at midpoint of channel =    161.776(CFS)
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Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.03(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0563
Corrected/adjusted channel slope =  0.0563
Travel time =    1.93 min.     TC =   14.12  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.826
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.020
Decimal fraction soil group C = 0.860
Decimal fraction soil group D = 0.120
RI index for soil(AMC 2)  =  84.31
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.780(In/Hr) for a   100.0 year storm
Subarea runoff =     96.029(CFS) for     41.800(Ac.)
Total runoff =    203.880(CFS)       Total area =      83.600(Ac.)


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Process from Point/Station      205.000 to Point/Station      206.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1217.000(Ft.)
Downstream point elevation =  1196.000(Ft.)
Channel length thru subarea  =   504.000(Ft.)
Channel base width     =   20.000(Ft.)
Slope or 'Z' of left channel bank =   4.000
Slope or 'Z' of right channel bank =   4.000
Estimated mean flow rate at midpoint of channel =    214.347(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    5.000(Ft.)
Flow(q) thru subarea =    214.347(CFS)
Depth of flow =   0.991(Ft.), Average velocity =   9.024(Ft/s)
Channel flow top width =   27.930(Ft.)
Flow Velocity =    9.02(Ft/s)
Travel time  =    0.93 min.
Time of concentration =   15.05 min.

Sub-Channel No. 1 Critical depth =      1.391(Ft.)
  '     '       '     Critical flow top width =     31.125(Ft.)
  '     '       '     Critical flow velocity=    6.030(Ft/s)
  '     '       '     Critical flow area =     35.548(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.822
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.340
Decimal fraction soil group C = 0.240
Decimal fraction soil group D = 0.420
RI index for soil(AMC 2)  =  83.83
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.702(In/Hr) for a   100.0 year storm
Subarea runoff =     20.869(CFS) for      9.400(Ac.)
Total runoff =    224.750(CFS)       Total area =      93.000(Ac.)
Depth of flow =   1.018(Ft.), Average velocity =   9.167(Ft/s)

Sub-Channel No. 1 Critical depth =      1.422(Ft.)
  '     '       '     Critical flow top width =     31.375(Ft.)
  '     '       '     Critical flow velocity=    6.153(Ft/s)
  '     '       '     Critical flow area =     36.524(Sq.Ft)
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Process from Point/Station      206.000 to Point/Station      209.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1196.000(Ft.)
Downstream point/station elevation =  1191.000(Ft.)
Pipe length  =   238.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   224.750(CFS)
Nearest computed pipe diameter  =     51.00(In.)
Calculated individual pipe flow  =   224.750(CFS)
Normal flow depth in pipe =   38.48(In.)
Flow top width inside pipe =   43.89(In.)
Critical depth could not be calculated.
Pipe flow velocity =     19.57(Ft/s)
Travel time through pipe =    0.20 min.
Time of concentration (TC) =    15.25 min.


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Process from Point/Station      206.000 to Point/Station      209.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     93.000(Ac.)
Runoff from this stream =    224.750(CFS)
Time of concentration =   15.25 min.
Rainfall intensity =     2.685(In/Hr)


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Process from Point/Station      207.000 to Point/Station      208.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   915.000(Ft.)
Top (of initial area) elevation =  1313.000(Ft.)
Bottom (of initial area) elevation =  1235.000(Ft.)
Difference in elevation =    78.000(Ft.)
Slope =    0.08525  s(percent)=       8.52
TC = k(0.496)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.415 min.
Rainfall intensity =      2.946(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.848
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  88.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     13.736(CFS)
Total initial stream area =        5.500(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station      208.000 to Point/Station      209.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1235.000(Ft.)
End of natural channel elevation =   1190.000(Ft.)
Length of natural channel  =   630.000(Ft.)
Estimated mean flow rate at midpoint of channel =     20.354(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   8.05(Ft/s)

Correction to map slope used on extremely rugged channels with
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drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0714
Corrected/adjusted channel slope =  0.0714
Travel time =    1.30 min.     TC =   13.72  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.842
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.160
Decimal fraction soil group C = 0.840
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  87.35
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.817(In/Hr) for a   100.0 year storm
Subarea runoff =     12.573(CFS) for      5.300(Ac.)
Total runoff =     26.309(CFS)        Total area =      10.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      208.000 to Point/Station      209.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     10.800(Ac.)
Runoff from this stream =     26.309(CFS)
Time of concentration =   13.72 min.
Rainfall intensity =     2.817(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      224.750     15.25                2.685
2       26.309     13.72                2.817
Largest stream flow has longer time of concentration
Qp =    224.750 + sum of
          Qb         Ia/Ib
          26.309 *    0.953 =     25.084
Qp =    249.834

Total of 2 streams to confluence:
Flow rates before confluence point:
     224.750      26.309
Area of streams before confluence:
       93.000       10.800
Results of confluence:
Total flow rate =    249.834(CFS)
Time of concentration =    15.254 min.
Effective stream area after confluence =    103.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      209.000 to Point/Station      212.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1190.000(Ft.)
Downstream point/station elevation =  1185.900(Ft.)
Pipe length  =   507.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   249.834(CFS)
Nearest computed pipe diameter  =     60.00(In.)
Calculated individual pipe flow  =   249.834(CFS)
Normal flow depth in pipe =   54.00(In.)
Flow top width inside pipe =   36.00(In.)
Critical Depth =   53.06(In.)
Pipe flow velocity =     13.41(Ft/s)
Travel time through pipe =    0.63 min.
Time of concentration (TC) =    15.88 min.
```

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Process from Point/Station      209.000 to Point/Station      212.000
**** CONFLUENCE OF MINOR STREAMS ****
____________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    103.800(Ac.)
Runoff from this stream =    249.834(CFS)
Time of concentration =   15.88 min.
Rainfall intensity =     2.637(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      210.000 to Point/Station      211.000
**** INITIAL AREA EVALUATION ****
____________________________________________________________________________
Initial area flow distance =   553.000(Ft.)
Top (of initial area) elevation =  1230.000(Ft.)
Bottom (of initial area) elevation =  1210.000(Ft.)
Difference in elevation =    20.000(Ft.)
Slope =    0.03617  s(percent)=       3.62
TC = k(0.474)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.514 min.
Rainfall intensity =      3.048(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.855
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.710
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.290
RI index for soil(AMC 2)  =  86.53
Pervious area fraction =  0.780; Impervious fraction =  0.220
Initial subarea runoff =     11.209(CFS)
Total initial stream area =        4.300(Ac.)
Pervious area fraction = 0.780


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      211.000 to Point/Station      212.000
**** IMPROVED CHANNEL TRAVEL TIME ****
____________________________________________________________________________
Upstream point elevation =  1210.000(Ft.)
Downstream point elevation =  1192.000(Ft.)
Channel length thru subarea  =  1361.000(Ft.)
Channel base width     =   10.000(Ft.)
Slope or 'Z' of left channel bank =  10.000
Slope or 'Z' of right channel bank =  10.000
Estimated mean flow rate at midpoint of channel =     17.153(CFS)
Manning's 'N'    = 0.025
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     17.153(CFS)
Depth of flow =   0.395(Ft.), Average velocity =   3.112(Ft/s)
Channel flow top width =   17.901(Ft.)
Flow Velocity =    3.11(Ft/s)
Travel time  =    7.29 min.
Time of concentration =   18.80 min.

Sub-Channel No. 1 Critical depth =      0.391(Ft.)
  '     '       '     Critical flow top width =     17.813(Ft.)
  '     '       '     Critical flow velocity=    3.158(Ft/s)
  '     '       '     Critical flow area =      5.432(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.820
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  82.77
Pervious area fraction =  0.870; Impervious fraction =  0.130
```

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Rainfall intensity =      2.444(In/Hr) for a   100.0 year storm
Subarea runoff =     11.827(CFS) for      5.900(Ac.)
Total runoff =     23.036(CFS)       Total area =      10.200(Ac.)
Depth of flow =   0.463(Ft.), Average velocity =   3.401(Ft/s)

Sub-Channel No. 1 Critical depth =      0.465(Ft.)
  '     '       '     Critical flow top width =     19.297(Ft.)
  '     '       '     Critical flow velocity=    3.383(Ft/s)
  '     '       '     Critical flow area =      6.809(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      211.000 to Point/Station      212.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.816
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.630
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.370
RI index for soil(AMC 2)  =  80.41
Pervious area fraction =  0.800; Impervious fraction =  0.200
Time of concentration =    18.80 min.
Rainfall intensity =      2.444(In/Hr) for a   100.0 year storm
Subarea runoff =      9.170(CFS) for      4.600(Ac.)
Total runoff =     32.206(CFS)       Total area =      14.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      211.000 to Point/Station      212.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     14.800(Ac.)
Runoff from this stream =     32.206(CFS)
Time of concentration =   18.80 min.
Rainfall intensity =     2.444(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      249.834     15.88                2.637
2       32.206     18.80                2.444
Largest stream flow has longer or shorter time of concentration
Qp =    249.834 + sum of
          Qa          Tb/Ta
          32.206 *    0.845 =     27.207
Qp =    277.040

Total of 2 streams to confluence:
Flow rates before confluence point:
     249.834      32.206
Area of streams before confluence:
      103.800       14.800
Results of confluence:
Total flow rate =    277.040(CFS)
Time of concentration =    15.884 min.
Effective stream area after confluence =    118.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      212.000 to Point/Station      213.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1185.900(Ft.)
Downstream point/station elevation =  1176.000(Ft.)
Pipe length  =  1342.00(Ft.)   Manning's N = 0.013
```

No. of pipes = 1 Required pipe flow =   277.040(CFS)
Nearest computed pipe diameter =   66.00(In.)
Calculated individual pipe flow =   277.040(CFS)
Normal flow depth in pipe =   51.94(In.)
Flow top width inside pipe =   54.05(In.)
Critical Depth =   55.38(In.)
Pipe flow velocity =   13.83(Ft/s)
Travel time through pipe =   1.62 min.
Time of concentration (TC) =   17.50 min.
End of computations, total study area =   118.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.978
Area averaged RI index number = 84.3

10-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 11/19/11 File:ARBP10.out

ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARBP10

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.920(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 201.000 to Point/Station 202.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 765.000(Ft.)
Top (of initial area) elevation = 1844.000(Ft.)
Bottom (of initial area) elevation = 1556.000(Ft.)
Difference in elevation = 288.000(Ft.)
Slope = 0.37647 s(percent)= 37.65
TC = k(0.541)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.358 min.
Rainfall intensity = 2.123(In/Hr) for a 10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.804
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 84.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 12.120(CFS)
Total initial stream area = 7.100(Ac.)
Pervious area fraction = 1.000

++

Process from Point/Station 202.000 to Point/Station 203.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 1556.000(Ft.)
End of natural channel elevation = 1440.000(Ft.)
Length of natural channel = 851.000(Ft.)

```
Estimated mean flow rate at midpoint of channel =     23.215(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.52(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.1363
Corrected/adjusted channel slope =  0.1363
Travel time =    1.23 min.     TC =   10.59  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.799
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.009(In/Hr) for a    10.0 year storm
Subarea runoff =     20.863(CFS) for     13.000(Ac.)
Total runoff =     32.982(CFS)        Total area =      20.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      204.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1440.000(Ft.)
End of natural channel elevation =   1302.000(Ft.)
Length of natural channel  =  1459.000(Ft.)
Estimated mean flow rate at midpoint of channel =     50.786(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.96(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0946
Corrected/adjusted channel slope =  0.0946
Travel time =    2.03 min.     TC =   12.62  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.792
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  84.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.856(In/Hr) for a    10.0 year storm
Subarea runoff =     31.883(CFS) for     21.700(Ac.)
Total runoff =     64.866(CFS)        Total area =      41.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      204.000 to Point/Station      205.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1302.000(Ft.)
End of natural channel elevation =   1217.000(Ft.)
Length of natural channel  =  1511.000(Ft.)
Estimated mean flow rate at midpoint of channel =     97.299(CFS)
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```
Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.17(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0563
Corrected/adjusted channel slope =  0.0563
Travel time =    2.26 min.     TC =   14.88  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.787
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.020
Decimal fraction soil group C = 0.860
Decimal fraction soil group D = 0.120
RI index for soil(AMC 2)  =  84.31
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.724(In/Hr) for a    10.0 year storm
Subarea runoff =     56.682(CFS) for     41.800(Ac.)
Total runoff =    121.548(CFS)       Total area =      83.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      205.000 to Point/Station      206.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  1217.000(Ft.)
Downstream point elevation =  1196.000(Ft.)
Channel length thru subarea  =   504.000(Ft.)
Channel base width     =   20.000(Ft.)
Slope or 'Z' of left channel bank =   4.000
Slope or 'Z' of right channel bank =   4.000
Estimated mean flow rate at midpoint of channel =    127.708(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    5.000(Ft.)
Flow(q) thru subarea =    127.708(CFS)
Depth of flow =   0.736(Ft.), Average velocity =   7.567(Ft/s)
Channel flow top width =   25.885(Ft.)
Flow Velocity =    7.57(Ft/s)
Travel time  =    1.11 min.
Time of concentration =   15.99 min.

Sub-Channel No. 1 Critical depth =      1.008(Ft.)
  '     '       '     Critical flow top width =     28.063(Ft.)
  '     '       '     Critical flow velocity=    5.273(Ft/s)
  '     '       '     Critical flow area =     24.219(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.780
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.340
Decimal fraction soil group C = 0.240
Decimal fraction soil group D = 0.420
RI index for soil(AMC 2)  =  83.83
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.669(In/Hr) for a    10.0 year storm
Subarea runoff =     12.232(CFS) for      9.400(Ac.)
Total runoff =    133.779(CFS)       Total area =      93.000(Ac.)
Depth of flow =   0.756(Ft.), Average velocity =   7.690(Ft/s)

Sub-Channel No. 1 Critical depth =      1.031(Ft.)
  '     '       '     Critical flow top width =     28.250(Ft.)
  '     '       '     Critical flow velocity=    5.377(Ft/s)
  '     '       '     Critical flow area =     24.879(Sq.Ft)
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Process from Point/Station      206.000 to Point/Station      209.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1196.000(Ft.)
Downstream point/station elevation =  1191.000(Ft.)
Pipe length  =   238.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   133.779(CFS)
Nearest computed pipe diameter  =     42.00(In.)
Calculated individual pipe flow  =   133.779(CFS)
Normal flow depth in pipe =   31.69(In.)
Flow top width inside pipe =   36.15(In.)
Critical depth could not be calculated.
Pipe flow velocity =     17.19(Ft/s)
Travel time through pipe =    0.23 min.
Time of concentration (TC) =    16.22 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      206.000 to Point/Station      209.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     93.000(Ac.)
Runoff from this stream =    133.779(CFS)
Time of concentration =   16.22 min.
Rainfall intensity =     1.658(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      207.000 to Point/Station      208.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   915.000(Ft.)
Top (of initial area) elevation =  1313.000(Ft.)
Bottom (of initial area) elevation =  1235.000(Ft.)
Difference in elevation =    78.000(Ft.)
Slope =    0.08525  s(percent)=       8.52
TC = k(0.496)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.415 min.
Rainfall intensity =      1.870(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.820
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 1.000
RI index for soil(AMC 2)  =  88.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      8.436(CFS)
Total initial stream area =        5.500(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      208.000 to Point/Station      209.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1235.000(Ft.)
End of natural channel elevation =   1190.000(Ft.)
Length of natural channel  =   630.000(Ft.)
Estimated mean flow rate at midpoint of channel =     12.500(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   7.07(Ft/s)

Correction to map slope used on extremely rugged channels with
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drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0714
Corrected/adjusted channel slope =  0.0714
Travel time =    1.48 min.     TC =   13.90  min.


 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.812
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.160
Decimal fraction soil group C = 0.840
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  87.35
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.777(In/Hr) for a    10.0 year storm
Subarea runoff =      7.646(CFS) for      5.300(Ac.)
Total runoff =     16.082(CFS)        Total area =      10.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      208.000 to Point/Station      209.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     10.800(Ac.)
Runoff from this stream =     16.082(CFS)
Time of concentration =   13.90 min.
Rainfall intensity =     1.777(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      133.779     16.22                1.658
2       16.082     13.90                1.777
Largest stream flow has longer time of concentration
Qp =    133.779 + sum of
          Qb         Ia/Ib
          16.082 *    0.933 =     15.003
Qp =    148.782

Total of 2 streams to confluence:
Flow rates before confluence point:
     133.779      16.082
Area of streams before confluence:
       93.000       10.800
Results of confluence:
Total flow rate =    148.782(CFS)
Time of concentration =    16.219 min.
Effective stream area after confluence =    103.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      209.000 to Point/Station      212.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1190.000(Ft.)
Downstream point/station elevation =  1185.900(Ft.)
Pipe length  =   507.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   148.782(CFS)
Nearest computed pipe diameter  =     51.00(In.)
Calculated individual pipe flow  =   148.782(CFS)
Normal flow depth in pipe =   40.88(In.)
Flow top width inside pipe =   40.69(In.)
Critical Depth =   43.19(In.)
Pipe flow velocity =     12.20(Ft/s)
Travel time through pipe =    0.69 min.
Time of concentration (TC) =    16.91 min.
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      209.000 to Point/Station      212.000
**** CONFLUENCE OF MINOR STREAMS ****
____________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =    103.800(Ac.)
Runoff from this stream =    148.782(CFS)
Time of concentration =   16.91 min.
Rainfall intensity =     1.627(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      210.000 to Point/Station      211.000
**** INITIAL AREA EVALUATION ****
____________________________________________________________________________
Initial area flow distance =   553.000(Ft.)
Top (of initial area) elevation =  1230.000(Ft.)
Bottom (of initial area) elevation =  1210.000(Ft.)
Difference in elevation =    20.000(Ft.)
Slope =    0.03617  s(percent)=       3.62
TC = k(0.474)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.514 min.
Rainfall intensity =      1.934(In/Hr) for a    10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.832
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.710
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.290
RI index for soil(AMC 2)  =  86.53
Pervious area fraction =  0.780; Impervious fraction =  0.220
Initial subarea runoff =      6.920(CFS)
Total initial stream area =        4.300(Ac.)
Pervious area fraction = 0.780


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Process from Point/Station      211.000 to Point/Station      212.000
**** IMPROVED CHANNEL TRAVEL TIME ****
____________________________________________________________________________
Upstream point elevation =  1210.000(Ft.)
Downstream point elevation =  1192.000(Ft.)
Channel length thru subarea  =  1361.000(Ft.)
Channel base width     =   10.000(Ft.)
Slope or 'Z' of left channel bank =  10.000
Slope or 'Z' of right channel bank =  10.000
Estimated mean flow rate at midpoint of channel =     10.427(CFS)
Manning's 'N'    = 0.025
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     10.427(CFS)
Depth of flow =   0.301(Ft.), Average velocity =   2.667(Ft/s)
Channel flow top width =   16.012(Ft.)
Flow Velocity =    2.67(Ft/s)
Travel time  =    8.51 min.
Time of concentration =   20.02 min.

Sub-Channel No. 1 Critical depth =      0.293(Ft.)
  '     '       '     Critical flow top width =     15.859(Ft.)
  '     '       '     Critical flow velocity=    2.753(Ft/s)
  '     '       '     Critical flow area =      3.788(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.778
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  82.77
Pervious area fraction =  0.870; Impervious fraction =  0.130
```

```
Rainfall intensity =      1.508(In/Hr) for a    10.0 year storm
Subarea runoff =      6.925(CFS) for      5.900(Ac.)
Total runoff =     13.845(CFS)       Total area =      10.200(Ac.)
Depth of flow =   0.352(Ft.), Average velocity =   2.914(Ft/s)

Sub-Channel No. 1 Critical depth =      0.344(Ft.)
  '     '       '     Critical flow top width =     16.875(Ft.)
  '     '       '     Critical flow velocity=    2.997(Ft/s)
  '     '       '     Critical flow area =      4.619(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      211.000 to Point/Station      212.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
USER INPUT of soil data for subarea
Runoff Coefficient = 0.772
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.630
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.370
RI index for soil(AMC 2)  =  80.41
Pervious area fraction =  0.800; Impervious fraction =  0.200
Time of concentration =    20.02 min.
Rainfall intensity =      1.508(In/Hr) for a    10.0 year storm
Subarea runoff =      5.358(CFS) for      4.600(Ac.)
Total runoff =     19.204(CFS)       Total area =      14.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      211.000 to Point/Station      212.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     14.800(Ac.)
Runoff from this stream =     19.204(CFS)
Time of concentration =   20.02 min.
Rainfall intensity =     1.508(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1      148.782     16.91                1.627
2       19.204     20.02                1.508
Largest stream flow has longer or shorter time of concentration
Qp =    148.782 + sum of
          Qa          Tb/Ta
          19.204 *    0.845 =     16.223
Qp =    165.006

Total of 2 streams to confluence:
Flow rates before confluence point:
     148.782      19.204
Area of streams before confluence:
      103.800       14.800
Results of confluence:
Total flow rate =    165.006(CFS)
Time of concentration =    16.912 min.
Effective stream area after confluence =    118.600(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      212.000 to Point/Station      213.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1185.900(Ft.)
Downstream point/station elevation =  1176.000(Ft.)
Pipe length  =  1342.00(Ft.)   Manning's N = 0.013
```

No. of pipes = 1 Required pipe flow =   165.006(CFS)
Nearest computed pipe diameter =   54.00(In.)
Calculated individual pipe flow =   165.006(CFS)
Normal flow depth in pipe =   43.22(In.)
Flow top width inside pipe =   43.17(In.)
Critical Depth =   45.01(In.)
Pipe flow velocity =   12.10(Ft/s)
Travel time through pipe =   1.85 min.
Time of concentration (TC) =   18.76 min.
End of computations, total study area =   118.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.978
Area averaged RI index number = 84.3

APPENDIX B.3: AREA "C"

100-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/19/11 File:ARCP100.out

ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 100-YEAR STORM EVENT
FILENAME: ARCP100

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.450(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 301.000 to Point/Station 302.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 989.000(Ft.)
Top (of initial area) elevation = 1193.000(Ft.)
Bottom (of initial area) elevation = 1182.000(Ft.)
Difference in elevation = 11.000(Ft.)
Slope = 0.01112 s(percent)= 1.11
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 18.624 min.
Rainfall intensity = 2.455(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.640
Decimal fraction soil group B = 0.360
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 80.86
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 7.228(CFS)
Total initial stream area = 3.600(Ac.)
Pervious area fraction = 0.800
End of computations, total study area = 3.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number = 80.9

10-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/19/11 File:ARCP10.out

ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARCP10

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.920(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 301.000 to Point/Station 302.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 989.000(Ft.)
Top (of initial area) elevation = 1193.000(Ft.)
Bottom (of initial area) elevation = 1182.000(Ft.)
Difference in elevation = 11.000(Ft.)
Slope = 0.01112 s(percent)= 1.11
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 18.624 min.
Rainfall intensity = 1.558(In/Hr) for a 10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.779
Decimal fraction soil group A = 0.640
Decimal fraction soil group B = 0.360
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 80.86
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 4.367(CFS)
Total initial stream area = 3.600(Ac.)
Pervious area fraction = 0.800
End of computations, total study area = 3.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number = 80.9

APPENDIX B.4: AREA "D"

100-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/19/11 File:ARDP100.out

ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 100-YEAR STORM EVENT
FILENAME: ARDP100

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.450(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 401.000 to Point/Station 402.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 558.000(Ft.)
Top (of initial area) elevation = 1209.000(Ft.)
Bottom (of initial area) elevation = 1186.000(Ft.)
Difference in elevation = 23.000(Ft.)
Slope = 0.04122 s(percent)= 4.12
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.399 min.
Rainfall intensity = 3.062(In/Hr) for a 100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.852
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 86.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 1.827(CFS)
Total initial stream area = 0.700(Ac.)
Pervious area fraction = 0.800
End of computations, total study area = 0.70 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number = 86.0

10-YEAR

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 08/19/11 File:ARDP10.out

ALBERHILL POST-PROJECT CONDITION HYDROLOGY
RATIONAL METHOD ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARDP10

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 6045

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.550(In.)
100 year, 1 hour precipitation = 1.450(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.920(In/Hr)
Slope of intensity duration curve = 0.4500

++

Process from Point/Station 401.000 to Point/Station 402.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 558.000(Ft.)
Top (of initial area) elevation = 1209.000(Ft.)
Bottom (of initial area) elevation = 1186.000(Ft.)
Difference in elevation = 23.000(Ft.)
Slope = 0.04122 s(percent)= 4.12
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.399 min.
Rainfall intensity = 1.943(In/Hr) for a 10.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 0.828
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 86.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 1.126(CFS)
Total initial stream area = 0.700(Ac.)
Pervious area fraction = 0.800
End of computations, total study area = 0.70 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number = 86.0

APPENDIX C: ONSITE POST-PROJECT UNIT HYDROGRAPH HYDROLOGY

APPENDIX C.1: AREA "A"

10-YEAR, 1-HOUR

U n i t H y d r o g r a p h A n a l y s i s

Study date 11/19/11 File: ARAP110.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6045

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

SCE ALBERHILL SUBSTATION POST-PROJECT CONDITION HYDROLOGY
AREA TRIBUTARY TO BASIN "A"
UNIT HYDROGRAPH ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARAP

Drainage Area = 196.70(Ac.) = 0.307 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 196.70(Ac.) = 0.307 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	0.55	108.19

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	1.45	285.21

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.450(In)

Point rain (area averaged) = 0.920(In)
Areal adjustment factor = 99.82 %
Adjusted average point rain = 0.919(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
196.700	83.40	0.000

Total Area Entered = 196.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.4	83.4	0.205	0.000	0.205	1.000	0.205
					Sum (F) =	0.205

```
      Area averaged mean soil loss (F) (In/Hr) =  0.205
      Minimum soil loss rate ((In/Hr)) =  0.103
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.900
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.4800
      ------------------------------------------------------------------------

                   U n i t  H y d r o g r a p h
                          FOOTHILL S-Curve
      ------------------------------------------------------------------------
                   Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         47.348          3.964             7.858
          2   0.167         94.697         17.320            34.334
          3   0.250        142.045         38.354            76.032
          4   0.333        189.394         15.822            31.365
          5   0.417        236.742          8.739            17.325
          6   0.500        284.091          5.742            11.383
          7   0.583        331.439          3.906             7.743
          8   0.667        378.788          2.526             5.008
          9   0.750        426.136          1.480             2.934
         10   0.833        473.485          0.633             1.254
         11   0.917        520.833          0.467             0.926
         12   1.000        568.182          0.321             0.636
         13   1.083        615.530          0.351             0.695
         14   1.167        662.879          0.229             0.453
         15   1.250        710.227          0.147             0.291
                                   Sum = 100.000   Sum=     198.237
------------------------------------------------------------------------


  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     4.40      0.485         0.205      ---          0.28
   2   0.17     4.50      0.496         0.205      ---          0.29
   3   0.25     5.40      0.595         0.205      ---          0.39
   4   0.33     5.40      0.595         0.205      ---          0.39
   5   0.42     5.70      0.628         0.205      ---          0.42
   6   0.50     6.40      0.706         0.205      ---          0.50
   7   0.58     7.90      0.871         0.205      ---          0.67
   8   0.67     9.10      1.003         0.205      ---          0.80
   9   0.75    12.80      1.411         0.205      ---          1.21
  10   0.83    25.60      2.822         0.205      ---          2.62
  11   0.92     7.90      0.871         0.205      ---          0.67
  12   1.00     4.90      0.540         0.205      ---          0.33
     Sum =     100.0                                    Sum =     8.6
      Flood volume = Effective rainfall      0.71(In)
       times area     196.7(Ac.)/[(In)/(Ft.)] =      11.7(Ac.Ft)
      Total soil loss =      0.21(In)
      Total soil loss =     3.364(Ac.Ft)
      Total rainfall =      0.92(In)
      Flood volume =      509373.2 Cubic Feet
      Total soil loss =      146545.7 Cubic Feet
      ------------------------------------------------------------------------
       Peak flow rate of this hydrograph =    291.887(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       75.0     150.0     225.0     300.0
  ------------------------------------------------------------------------
    0+ 5       0.0152      2.20  Q         |         |         |         |
    0+10       0.0971     11.90  VQ        |         |         |         |
```

```
    0+15       0.3336     34.34  |V  Q     |         |         |         |
    0+20       0.6598     47.37  | V   Q   |         |         |         |
    0+25       1.0756     60.37  |  V    Q |         |         |         |
    0+30       1.5481     68.60  |    V   Q|         |         |         |
    0+35       2.0927     79.08  |      V  Q         |         |         |
    0+40       2.7493     95.33  |        V| Q       |         |         |
    0+45       3.5778    120.30  |         | V   Q   |         |         |
    0+50       4.7021    163.25  |         |     V   |Q        |         |
    0+55       6.3283    236.12  |         |         |V        |Q        |
    1+ 0       8.3386    291.89  |         |         |       V |       Q |
    1+ 5       9.6084    184.38  |         |         |   Q     | V       |
    1+10      10.4204    117.91  |         |    Q    |         |    V    |
    1+15      10.8949     68.89  |        Q|         |         |      V  |
    1+20      11.1989     44.14  |    Q    |         |         |       V |
    1+25      11.3927     28.14  |  Q      |         |         |       V |
    1+30      11.5094     16.94  | Q       |         |         |        V|
    1+35      11.5738      9.35  |Q        |         |         |        V|
    1+40      11.6152      6.01  Q         |         |         |        V|
    1+45      11.6434      4.10  Q         |         |         |        V|
    1+50      11.6664      3.33  Q         |         |         |        V|
    1+55      11.6816      2.21  Q         |         |         |        V|
    2+ 0      11.6905      1.30  Q         |         |         |        V|
    2+ 5      11.6929      0.35  Q         |         |         |        V|
    2+10      11.6936      0.10  Q         |         |         |         V
-------------------------------------------------------------------------
```

10-YEAR, 3-HOUR

U n i t H y d r o g r a p h A n a l y s i s

Study date 11/19/11 File: ARAP310.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6045

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

SCE ALBERHILL SUBSTATION POST-PROJECT CONDITION HYDROLOGY
AREA TRIBUTARY TO BASIN "A"
UNIT HYDROGRAPH ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARAP

Drainage Area = 196.70(Ac.) = 0.307 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 196.70(Ac.) = 0.307 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	1.00	196.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	2.50	491.75

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.000(In)
Area Averaged 100-Year Rainfall = 2.500(In)

Point rain (area averaged) = 1.617(In)
Areal adjustment factor = 99.91 %
Adjusted average point rain = 1.616(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
196.700	83.40	0.000

Total Area Entered = 196.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.4	83.4	0.205	0.000	0.205	1.000	0.205
					Sum (F) =	0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205
Minimum soil loss rate ((In/Hr)) = 0.103
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.348	3.964	7.858
2	0.167	94.697	17.320	34.334
3	0.250	142.045	38.354	76.032
4	0.333	189.394	15.822	31.365
5	0.417	236.742	8.739	17.325
6	0.500	284.091	5.742	11.383
7	0.583	331.439	3.906	7.743
8	0.667	378.788	2.526	5.008
9	0.750	426.136	1.480	2.934
10	0.833	473.485	0.633	1.254
11	0.917	520.833	0.467	0.926
12	1.000	568.182	0.321	0.636
13	1.083	615.530	0.351	0.695
14	1.167	662.879	0.229	0.453
15	1.250	710.227	0.147	0.291
		Sum = 100.000	Sum=	198.237

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.252	0.205	---	0.05
2	0.17	1.30	0.252	0.205	---	0.05
3	0.25	1.10	0.213	0.205	---	0.01
4	0.33	1.50	0.291	0.205	---	0.09
5	0.42	1.50	0.291	0.205	---	0.09
6	0.50	1.80	0.349	0.205	---	0.14
7	0.58	1.50	0.291	0.205	---	0.09
8	0.67	1.80	0.349	0.205	---	0.14
9	0.75	1.80	0.349	0.205	---	0.14
10	0.83	1.50	0.291	0.205	---	0.09
11	0.92	1.60	0.310	0.205	---	0.10
12	1.00	1.80	0.349	0.205	---	0.14
13	1.08	2.20	0.427	0.205	---	0.22
14	1.17	2.20	0.427	0.205	---	0.22
15	1.25	2.20	0.427	0.205	---	0.22
16	1.33	2.00	0.388	0.205	---	0.18
17	1.42	2.60	0.504	0.205	---	0.30
18	1.50	2.70	0.523	0.205	---	0.32
19	1.58	2.40	0.465	0.205	---	0.26
20	1.67	2.70	0.523	0.205	---	0.32
21	1.75	3.30	0.640	0.205	---	0.43
22	1.83	3.10	0.601	0.205	---	0.40
23	1.92	2.90	0.562	0.205	---	0.36
24	2.00	3.00	0.582	0.205	---	0.38
25	2.08	3.10	0.601	0.205	---	0.40
26	2.17	4.20	0.814	0.205	---	0.61
27	2.25	5.00	0.969	0.205	---	0.76
28	2.33	3.50	0.679	0.205	---	0.47
29	2.42	6.80	1.318	0.205	---	1.11
30	2.50	7.30	1.415	0.205	---	1.21
31	2.58	8.20	1.590	0.205	---	1.38
32	2.67	5.90	1.144	0.205	---	0.94
33	2.75	2.00	0.388	0.205	---	0.18
34	2.83	1.80	0.349	0.205	---	0.14
35	2.92	1.80	0.349	0.205	---	0.14
36	3.00	0.60	0.116	0.205	0.105	0.01

```
   Sum =     100.0                                    Sum =    12.1
      Flood volume = Effective rainfall      1.01(In)
       times area     196.7(Ac.)/[(In)/(Ft.)] =      16.5(Ac.Ft)
      Total soil loss =      0.61(In)
      Total soil loss =     9.955(Ac.Ft)
      Total rainfall =      1.62(In)
      Flood volume =      720003.7 Cubic Feet
      Total soil loss =      433654.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =    213.384(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       75.0     150.0     225.0     300.0
 ------------------------------------------------------------------------
   0+ 5       0.0025      0.37  Q         |         |         |         |
   0+10       0.0161      1.98  Q         |         |         |         |
   0+15       0.0522      5.23  Q         |         |         |         |
   0+20       0.0934      5.98  Q         |         |         |         |
   0+25       0.1382      6.50  Q         |         |         |         |
   0+30       0.2220     12.18  VQ        |         |         |         |
   0+35       0.3311     15.84  V Q       |         |         |         |
   0+40       0.4679     19.86  |VQ       |         |         |         |
   0+45       0.6056     19.98  |VQ       |         |         |         |
   0+50       0.7681     23.60  |V Q      |         |         |         |
   0+55       0.9303     23.55  | VQ      |         |         |         |
   1+ 0       1.0756     21.10  | Q       |         |         |         |
   1+ 5       1.2360     23.29  | VQ      |         |         |         |
   1+10       1.4351     28.90  |  Q      |         |         |         |
   1+15       1.6825     35.92  |   Q     |         |         |         |
   1+20       1.9489     38.68  |   VQ    |         |         |         |
   1+25       2.2243     39.99  |    Q    |         |         |         |
   1+30       2.5162     42.38  |    QV   |         |         |         |
   1+35       2.8676     51.02  |     Q   |         |         |         |
   1+40       3.2425     54.44  |      Q  |         |         |         |
   1+45       3.6239     55.38  |      QV |         |         |         |
   1+50       4.0588     63.15  |       QV|         |         |         |
   1+55       4.5560     72.19  |        Q|V        |         |         |
   2+ 0       5.0570     72.74  |        Q| V       |         |         |
   2+ 5       5.5535     72.09  |        Q|  V      |         |         |
   2+10       6.0749     75.72  |         Q   V     |         |         |
   2+15       6.6699     86.39  |         |Q    V   |         |         |
   2+20       7.4040    106.60  |         |   Q  V  |         |         |
   2+25       8.2348    120.63  |         |     Q  V|         |         |
   2+30       9.1308    130.09  |         |      Q  | V       |         |
   2+35      10.3683    179.69  |         |         |  Q V    |         |
   2+40      11.8020    208.17  |         |         |      QV |         |
   2+45      13.2716    213.38  |         |         |       Q | V       |
   2+50      14.4206    166.83  |         |         | Q       |   V     |
   2+55      15.1255    102.36  |         |  Q      |         |     V   |
   3+ 0      15.6241     72.39  |        Q|         |         |      V  |
   3+ 5      15.9822     52.00  |     Q   |         |         |       V |
   3+10      16.1941     30.76  |   Q     |         |         |        V|
   3+15      16.3211     18.45  | Q       |         |         |        V|
   3+20      16.3972     11.04  |Q        |         |         |        V|
   3+25      16.4450      6.94  Q         |         |         |        V|
   3+30      16.4773      4.70  Q         |         |         |        V|
   3+35      16.4998      3.26  Q         |         |         |        V|
   3+40      16.5142      2.10  Q         |         |         |        V|
   3+45      16.5225      1.19  Q         |         |         |        V|
   3+50      16.5263      0.56  Q         |         |         |        V|
   3+55      16.5279      0.23  Q         |         |         |        V|
   4+ 0      16.5287      0.12  Q         |         |         |        V|
   4+ 5      16.5290      0.05  Q         |         |         |        V|
   4+10      16.5290      0.00  Q         |         |         |         V
------------------------------------------------------------------------
```

10-YEAR, 6-HOUR

U n i t H y d r o g r a p h A n a l y s i s

Study date 11/19/11 File: ARAP610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6045

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

SCE ALBERHILL SUBSTATION POST-PROJECT CONDITION HYDROLOGY
AREA TRIBUTARY TO BASIN "A"
UNIT HYDROGRAPH ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARAP

Drainage Area = 196.70(Ac.) = 0.307 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 196.70(Ac.) = 0.307 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	1.40	275.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	3.50	688.45

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.500(In)

Point rain (area averaged) = 2.264(In)
Areal adjustment factor = 99.93 %
Adjusted average point rain = 2.262(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
196.700	83.40	0.000

Total Area Entered = 196.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.4	83.4	0.205	0.000	0.205	1.000	0.205
					Sum (F) =	0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205
Minimum soil loss rate ((In/Hr)) = 0.103
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.348	3.964	7.858
2	0.167	94.697	17.320	34.334
3	0.250	142.045	38.354	76.032
4	0.333	189.394	15.822	31.365
5	0.417	236.742	8.739	17.325
6	0.500	284.091	5.742	11.383
7	0.583	331.439	3.906	7.743
8	0.667	378.788	2.526	5.008
9	0.750	426.136	1.480	2.934
10	0.833	473.485	0.633	1.254
11	0.917	520.833	0.467	0.926
12	1.000	568.182	0.321	0.636
13	1.083	615.530	0.351	0.695
14	1.167	662.879	0.229	0.453
15	1.250	710.227	0.147	0.291
		Sum = 100.000	Sum=	198.237

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.136	0.205	0.122	0.01
2	0.17	0.60	0.163	0.205	0.147	0.02
3	0.25	0.60	0.163	0.205	0.147	0.02
4	0.33	0.60	0.163	0.205	0.147	0.02
5	0.42	0.60	0.163	0.205	0.147	0.02
6	0.50	0.70	0.190	0.205	0.171	0.02
7	0.58	0.70	0.190	0.205	0.171	0.02
8	0.67	0.70	0.190	0.205	0.171	0.02
9	0.75	0.70	0.190	0.205	0.171	0.02
10	0.83	0.70	0.190	0.205	0.171	0.02
11	0.92	0.70	0.190	0.205	0.171	0.02
12	1.00	0.80	0.217	0.205	---	0.01
13	1.08	0.80	0.217	0.205	---	0.01
14	1.17	0.80	0.217	0.205	---	0.01
15	1.25	0.80	0.217	0.205	---	0.01
16	1.33	0.80	0.217	0.205	---	0.01
17	1.42	0.80	0.217	0.205	---	0.01
18	1.50	0.80	0.217	0.205	---	0.01
19	1.58	0.80	0.217	0.205	---	0.01
20	1.67	0.80	0.217	0.205	---	0.01
21	1.75	0.80	0.217	0.205	---	0.01
22	1.83	0.80	0.217	0.205	---	0.01
23	1.92	0.80	0.217	0.205	---	0.01
24	2.00	0.90	0.244	0.205	---	0.04
25	2.08	0.80	0.217	0.205	---	0.01
26	2.17	0.90	0.244	0.205	---	0.04
27	2.25	0.90	0.244	0.205	---	0.04
28	2.33	0.90	0.244	0.205	---	0.04
29	2.42	0.90	0.244	0.205	---	0.04
30	2.50	0.90	0.244	0.205	---	0.04
31	2.58	0.90	0.244	0.205	---	0.04
32	2.67	0.90	0.244	0.205	---	0.04
33	2.75	1.00	0.271	0.205	---	0.07
34	2.83	1.00	0.271	0.205	---	0.07
35	2.92	1.00	0.271	0.205	---	0.07
36	3.00	1.00	0.271	0.205	---	0.07

37	3.08	1.00	0.271	0.205	---	0.07
38	3.17	1.10	0.299	0.205	---	0.09
39	3.25	1.10	0.299	0.205	---	0.09
40	3.33	1.10	0.299	0.205	---	0.09
41	3.42	1.20	0.326	0.205	---	0.12
42	3.50	1.30	0.353	0.205	---	0.15
43	3.58	1.40	0.380	0.205	---	0.17
44	3.67	1.40	0.380	0.205	---	0.17
45	3.75	1.50	0.407	0.205	---	0.20
46	3.83	1.50	0.407	0.205	---	0.20
47	3.92	1.60	0.434	0.205	---	0.23
48	4.00	1.60	0.434	0.205	---	0.23
49	4.08	1.70	0.462	0.205	---	0.26
50	4.17	1.80	0.489	0.205	---	0.28
51	4.25	1.90	0.516	0.205	---	0.31
52	4.33	2.00	0.543	0.205	---	0.34
53	4.42	2.10	0.570	0.205	---	0.36
54	4.50	2.10	0.570	0.205	---	0.36
55	4.58	2.20	0.597	0.205	---	0.39
56	4.67	2.30	0.624	0.205	---	0.42
57	4.75	2.40	0.652	0.205	---	0.45
58	4.83	2.40	0.652	0.205	---	0.45
59	4.92	2.50	0.679	0.205	---	0.47
60	5.00	2.60	0.706	0.205	---	0.50
61	5.08	3.10	0.842	0.205	---	0.64
62	5.17	3.60	0.977	0.205	---	0.77
63	5.25	3.90	1.059	0.205	---	0.85
64	5.33	4.20	1.140	0.205	---	0.94
65	5.42	4.70	1.276	0.205	---	1.07
66	5.50	5.60	1.520	0.205	---	1.32
67	5.58	1.90	0.516	0.205	---	0.31
68	5.67	0.90	0.244	0.205	---	0.04
69	5.75	0.60	0.163	0.205	0.147	0.02
70	5.83	0.50	0.136	0.205	0.122	0.01
71	5.92	0.30	0.081	0.205	0.073	0.01
72	6.00	0.20	0.054	0.205	0.049	0.01
Sum =	100.0				Sum =	13.3

Flood volume = Effective rainfall 1.11(In)
times area 196.7(Ac.)/[(In)/(Ft.)] = 18.2(Ac.Ft)
Total soil loss = 1.15(In)
Total soil loss = 18.884(Ac.Ft)
Total rainfall = 2.26(In)
Flood volume = 792840.5 Cubic Feet
Total soil loss = 822579.3 Cubic Feet

Peak flow rate of this hydrograph = 192.617(CFS)

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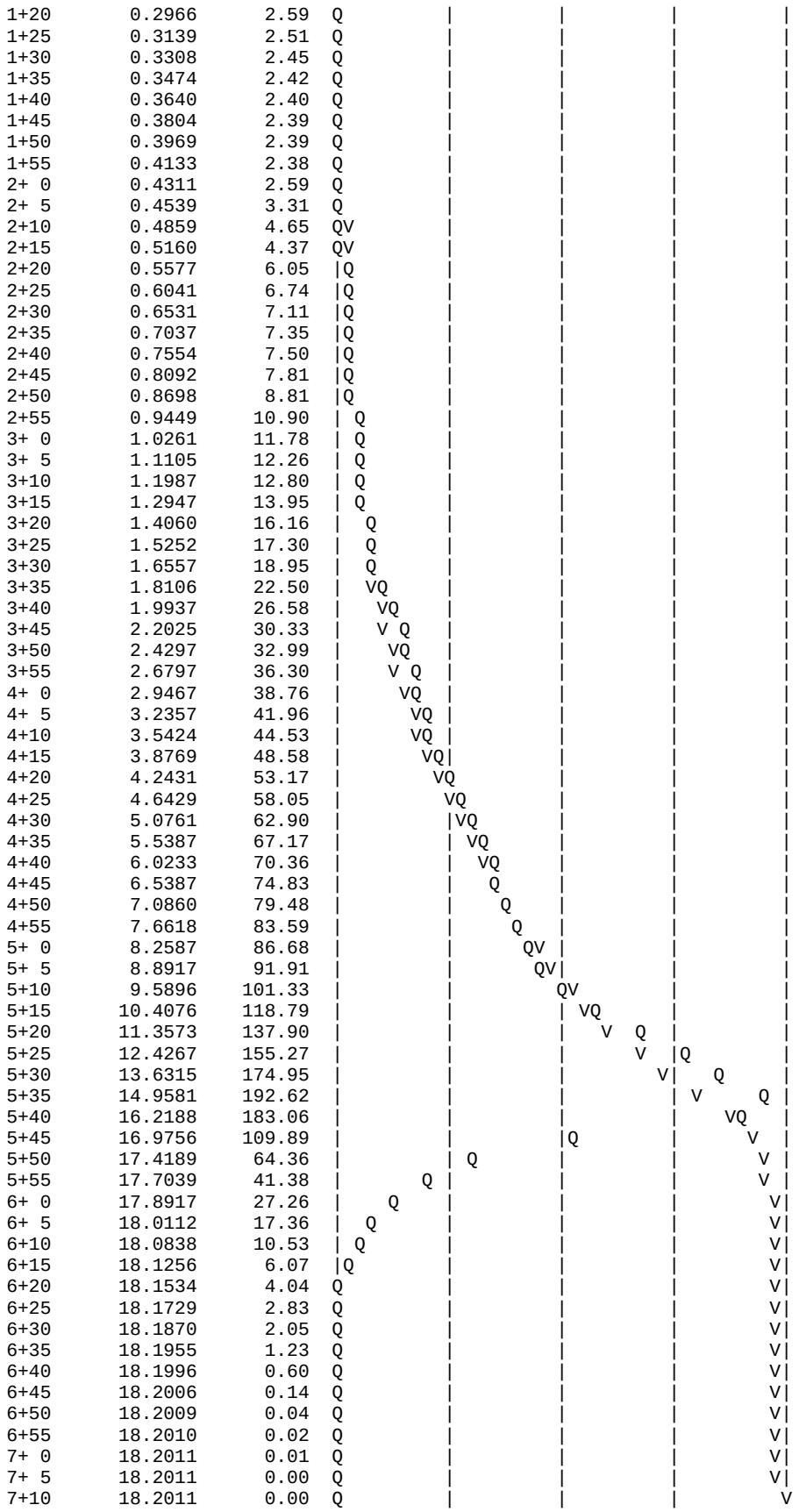
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	50.0	100.0	150.0	200.0
0+ 5	0.0007	0.11	Q	|	|	|	|
0+10	0.0048	0.59	Q	|	|	|	|
0+15	0.0167	1.72	Q	|	|	|	|
0+20	0.0329	2.35	Q	|	|	|	|
0+25	0.0513	2.67	Q	|	|	|	|
0+30	0.0712	2.90	Q	|	|	|	|
0+35	0.0928	3.13	Q	|	|	|	|
0+40	0.1163	3.42	Q	|	|	|	|
0+45	0.1408	3.56	Q	|	|	|	|
0+50	0.1659	3.63	Q	|	|	|	|
0+55	0.1912	3.68	Q	|	|	|	|
1+ 0	0.2164	3.66	Q	|	|	|	|
1+ 5	0.2400	3.44	Q	|	|	|	|
1+10	0.2601	2.92	Q	|	|	|	|
1+15	0.2788	2.71	Q	|	|	|	|



1+20	0.2966	2.59	Q
1+25	0.3139	2.51	Q
1+30	0.3308	2.45	Q
1+35	0.3474	2.42	Q
1+40	0.3640	2.40	Q
1+45	0.3804	2.39	Q
1+50	0.3969	2.39	Q
1+55	0.4133	2.38	Q
2+ 0	0.4311	2.59	Q
2+ 5	0.4539	3.31	Q
2+10	0.4859	4.65	QV
2+15	0.5160	4.37	QV
2+20	0.5577	6.05	|Q
2+25	0.6041	6.74	|Q
2+30	0.6531	7.11	|Q
2+35	0.7037	7.35	|Q
2+40	0.7554	7.50	|Q
2+45	0.8092	7.81	|Q
2+50	0.8698	8.81	|Q
2+55	0.9449	10.90	| Q
3+ 0	1.0261	11.78	| Q
3+ 5	1.1105	12.26	| Q
3+10	1.1987	12.80	| Q
3+15	1.2947	13.95	| Q
3+20	1.4060	16.16	| Q
3+25	1.5252	17.30	| Q
3+30	1.6557	18.95	| Q
3+35	1.8106	22.50	| VQ
3+40	1.9937	26.58	| VQ
3+45	2.2025	30.33	| V Q
3+50	2.4297	32.99	| VQ
3+55	2.6797	36.30	| V Q
4+ 0	2.9467	38.76	| VQ
4+ 5	3.2357	41.96	| VQ
4+10	3.5424	44.53	| VQ
4+15	3.8769	48.58	| VQ|
4+20	4.2431	53.17	| VQ
4+25	4.6429	58.05	| VQ
4+30	5.0761	62.90	| |VQ
4+35	5.5387	67.17	| | VQ
4+40	6.0233	70.36	| | VQ
4+45	6.5387	74.83	| | Q
4+50	7.0860	79.48	| | Q
4+55	7.6618	83.59	| | Q
5+ 0	8.2587	86.68	| | QV
5+ 5	8.8917	91.91	| | QV|
5+10	9.5896	101.33	| | QV
5+15	10.4076	118.79	| | | VQ
5+20	11.3573	137.90	| | | V Q
5+25	12.4267	155.27	| | | V |Q
5+30	13.6315	174.95	| | | V| Q
5+35	14.9581	192.62	| | | | V Q |
5+40	16.2188	183.06	| | | | VQ |
5+45	16.9756	109.89	| | |Q | V |
5+50	17.4189	64.36	| | Q | V |
5+55	17.7039	41.38	| Q | | | V |
6+ 0	17.8917	27.26	| Q | | | V|
6+ 5	18.0112	17.36	| Q | | | V|
6+10	18.0838	10.53	| Q | | | V|
6+15	18.1256	6.07	|Q | | | V|
6+20	18.1534	4.04	Q | | | V|
6+25	18.1729	2.83	Q | | | V|
6+30	18.1870	2.05	Q | | | V|
6+35	18.1955	1.23	Q | | | V|
6+40	18.1996	0.60	Q | | | V|
6+45	18.2006	0.14	Q | | | V|
6+50	18.2009	0.04	Q | | | V|
6+55	18.2010	0.02	Q | | | V|
7+ 0	18.2011	0.01	Q | | | V|
7+ 5	18.2011	0.00	Q | | | V|
7+10	18.2011	0.00	Q | | | V

10-YEAR, 24-HOUR

U n i t H y d r o g r a p h A n a l y s i s

Study date 11/19/11 File: ARAP2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6045

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

SCE ALBERHILL SUBSTATION POST-PROJECT CONDITION HYDROLOGY
AREA TRIBUTARY TO BASIN "A"
UNIT HYDROGRAPH ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARAP

Drainage Area = 196.70(Ac.) = 0.307 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 196.70(Ac.) = 0.307 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.176 Hr.
Lag time = 10.56 Min.
25% of lag time = 2.64 Min.
40% of lag time = 4.22 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	2.50	491.75

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
196.70	6.50	1278.55

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.96 %
Adjusted average point rain = 4.144(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
196.700	83.40	0.000

Total Area Entered = 196.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.4	83.4	0.205	0.000	0.205	1.000	0.205
					Sum (F) =	0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205
Minimum soil loss rate ((In/Hr)) = 0.103
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	47.348	3.964	7.858
2	0.167	94.697	17.320	34.334
3	0.250	142.045	38.354	76.032
4	0.333	189.394	15.822	31.365
5	0.417	236.742	8.739	17.325
6	0.500	284.091	5.742	11.383
7	0.583	331.439	3.906	7.743
8	0.667	378.788	2.526	5.008
9	0.750	426.136	1.480	2.934
10	0.833	473.485	0.633	1.254
11	0.917	520.833	0.467	0.926
12	1.000	568.182	0.321	0.636
13	1.083	615.530	0.351	0.695
14	1.167	662.879	0.229	0.453
15	1.250	710.227	0.147	0.291
		Sum = 100.000	Sum=	198.237

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	0.364	0.030	0.00
2	0.17	0.07	0.033	0.362	0.030	0.00
3	0.25	0.07	0.033	0.361	0.030	0.00
4	0.33	0.10	0.050	0.360	0.045	0.00
5	0.42	0.10	0.050	0.358	0.045	0.00
6	0.50	0.10	0.050	0.357	0.045	0.00
7	0.58	0.10	0.050	0.355	0.045	0.00
8	0.67	0.10	0.050	0.354	0.045	0.00
9	0.75	0.10	0.050	0.353	0.045	0.00
10	0.83	0.13	0.066	0.351	0.060	0.01
11	0.92	0.13	0.066	0.350	0.060	0.01
12	1.00	0.13	0.066	0.349	0.060	0.01
13	1.08	0.10	0.050	0.347	0.045	0.00
14	1.17	0.10	0.050	0.346	0.045	0.00
15	1.25	0.10	0.050	0.344	0.045	0.00
16	1.33	0.10	0.050	0.343	0.045	0.00
17	1.42	0.10	0.050	0.342	0.045	0.00
18	1.50	0.10	0.050	0.340	0.045	0.00
19	1.58	0.10	0.050	0.339	0.045	0.00
20	1.67	0.10	0.050	0.338	0.045	0.00
21	1.75	0.10	0.050	0.336	0.045	0.00
22	1.83	0.13	0.066	0.335	0.060	0.01
23	1.92	0.13	0.066	0.334	0.060	0.01
24	2.00	0.13	0.066	0.332	0.060	0.01
25	2.08	0.13	0.066	0.331	0.060	0.01
26	2.17	0.13	0.066	0.329	0.060	0.01
27	2.25	0.13	0.066	0.328	0.060	0.01
28	2.33	0.13	0.066	0.327	0.060	0.01
29	2.42	0.13	0.066	0.325	0.060	0.01
30	2.50	0.13	0.066	0.324	0.060	0.01
31	2.58	0.17	0.083	0.323	0.075	0.01
32	2.67	0.17	0.083	0.321	0.075	0.01
33	2.75	0.17	0.083	0.320	0.075	0.01
34	2.83	0.17	0.083	0.319	0.075	0.01
35	2.92	0.17	0.083	0.318	0.075	0.01
36	3.00	0.17	0.083	0.316	0.075	0.01

37	3.08	0.17	0.083	0.315	0.075	0.01
38	3.17	0.17	0.083	0.314	0.075	0.01
39	3.25	0.17	0.083	0.312	0.075	0.01
40	3.33	0.17	0.083	0.311	0.075	0.01
41	3.42	0.17	0.083	0.310	0.075	0.01
42	3.50	0.17	0.083	0.308	0.075	0.01
43	3.58	0.17	0.083	0.307	0.075	0.01
44	3.67	0.17	0.083	0.306	0.075	0.01
45	3.75	0.17	0.083	0.305	0.075	0.01
46	3.83	0.20	0.099	0.303	0.090	0.01
47	3.92	0.20	0.099	0.302	0.090	0.01
48	4.00	0.20	0.099	0.301	0.090	0.01
49	4.08	0.20	0.099	0.299	0.090	0.01
50	4.17	0.20	0.099	0.298	0.090	0.01
51	4.25	0.20	0.099	0.297	0.090	0.01
52	4.33	0.23	0.116	0.296	0.104	0.01
53	4.42	0.23	0.116	0.294	0.104	0.01
54	4.50	0.23	0.116	0.293	0.104	0.01
55	4.58	0.23	0.116	0.292	0.104	0.01
56	4.67	0.23	0.116	0.291	0.104	0.01
57	4.75	0.23	0.116	0.289	0.104	0.01
58	4.83	0.27	0.133	0.288	0.119	0.01
59	4.92	0.27	0.133	0.287	0.119	0.01
60	5.00	0.27	0.133	0.286	0.119	0.01
61	5.08	0.20	0.099	0.284	0.090	0.01
62	5.17	0.20	0.099	0.283	0.090	0.01
63	5.25	0.20	0.099	0.282	0.090	0.01
64	5.33	0.23	0.116	0.281	0.104	0.01
65	5.42	0.23	0.116	0.279	0.104	0.01
66	5.50	0.23	0.116	0.278	0.104	0.01
67	5.58	0.27	0.133	0.277	0.119	0.01
68	5.67	0.27	0.133	0.276	0.119	0.01
69	5.75	0.27	0.133	0.275	0.119	0.01
70	5.83	0.27	0.133	0.273	0.119	0.01
71	5.92	0.27	0.133	0.272	0.119	0.01
72	6.00	0.27	0.133	0.271	0.119	0.01
73	6.08	0.30	0.149	0.270	0.134	0.01
74	6.17	0.30	0.149	0.269	0.134	0.01
75	6.25	0.30	0.149	0.267	0.134	0.01
76	6.33	0.30	0.149	0.266	0.134	0.01
77	6.42	0.30	0.149	0.265	0.134	0.01
78	6.50	0.30	0.149	0.264	0.134	0.01
79	6.58	0.33	0.166	0.263	0.149	0.02
80	6.67	0.33	0.166	0.261	0.149	0.02
81	6.75	0.33	0.166	0.260	0.149	0.02
82	6.83	0.33	0.166	0.259	0.149	0.02
83	6.92	0.33	0.166	0.258	0.149	0.02
84	7.00	0.33	0.166	0.257	0.149	0.02
85	7.08	0.33	0.166	0.256	0.149	0.02
86	7.17	0.33	0.166	0.254	0.149	0.02
87	7.25	0.33	0.166	0.253	0.149	0.02
88	7.33	0.37	0.182	0.252	0.164	0.02
89	7.42	0.37	0.182	0.251	0.164	0.02
90	7.50	0.37	0.182	0.250	0.164	0.02
91	7.58	0.40	0.199	0.249	0.179	0.02
92	7.67	0.40	0.199	0.247	0.179	0.02
93	7.75	0.40	0.199	0.246	0.179	0.02
94	7.83	0.43	0.215	0.245	0.194	0.02
95	7.92	0.43	0.215	0.244	0.194	0.02
96	8.00	0.43	0.215	0.243	0.194	0.02
97	8.08	0.50	0.249	0.242	---	0.01
98	8.17	0.50	0.249	0.241	---	0.01
99	8.25	0.50	0.249	0.240	---	0.01
100	8.33	0.50	0.249	0.238	---	0.01
101	8.42	0.50	0.249	0.237	---	0.01
102	8.50	0.50	0.249	0.236	---	0.01
103	8.58	0.53	0.265	0.235	---	0.03
104	8.67	0.53	0.265	0.234	---	0.03
105	8.75	0.53	0.265	0.233	---	0.03
106	8.83	0.57	0.282	0.232	---	0.05
107	8.92	0.57	0.282	0.231	---	0.05

108	9.00	0.57	0.282	0.230	---	0.05
109	9.08	0.63	0.315	0.228	---	0.09
110	9.17	0.63	0.315	0.227	---	0.09
111	9.25	0.63	0.315	0.226	---	0.09
112	9.33	0.67	0.332	0.225	---	0.11
113	9.42	0.67	0.332	0.224	---	0.11
114	9.50	0.67	0.332	0.223	---	0.11
115	9.58	0.70	0.348	0.222	---	0.13
116	9.67	0.70	0.348	0.221	---	0.13
117	9.75	0.70	0.348	0.220	---	0.13
118	9.83	0.73	0.365	0.219	---	0.15
119	9.92	0.73	0.365	0.218	---	0.15
120	10.00	0.73	0.365	0.217	---	0.15
121	10.08	0.50	0.249	0.216	---	0.03
122	10.17	0.50	0.249	0.215	---	0.03
123	10.25	0.50	0.249	0.214	---	0.04
124	10.33	0.50	0.249	0.213	---	0.04
125	10.42	0.50	0.249	0.212	---	0.04
126	10.50	0.50	0.249	0.210	---	0.04
127	10.58	0.67	0.332	0.209	---	0.12
128	10.67	0.67	0.332	0.208	---	0.12
129	10.75	0.67	0.332	0.207	---	0.12
130	10.83	0.67	0.332	0.206	---	0.13
131	10.92	0.67	0.332	0.205	---	0.13
132	11.00	0.67	0.332	0.204	---	0.13
133	11.08	0.63	0.315	0.203	---	0.11
134	11.17	0.63	0.315	0.202	---	0.11
135	11.25	0.63	0.315	0.201	---	0.11
136	11.33	0.63	0.315	0.200	---	0.11
137	11.42	0.63	0.315	0.199	---	0.12
138	11.50	0.63	0.315	0.198	---	0.12
139	11.58	0.57	0.282	0.197	---	0.08
140	11.67	0.57	0.282	0.196	---	0.09
141	11.75	0.57	0.282	0.195	---	0.09
142	11.83	0.60	0.298	0.194	---	0.10
143	11.92	0.60	0.298	0.194	---	0.10
144	12.00	0.60	0.298	0.193	---	0.11
145	12.08	0.83	0.414	0.192	---	0.22
146	12.17	0.83	0.414	0.191	---	0.22
147	12.25	0.83	0.414	0.190	---	0.22
148	12.33	0.87	0.431	0.189	---	0.24
149	12.42	0.87	0.431	0.188	---	0.24
150	12.50	0.87	0.431	0.187	---	0.24
151	12.58	0.93	0.464	0.186	---	0.28
152	12.67	0.93	0.464	0.185	---	0.28
153	12.75	0.93	0.464	0.184	---	0.28
154	12.83	0.97	0.481	0.183	---	0.30
155	12.92	0.97	0.481	0.182	---	0.30
156	13.00	0.97	0.481	0.181	---	0.30
157	13.08	1.13	0.564	0.180	---	0.38
158	13.17	1.13	0.564	0.179	---	0.38
159	13.25	1.13	0.564	0.178	---	0.39
160	13.33	1.13	0.564	0.178	---	0.39
161	13.42	1.13	0.564	0.177	---	0.39
162	13.50	1.13	0.564	0.176	---	0.39
163	13.58	0.77	0.381	0.175	---	0.21
164	13.67	0.77	0.381	0.174	---	0.21
165	13.75	0.77	0.381	0.173	---	0.21
166	13.83	0.77	0.381	0.172	---	0.21
167	13.92	0.77	0.381	0.171	---	0.21
168	14.00	0.77	0.381	0.170	---	0.21
169	14.08	0.90	0.448	0.170	---	0.28
170	14.17	0.90	0.448	0.169	---	0.28
171	14.25	0.90	0.448	0.168	---	0.28
172	14.33	0.87	0.431	0.167	---	0.26
173	14.42	0.87	0.431	0.166	---	0.26
174	14.50	0.87	0.431	0.165	---	0.27
175	14.58	0.87	0.431	0.164	---	0.27
176	14.67	0.87	0.431	0.164	---	0.27
177	14.75	0.87	0.431	0.163	---	0.27
178	14.83	0.83	0.414	0.162	---	0.25

179	14.92	0.83	0.414	0.161	---	0.25
180	15.00	0.83	0.414	0.160	---	0.25
181	15.08	0.80	0.398	0.159	---	0.24
182	15.17	0.80	0.398	0.159	---	0.24
183	15.25	0.80	0.398	0.158	---	0.24
184	15.33	0.77	0.381	0.157	---	0.22
185	15.42	0.77	0.381	0.156	---	0.23
186	15.50	0.77	0.381	0.155	---	0.23
187	15.58	0.63	0.315	0.155	---	0.16
188	15.67	0.63	0.315	0.154	---	0.16
189	15.75	0.63	0.315	0.153	---	0.16
190	15.83	0.63	0.315	0.152	---	0.16
191	15.92	0.63	0.315	0.151	---	0.16
192	16.00	0.63	0.315	0.151	---	0.16
193	16.08	0.13	0.066	0.150	0.060	0.01
194	16.17	0.13	0.066	0.149	0.060	0.01
195	16.25	0.13	0.066	0.148	0.060	0.01
196	16.33	0.13	0.066	0.148	0.060	0.01
197	16.42	0.13	0.066	0.147	0.060	0.01
198	16.50	0.13	0.066	0.146	0.060	0.01
199	16.58	0.10	0.050	0.145	0.045	0.00
200	16.67	0.10	0.050	0.145	0.045	0.00
201	16.75	0.10	0.050	0.144	0.045	0.00
202	16.83	0.10	0.050	0.143	0.045	0.00
203	16.92	0.10	0.050	0.142	0.045	0.00
204	17.00	0.10	0.050	0.142	0.045	0.00
205	17.08	0.17	0.083	0.141	0.075	0.01
206	17.17	0.17	0.083	0.140	0.075	0.01
207	17.25	0.17	0.083	0.140	0.075	0.01
208	17.33	0.17	0.083	0.139	0.075	0.01
209	17.42	0.17	0.083	0.138	0.075	0.01
210	17.50	0.17	0.083	0.138	0.075	0.01
211	17.58	0.17	0.083	0.137	0.075	0.01
212	17.67	0.17	0.083	0.136	0.075	0.01
213	17.75	0.17	0.083	0.135	0.075	0.01
214	17.83	0.13	0.066	0.135	0.060	0.01
215	17.92	0.13	0.066	0.134	0.060	0.01
216	18.00	0.13	0.066	0.133	0.060	0.01
217	18.08	0.13	0.066	0.133	0.060	0.01
218	18.17	0.13	0.066	0.132	0.060	0.01
219	18.25	0.13	0.066	0.132	0.060	0.01
220	18.33	0.13	0.066	0.131	0.060	0.01
221	18.42	0.13	0.066	0.130	0.060	0.01
222	18.50	0.13	0.066	0.130	0.060	0.01
223	18.58	0.10	0.050	0.129	0.045	0.00
224	18.67	0.10	0.050	0.128	0.045	0.00
225	18.75	0.10	0.050	0.128	0.045	0.00
226	18.83	0.07	0.033	0.127	0.030	0.00
227	18.92	0.07	0.033	0.127	0.030	0.00
228	19.00	0.07	0.033	0.126	0.030	0.00
229	19.08	0.10	0.050	0.125	0.045	0.00
230	19.17	0.10	0.050	0.125	0.045	0.00
231	19.25	0.10	0.050	0.124	0.045	0.00
232	19.33	0.13	0.066	0.124	0.060	0.01
233	19.42	0.13	0.066	0.123	0.060	0.01
234	19.50	0.13	0.066	0.122	0.060	0.01
235	19.58	0.10	0.050	0.122	0.045	0.00
236	19.67	0.10	0.050	0.121	0.045	0.00
237	19.75	0.10	0.050	0.121	0.045	0.00
238	19.83	0.07	0.033	0.120	0.030	0.00
239	19.92	0.07	0.033	0.120	0.030	0.00
240	20.00	0.07	0.033	0.119	0.030	0.00
241	20.08	0.10	0.050	0.119	0.045	0.00
242	20.17	0.10	0.050	0.118	0.045	0.00
243	20.25	0.10	0.050	0.118	0.045	0.00
244	20.33	0.10	0.050	0.117	0.045	0.00
245	20.42	0.10	0.050	0.117	0.045	0.00
246	20.50	0.10	0.050	0.116	0.045	0.00
247	20.58	0.10	0.050	0.116	0.045	0.00
248	20.67	0.10	0.050	0.115	0.045	0.00
249	20.75	0.10	0.050	0.115	0.045	0.00

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250  20.83     0.07      0.033         0.114     0.030         0.00
251  20.92     0.07      0.033         0.114     0.030         0.00
252  21.00     0.07      0.033         0.113     0.030         0.00
253  21.08     0.10      0.050         0.113     0.045         0.00
254  21.17     0.10      0.050         0.112     0.045         0.00
255  21.25     0.10      0.050         0.112     0.045         0.00
256  21.33     0.07      0.033         0.112     0.030         0.00
257  21.42     0.07      0.033         0.111     0.030         0.00
258  21.50     0.07      0.033         0.111     0.030         0.00
259  21.58     0.10      0.050         0.110     0.045         0.00
260  21.67     0.10      0.050         0.110     0.045         0.00
261  21.75     0.10      0.050         0.109     0.045         0.00
262  21.83     0.07      0.033         0.109     0.030         0.00
263  21.92     0.07      0.033         0.109     0.030         0.00
264  22.00     0.07      0.033         0.108     0.030         0.00
265  22.08     0.10      0.050         0.108     0.045         0.00
266  22.17     0.10      0.050         0.108     0.045         0.00
267  22.25     0.10      0.050         0.107     0.045         0.00
268  22.33     0.07      0.033         0.107     0.030         0.00
269  22.42     0.07      0.033         0.107     0.030         0.00
270  22.50     0.07      0.033         0.106     0.030         0.00
271  22.58     0.07      0.033         0.106     0.030         0.00
272  22.67     0.07      0.033         0.106     0.030         0.00
273  22.75     0.07      0.033         0.105     0.030         0.00
274  22.83     0.07      0.033         0.105     0.030         0.00
275  22.92     0.07      0.033         0.105     0.030         0.00
276  23.00     0.07      0.033         0.105     0.030         0.00
277  23.08     0.07      0.033         0.104     0.030         0.00
278  23.17     0.07      0.033         0.104     0.030         0.00
279  23.25     0.07      0.033         0.104     0.030         0.00
280  23.33     0.07      0.033         0.104     0.030         0.00
281  23.42     0.07      0.033         0.104     0.030         0.00
282  23.50     0.07      0.033         0.103     0.030         0.00
283  23.58     0.07      0.033         0.103     0.030         0.00
284  23.67     0.07      0.033         0.103     0.030         0.00
285  23.75     0.07      0.033         0.103     0.030         0.00
286  23.83     0.07      0.033         0.103     0.030         0.00
287  23.92     0.07      0.033         0.103     0.030         0.00
288  24.00     0.07      0.033         0.103     0.030         0.00
    Sum =     100.0                                    Sum =    17.7
      Flood volume = Effective rainfall      1.47(In)
       times area     196.7(Ac.)/[(In)/(Ft.)] =      24.2(Ac.Ft)
      Total soil loss =      2.67(In)
      Total soil loss =    43.774(Ac.Ft)
      Total rainfall =      4.14(In)
      Flood volume =     1052138.6 Cubic Feet
      Total soil loss =     1906792.7 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     74.639(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
 ------------------------------------------------------------------------
   0+ 5       0.0002      0.03  Q         |         |         |         |
   0+10       0.0011      0.14  Q         |         |         |         |
   0+15       0.0038      0.39  Q         |         |         |         |
   0+20       0.0074      0.51  Q         |         |         |         |
   0+25       0.0116      0.62  Q         |         |         |         |
   0+30       0.0171      0.79  Q         |         |         |         |
   0+35       0.0230      0.87  Q         |         |         |         |
   0+40       0.0293      0.91  Q         |         |         |         |
   0+45       0.0358      0.94  Q         |         |         |         |
   0+50       0.0424      0.97  Q         |         |         |         |
   0+55       0.0496      1.04  Q         |         |         |         |
   1+ 0       0.0576      1.17  Q         |         |         |         |
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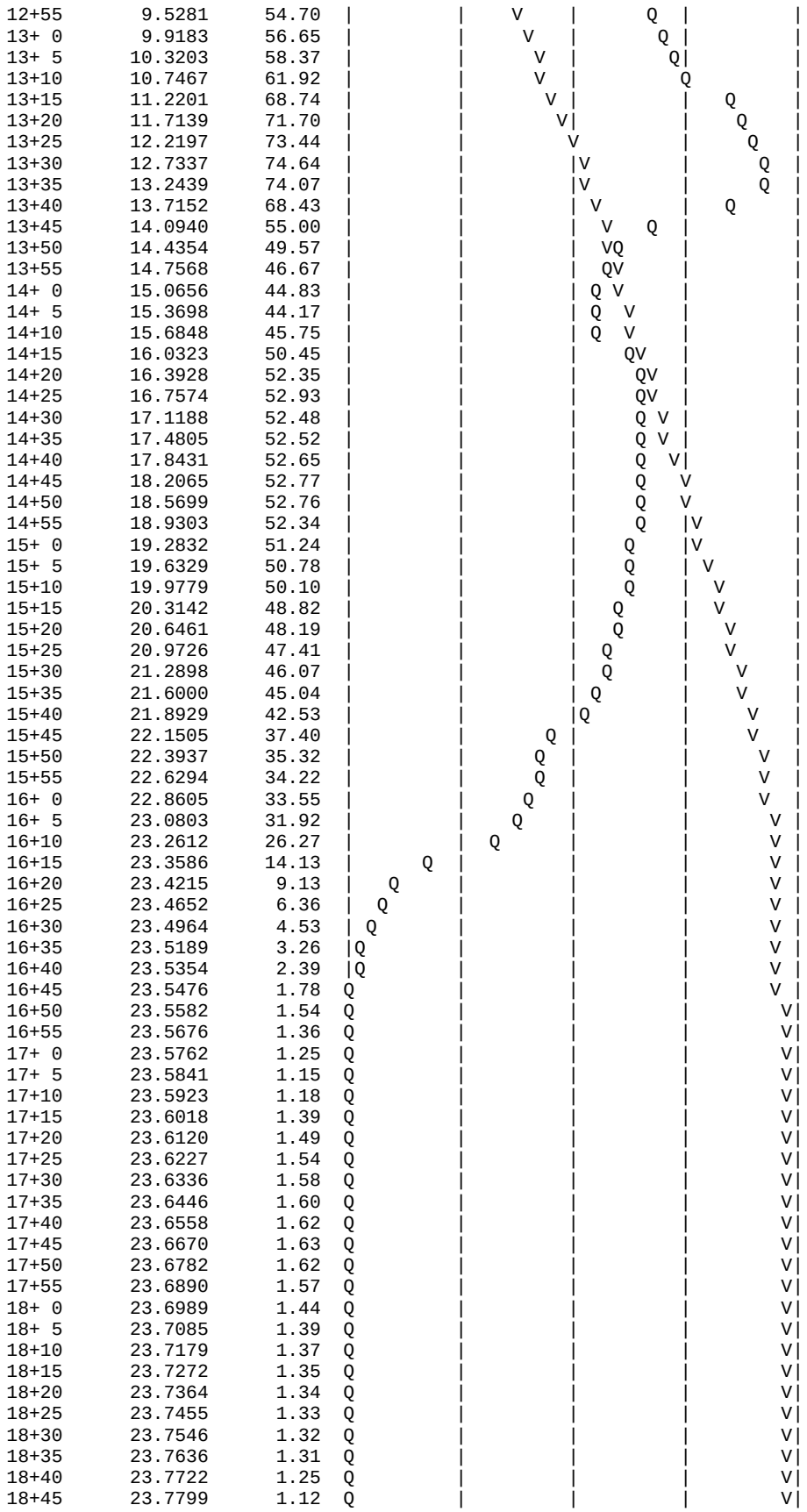
1+ 5	0.0660	1.21	Q	|	|	|	|
1+10	0.0742	1.19	Q	|	|	|	|
1+15	0.0817	1.08	Q	|	|	|	|
1+20	0.0889	1.05	Q	|	|	|	|
1+25	0.0959	1.03	Q	|	|	|	|
1+30	0.1029	1.01	Q	|	|	|	|
1+35	0.1098	1.00	Q	|	|	|	|
1+40	0.1166	0.99	Q	|	|	|	|
1+45	0.1235	0.99	Q	|	|	|	|
1+50	0.1304	1.00	Q	|	|	|	|
1+55	0.1377	1.06	Q	|	|	|	|
2+ 0	0.1458	1.18	Q	|	|	|	|
2+ 5	0.1543	1.24	Q	|	|	|	|
2+10	0.1630	1.26	Q	|	|	|	|
2+15	0.1719	1.28	Q	|	|	|	|
2+20	0.1808	1.29	Q	|	|	|	|
2+25	0.1898	1.30	Q	|	|	|	|
2+30	0.1988	1.31	Q	|	|	|	|
2+35	0.2079	1.32	Q	|	|	|	|
2+40	0.2174	1.38	Q	|	|	|	|
2+45	0.2278	1.51	Q	|	|	|	|
2+50	0.2386	1.56	Q	|	|	|	|
2+55	0.2495	1.59	Q	|	|	|	|
3+ 0	0.2606	1.61	Q	|	|	|	|
3+ 5	0.2718	1.62	Q	|	|	|	|
3+10	0.2830	1.63	Q	|	|	|	|
3+15	0.2943	1.64	Q	|	|	|	|
3+20	0.3056	1.64	Q	|	|	|	|
3+25	0.3169	1.64	Q	|	|	|	|
3+30	0.3282	1.64	Q	|	|	|	|
3+35	0.3395	1.64	Q	|	|	|	|
3+40	0.3508	1.64	Q	|	|	|	|
3+45	0.3621	1.64	Q	|	|	|	|
3+50	0.3736	1.66	Q	|	|	|	|
3+55	0.3854	1.71	Q	|	|	|	|
4+ 0	0.3980	1.84	Q	|	|	|	|
4+ 5	0.4111	1.89	Q	|	|	|	|
4+10	0.4243	1.92	Q	|	|	|	|
4+15	0.4376	1.94	Q	|	|	|	|
4+20	0.4512	1.97	Q	|	|	|	|
4+25	0.4652	2.03	VQ	|	|	|	|
4+30	0.4800	2.16	VQ	|	|	|	|
4+35	0.4953	2.22	VQ	|	|	|	|
4+40	0.5108	2.25	VQ	|	|	|	|
4+45	0.5264	2.27	VQ	|	|	|	|
4+50	0.5422	2.29	VQ	|	|	|	|
4+55	0.5584	2.36	VQ	|	|	|	|
5+ 0	0.5756	2.49	VQ	|	|	|	|
5+ 5	0.5929	2.52	VQ	|	|	|	|
5+10	0.6097	2.43	|Q	|	|	|	|
5+15	0.6249	2.20	|Q	|	|	|	|
5+20	0.6395	2.13	|Q	|	|	|	|
5+25	0.6542	2.13	|Q	|	|	|	|
5+30	0.6695	2.23	|Q	|	|	|	|
5+35	0.6852	2.27	|Q	|	|	|	|
5+40	0.7013	2.34	|Q	|	|	|	|
5+45	0.7183	2.48	|Q	|	|	|	|
5+50	0.7358	2.54	|Q	|	|	|	|
5+55	0.7535	2.57	|Q	|	|	|	|
6+ 0	0.7714	2.59	|Q	|	|	|	|
6+ 5	0.7894	2.62	|Q	|	|	|	|
6+10	0.8079	2.69	|Q	|	|	|	|
6+15	0.8273	2.82	|Q	|	|	|	|
6+20	0.8471	2.87	|Q	|	|	|	|
6+25	0.8671	2.90	|Q	|	|	|	|
6+30	0.8872	2.92	|Q	|	|	|	|
6+35	0.9076	2.95	|Q	|	|	|	|
6+40	0.9283	3.02	|Q	|	|	|	|
6+45	0.9500	3.15	|Q	|	|	|	|
6+50	0.9721	3.20	|Q	|	|	|	|
6+55	0.9943	3.23	|Q	|	|	|	|

7+ 0	1.0167	3.25	Q			
7+ 5	1.0392	3.27	Q			
7+10	1.0618	3.28	Q			
7+15	1.0844	3.28	Q			
7+20	1.1071	3.30	Q			
7+25	1.1302	3.35	Q			
7+30	1.1542	3.48	Q			
7+35	1.1786	3.55	Q			
7+40	1.2036	3.63	Q			
7+45	1.2296	3.78	QV			
7+50	1.2562	3.86	QV			
7+55	1.2834	3.95	QV			
8+ 0	1.3117	4.10	Q			
8+ 5	1.3396	4.05	Q			
8+10	1.3644	3.60	QV			
8+15	1.3819	2.55	QV			
8+20	1.3974	2.24	QV			
8+25	1.4123	2.16	QV			
8+30	1.4274	2.19	QV			
8+35	1.4440	2.41	QV			
8+40	1.4654	3.12	QV			
8+45	1.4967	4.55	Q			
8+50	1.5339	5.40	Q			
8+55	1.5783	6.45	VQ			
9+ 0	1.6342	8.11	V Q			
9+ 5	1.6977	9.23	V Q			
9+10	1.7731	10.95	V Q			
9+15	1.8690	13.92	V Q			
9+20	1.9754	15.45	V Q			
9+25	2.0919	16.91	V Q			
9+30	2.2215	18.82	V Q			
9+35	2.3591	19.98	V Q			
9+40	2.5053	21.23	V Q			
9+45	2.6638	23.01	V Q			
9+50	2.8294	24.05	V Q			
9+55	3.0033	25.24	V Q			
10+ 0	3.1891	26.98	V Q			
10+ 5	3.3748	26.97	V Q			
10+10	3.5373	23.59	V Q			
10+15	3.6421	15.23	VQ			
10+20	3.7245	11.96	QV			
10+25	3.7951	10.26	QV			
10+30	3.8586	9.21	Q V			
10+35	3.9219	9.20	Q V			
10+40	4.0024	11.69	QV			
10+45	4.1256	17.88	V Q			
10+50	4.2671	20.55	V Q			
10+55	4.4192	22.09	V Q			
11+ 0	4.5787	23.16	V Q			
11+ 5	4.7426	23.80	V Q			
11+10	4.9064	23.79	V Q			
11+15	5.0644	22.94	V Q			
11+20	5.2209	22.72	V Q			
11+25	5.3773	22.71	V Q			
11+30	5.5341	22.77	V Q			
11+35	5.6900	22.64	V Q			
11+40	5.8391	21.65	VQ			
11+45	5.9721	19.30	Q			
11+50	6.0999	18.56	QV			
11+55	6.2290	18.74	QV			
12+ 0	6.3653	19.80	QV			
12+ 5	6.5111	21.16	Q			
12+10	6.6864	25.45	VQ			
12+15	6.9244	34.56	V Q			
12+20	7.1903	38.61	V Q			
12+25	7.4756	41.43	V Q			
12+30	7.7802	44.23	V Q			
12+35	8.0977	46.10	V Q			
12+40	8.4303	48.29	V Q			
12+45	8.7852	51.53	V Q			
12+50	9.1514	53.17	V Q			



12+55	9.5281	54.70	
13+ 0	9.9183	56.65	
13+ 5	10.3203	58.37	
13+10	10.7467	61.92	
13+15	11.2201	68.74	
13+20	11.7139	71.70	
13+25	12.2197	73.44	
13+30	12.7337	74.64	
13+35	13.2439	74.07	
13+40	13.7152	68.43	
13+45	14.0940	55.00	
13+50	14.4354	49.57	
13+55	14.7568	46.67	
14+ 0	15.0656	44.83	
14+ 5	15.3698	44.17	
14+10	15.6848	45.75	
14+15	16.0323	50.45	
14+20	16.3928	52.35	
14+25	16.7574	52.93	
14+30	17.1188	52.48	
14+35	17.4805	52.52	
14+40	17.8431	52.65	
14+45	18.2065	52.77	
14+50	18.5699	52.76	
14+55	18.9303	52.34	
15+ 0	19.2832	51.24	
15+ 5	19.6329	50.78	
15+10	19.9779	50.10	
15+15	20.3142	48.82	
15+20	20.6461	48.19	
15+25	20.9726	47.41	
15+30	21.2898	46.07	
15+35	21.6000	45.04	
15+40	21.8929	42.53	
15+45	22.1505	37.40	
15+50	22.3937	35.32	
15+55	22.6294	34.22	
16+ 0	22.8605	33.55	
16+ 5	23.0803	31.92	
16+10	23.2612	26.27	
16+15	23.3586	14.13	
16+20	23.4215	9.13	
16+25	23.4652	6.36	
16+30	23.4964	4.53	
16+35	23.5189	3.26	
16+40	23.5354	2.39	
16+45	23.5476	1.78	
16+50	23.5582	1.54	
16+55	23.5676	1.36	
17+ 0	23.5762	1.25	
17+ 5	23.5841	1.15	
17+10	23.5923	1.18	
17+15	23.6018	1.39	
17+20	23.6120	1.49	
17+25	23.6227	1.54	
17+30	23.6336	1.58	
17+35	23.6446	1.60	
17+40	23.6558	1.62	
17+45	23.6670	1.63	
17+50	23.6782	1.62	
17+55	23.6890	1.57	
18+ 0	23.6989	1.44	
18+ 5	23.7085	1.39	
18+10	23.7179	1.37	
18+15	23.7272	1.35	
18+20	23.7364	1.34	
18+25	23.7455	1.33	
18+30	23.7546	1.32	
18+35	23.7636	1.31	
18+40	23.7722	1.25	
18+45	23.7799	1.12	

18+50	23.7872	1.06	Q	|	|	|	V|
18+55	23.7939	0.97	Q	|	|	|	V|
19+ 0	23.7996	0.82	Q	|	|	|	V|
19+ 5	23.8049	0.77	Q	|	|	|	V|
19+10	23.8103	0.79	Q	|	|	|	V|
19+15	23.8165	0.89	Q	|	|	|	V|
19+20	23.8230	0.94	Q	|	|	|	V|
19+25	23.8300	1.02	Q	|	|	|	V|
19+30	23.8380	1.16	Q	|	|	|	V|
19+35	23.8463	1.21	Q	|	|	|	V|
19+40	23.8545	1.19	Q	|	|	|	V|
19+45	23.8619	1.08	Q	|	|	|	V|
19+50	23.8690	1.03	Q	|	|	|	V|
19+55	23.8756	0.95	Q	|	|	|	V|
20+ 0	23.8812	0.81	Q	|	|	|	V|
20+ 5	23.8864	0.77	Q	|	|	|	V|
20+10	23.8919	0.79	Q	|	|	|	V|
20+15	23.8980	0.89	Q	|	|	|	V|
20+20	23.9044	0.93	Q	|	|	|	V|
20+25	23.9109	0.95	Q	|	|	|	V|
20+30	23.9176	0.96	Q	|	|	|	V|
20+35	23.9243	0.97	Q	|	|	|	V|
20+40	23.9310	0.98	Q	|	|	|	V|
20+45	23.9378	0.98	Q	|	|	|	V|
20+50	23.9444	0.97	Q	|	|	|	V|
20+55	23.9507	0.91	Q	|	|	|	V|
21+ 0	23.9562	0.79	Q	|	|	|	V|
21+ 5	23.9613	0.75	Q	|	|	|	V|
21+10	23.9667	0.78	Q	|	|	|	V|
21+15	23.9728	0.89	Q	|	|	|	V|
21+20	23.9791	0.91	Q	|	|	|	V|
21+25	23.9851	0.88	Q	|	|	|	V|
21+30	23.9904	0.76	Q	|	|	|	V|
21+35	23.9954	0.74	Q	|	|	|	V|
21+40	24.0008	0.77	Q	|	|	|	V|
21+45	24.0068	0.88	Q	|	|	|	V|
21+50	24.0131	0.91	Q	|	|	|	V|
21+55	24.0191	0.87	Q	|	|	|	V|
22+ 0	24.0244	0.76	Q	|	|	|	V|
22+ 5	24.0294	0.73	Q	|	|	|	V|
22+10	24.0347	0.77	Q	|	|	|	V|
22+15	24.0408	0.88	Q	|	|	|	V|
22+20	24.0471	0.91	Q	|	|	|	V|
22+25	24.0531	0.87	Q	|	|	|	V|
22+30	24.0583	0.76	Q	|	|	|	V|
22+35	24.0633	0.72	Q	|	|	|	V|
22+40	24.0681	0.70	Q	|	|	|	V|
22+45	24.0728	0.69	Q	|	|	|	V|
22+50	24.0775	0.67	Q	|	|	|	V|
22+55	24.0821	0.67	Q	|	|	|	V|
23+ 0	24.0866	0.66	Q	|	|	|	V|
23+ 5	24.0912	0.66	Q	|	|	|	V|
23+10	24.0957	0.66	Q	|	|	|	V|
23+15	24.1003	0.66	Q	|	|	|	V|
23+20	24.1048	0.66	Q	|	|	|	V|
23+25	24.1093	0.66	Q	|	|	|	V|
23+30	24.1139	0.66	Q	|	|	|	V|
23+35	24.1184	0.66	Q	|	|	|	V|
23+40	24.1229	0.66	Q	|	|	|	V|
23+45	24.1275	0.66	Q	|	|	|	V|
23+50	24.1320	0.66	Q	|	|	|	V|
23+55	24.1365	0.66	Q	|	|	|	V|
24+ 0	24.1410	0.66	Q	|	|	|	V|
24+ 5	24.1454	0.63	Q	|	|	|	V|
24+10	24.1490	0.52	Q	|	|	|	V|
24+15	24.1508	0.27	Q	|	|	|	V|
24+20	24.1519	0.16	Q	|	|	|	V|
24+25	24.1526	0.10	Q	|	|	|	V|
24+30	24.1531	0.07	Q	|	|	|	V|
24+35	24.1533	0.04	Q	|	|	|	V|
24+40	24.1535	0.02	Q	|	|	|	V|

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   24+45      24.1536      0.01  Q         |         |         |        V|
   24+50      24.1537      0.01  Q         |         |         |        V|
   24+55      24.1537      0.01  Q         |         |         |        V|
   25+ 0      24.1538      0.00  Q         |         |         |        V|
   25+ 5      24.1538      0.00  Q         |         |         |        V|
   25+10      24.1538      0.00  Q         |         |         |        V|
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APPENDIX C.2: AREA "B-1A"

100-YEAR, 1-HOUR

U n i t H y d r o g r a p h A n a l y s i s

Study date 11/19/11 File: ARB1AP1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6269

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

SCE ALBERHILL SUBSTATION POST-PROJECT CONDITION HYDROLOGY
AREA TRIBUTARY TO BASIN "B-1"
UNIT HYDROGRAPH ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARB1P

Drainage Area = 9.40(Ac.) = 0.015 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.40(Ac.) = 0.015 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.165 Hr.
Lag time = 9.90 Min.
25% of lag time = 2.48 Min.
40% of lag time = 3.96 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
9.40	0.55	5.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
9.40	1.45	13.63

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.450(In)

Point rain (area averaged) = 1.450(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.450(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
9.400	83.80	0.000

Total Area Entered = 9.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.8	83.8	0.201	0.000	0.201	1.000	0.201
					Sum (F) =	0.201

Area averaged mean soil loss (F) (In/Hr) = 0.201
Minimum soil loss rate ((In/Hr)) = 0.100
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	50.505	4.341	0.411
2	0.167	101.010	20.871	1.977
3	0.250	151.515	38.120	3.611
4	0.333	202.020	14.507	1.374
5	0.417	252.525	8.306	0.787
6	0.500	303.030	5.395	0.511
7	0.583	353.535	3.539	0.335
8	0.667	404.040	2.169	0.205
9	0.750	454.545	1.002	0.095
10	0.833	505.051	0.546	0.052
11	0.917	555.556	0.385	0.037
12	1.000	606.061	0.363	0.034
13	1.083	656.566	0.279	0.026
14	1.167	707.071	0.176	0.017
		Sum = 100.000	Sum=	9.473

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.766	0.201	(0.689)	0.565
2	0.17	4.50	0.783	0.201	(0.705)	0.582
3	0.25	5.40	0.940	0.201	(0.846)	0.739
4	0.33	5.40	0.940	0.201	(0.846)	0.739
5	0.42	5.70	0.992	0.201	(0.893)	0.791
6	0.50	6.40	1.114	0.201	(1.002)	0.913
7	0.58	7.90	1.374	0.201	(1.237)	1.174
8	0.67	9.10	1.583	0.201	(1.425)	1.383
9	0.75	12.80	2.227	0.201	(2.004)	2.026
10	0.83	25.60	4.454	0.201	(4.009)	4.253
11	0.92	7.90	1.374	0.201	(1.237)	1.174
12	1.00	4.90	0.853	0.201	(0.767)	0.652
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	15.0

Flood volume = Effective rainfall 1.25(In)
times area 9.4(Ac.)/[(In)/(Ft.)] = 1.0(Ac.Ft)
Total soil loss = 0.20(In)
Total soil loss = 0.157(Ac.Ft)
Total rainfall = 1.45(In)
Flood volume = 42625.1 Cubic Feet
Total soil loss = 6847.6 Cubic Feet

Peak flow rate of this hydrograph = 23.051(CFS)

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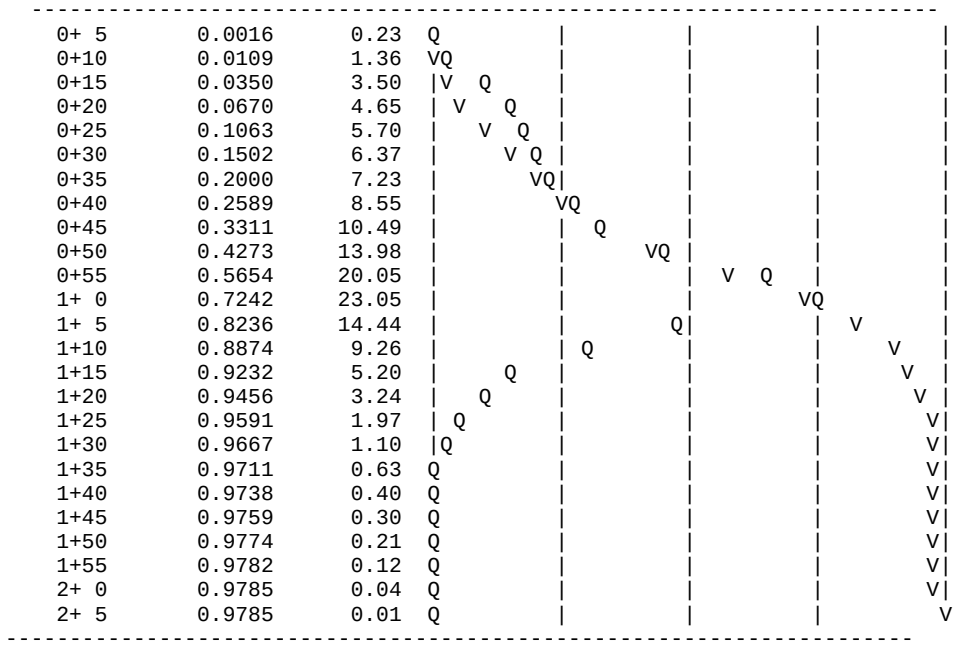
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0


0+ 5 0.0016 0.23
0+10 0.0109 1.36
0+15 0.0350 3.50
0+20 0.0670 4.65
0+25 0.1063 5.70
0+30 0.1502 6.37
0+35 0.2000 7.23
0+40 0.2589 8.55
0+45 0.3311 10.49
0+50 0.4273 13.98
0+55 0.5654 20.05
1+ 0 0.7242 23.05
1+ 5 0.8236 14.44
1+10 0.8874 9.26
1+15 0.9232 5.20
1+20 0.9456 3.24
1+25 0.9591 1.97
1+30 0.9667 1.10
1+35 0.9711 0.63
1+40 0.9738 0.40
1+45 0.9759 0.30
1+50 0.9774 0.21
1+55 0.9782 0.12
2+ 0 0.9785 0.04
2+ 5 0.9785 0.01

APPENDIX C.3: AREA "B-1B"

100-YEAR, 1-HOUR

U n i t H y d r o g r a p h A n a l y s i s

Study date 11/14/11 File: ARB1BP1100.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6269

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

SCE ALBERHILL SUBSTATION POST-PROJECT CONDITION HYDROLOGY
AREA TRIBUTARY TO BASIN B-1B
UH 100-YR
FILENAME: ARB1P

Drainage Area = 83.60(Ac.) = 0.131 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 83.60(Ac.) = 0.131 Sq. Mi.
Length along longest watercourse = 4602.50(Ft.)
Length along longest watercourse measured to centroid = 1796.20(Ft.)
Length along longest watercourse = 0.872 Mi.
Length along longest watercourse measured to centroid = 0.340 Mi.
Difference in elevation = 627.00(Ft.)
Slope along watercourse = 719.2960 Ft./Mi.
Average Manning's 'N' = 0.035
Lag time = 0.152 Hr.
Lag time = 9.10 Min.
25% of lag time = 2.27 Min.
40% of lag time = 3.64 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
83.60	0.55	45.98

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
83.60	1.45	121.22

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.450(In)

Point rain (area averaged) = 1.450(In)
Areal adjustment factor = 99.92 %
Adjusted average point rain = 1.449(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
83.600	84.20	0.000

Total Area Entered = 83.60(Ac.)

```
RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
84.2  84.2      0.196     0.000        0.196       1.000      0.196
                                                 Sum (F) =   0.196
Area averaged mean soil loss (F) (In/Hr) =  0.196
Minimum soil loss rate ((In/Hr)) =  0.098
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      FOOTHILL S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         54.949          4.905              4.132
    2   0.167        109.898         26.051             21.948
    3   0.250        164.848         36.472             30.729
    4   0.333        219.797         13.368             11.263
    5   0.417        274.746          7.737              6.519
    6   0.500        329.695          4.913              4.139
    7   0.583        384.644          3.001              2.528
    8   0.667        439.594          1.564              1.318
    9   0.750        494.543          0.658              0.554
   10   0.833        549.492          0.462              0.390
   11   0.917        604.441          0.384              0.324
   12   1.000        659.390          0.311              0.262
   13   1.083        714.339          0.174              0.147
                                Sum = 100.000   Sum=      84.253
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

 Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
      (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
  1   0.08     4.40      0.765          0.196    (  0.689)        0.569
  2   0.17     4.50      0.782          0.196    (  0.704)        0.586
  3   0.25     5.40      0.939          0.196    (  0.845)        0.743
  4   0.33     5.40      0.939          0.196    (  0.845)        0.743
  5   0.42     5.70      0.991          0.196    (  0.892)        0.795
  6   0.50     6.40      1.113          0.196    (  1.001)        0.917
  7   0.58     7.90      1.374          0.196    (  1.236)        1.177
  8   0.67     9.10      1.582          0.196    (  1.424)        1.386
  9   0.75    12.80      2.226          0.196    (  2.003)        2.029
 10   0.83    25.60      4.451          0.196    (  4.006)        4.255
 11   0.92     7.90      1.374          0.196    (  1.236)        1.177
 12   1.00     4.90      0.852          0.196    (  0.767)        0.656
             (Loss Rate Not Used)
    Sum =     100.0                                 Sum =    15.0
      Flood volume = Effective rainfall      1.25(In)
       times area      83.6(Ac.)/[(In)/(Ft.)] =       8.7(Ac.Ft)
      Total soil loss =      0.20(In)
      Total soil loss =     1.366(Ac.Ft)
      Total rainfall =      1.45(In)
      Flood volume =      380179.1 Cubic Feet
      Total soil loss =       59516.1 Cubic Feet
      ------------------------------------------------------------------------
       Peak flow rate of this hydrograph =    200.577(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
```

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	75.0	150.0	225.0	300.0
0+ 5	0.0162	2.35	Q				
0+10	0.1189	14.92	VQ				
0+15	0.3492	33.44	V Q				
0+20	0.6510	43.82	V Q				
0+25	1.0143	52.75	V Q				
0+30	1.4181	58.63	VQ				
0+35	1.8762	66.52	Q				
0+40	2.4195	78.88	QV				
0+45	3.0847	96.59	Q V				
0+50	3.9849	130.72	QV				
0+55	5.3045	191.61	VQ				
1+ 0	6.6859	200.58	Q V				
1+ 5	7.5325	122.92	Q			V	
1+10	8.0558	75.99	Q			V	
1+15	8.3397	41.22	Q			V	
1+20	8.5080	24.43	Q			V	
1+25	8.6024	13.71	Q			V	
1+30	8.6524	7.25	Q			V	
1+35	8.6825	4.37	Q			V	
1+40	8.7027	2.94	Q			V	
1+45	8.7168	2.05	Q			V	
1+50	8.7247	1.14	Q			V	
1+55	8.7270	0.34	Q			V	
2+ 0	8.7277	0.10	Q			V	

APPENDIX C.4: AREA "B-2"

100-YEAR, 1-HOUR

U n i t H y d r o g r a p h A n a l y s i s

Study date 11/19/11 File: ARB2P1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6045

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

SCE ALBERHILL SUBSTATION POST-PROJECT CONDITION HYDROLOGY
AREA TRIBUTARY TO BASIN "B-2"
UNIT HYDROGRAPH ANALYSIS, 10-YEAR STORM EVENT
FILENAME: ARB2P

Drainage Area = 10.80(Ac.) = 0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 10.80(Ac.) = 0.017 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.185 Hr.
Lag time = 11.10 Min.
25% of lag time = 2.77 Min.
40% of lag time = 4.44 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
10.80	0.55	5.94

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
10.80	1.45	15.66

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.450(In)

Point rain (area averaged) = 1.450(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.450(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
10.800	87.70	0.000

Total Area Entered = 10.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
87.7	87.7	0.156	0.000	0.156	1.000	0.156
					Sum (F) =	0.156

```
      Area averaged mean soil loss (F) (In/Hr) =  0.156
      Minimum soil loss rate ((In/Hr)) =  0.078
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.900
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.4800
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         45.045          3.696              0.402
          2   0.167         90.090         15.204              1.655
          3   0.250        135.135         37.223              4.052
          4   0.333        180.180         17.421              1.896
          5   0.417        225.225          9.070              0.987
          6   0.500        270.270          6.006              0.654
          7   0.583        315.315          4.158              0.453
          8   0.667        360.360          2.812              0.306
          9   0.750        405.405          1.797              0.196
         10   0.833        450.450          0.848              0.092
         11   0.917        495.495          0.495              0.054
         12   1.000        540.541          0.377              0.041
         13   1.083        585.586          0.299              0.033
         14   1.167        630.631          0.317              0.034
         15   1.250        675.676          0.175              0.019
         16   1.333        720.721          0.102              0.011
                                  Sum = 100.000   Sum=      10.884
------------------------------------------------------------------------


  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     4.40      0.766         0.156      ---          0.61
   2   0.17     4.50      0.783         0.156      ---          0.63
   3   0.25     5.40      0.940         0.156      ---          0.78
   4   0.33     5.40      0.940         0.156      ---          0.78
   5   0.42     5.70      0.992         0.156      ---          0.84
   6   0.50     6.40      1.113         0.156      ---          0.96
   7   0.58     7.90      1.374         0.156      ---          1.22
   8   0.67     9.10      1.583         0.156      ---          1.43
   9   0.75    12.80      2.227         0.156      ---          2.07
  10   0.83    25.60      4.454         0.156      ---          4.30
  11   0.92     7.90      1.374         0.156      ---          1.22
  12   1.00     4.90      0.853         0.156      ---          0.70
     Sum =     100.0                                    Sum =    15.5
      Flood volume = Effective rainfall      1.29(In)
       times area      10.8(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
      Total soil loss =      0.16(In)
      Total soil loss =     0.141(Ac.Ft)
      Total rainfall =      1.45(In)
      Flood volume =       50715.8 Cubic Feet
      Total soil loss =        6124.4 Cubic Feet
      ------------------------------------------------------------------------
       Peak flow rate of this hydrograph =     26.827(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
  ----------------------------------------------------------------------
    0+ 5       0.0017      0.25  Q         |         |         |         |
```

```
   0+10       0.0104      1.26  VQ         |          |          |          |
   0+15       0.0367      3.82  |V   Q     |          |          |          |
   0+20       0.0733      5.31  | V    Q   |          |          |          |
   0+25       0.1187      6.60  |   V   Q  |          |          |          |
   0+30       0.1700      7.45  |    V   Q|          |          |          |
   0+35       0.2279      8.41  |      V  |Q         |          |          |
   0+40       0.2955      9.81  |         V  Q       |          |          |
   0+45       0.3778     11.95  |          | V  Q    |          |          |
   0+50       0.4847     15.52  |          |     V   Q          |          |
   0+55       0.6321     21.40  |          |          |V       Q |          |
   1+ 0       0.8168     26.83  |          |          |        V |    Q     |
   1+ 5       0.9435     18.39  |          |          |   Q      | V        |
   1+10       1.0271     12.13  |          |     Q    |          |    V     |
   1+15       1.0765      7.17  |        Q |          |          |     V    |
   1+20       1.1082      4.61  |     Q    |          |          |       V  |
   1+25       1.1292      3.04  |   Q      |          |          |       V  |
   1+30       1.1425      1.93  | Q        |          |          |        V |
   1+35       1.1502      1.12  |Q         |          |          |        V |
   1+40       1.1549      0.68  Q          |          |          |        V |
   1+45       1.1580      0.46  Q          |          |          |        V |
   1+50       1.1603      0.34  Q          |          |          |        V |
   1+55       1.1622      0.27  Q          |          |          |        V |
   2+ 0       1.1634      0.17  Q          |          |          |        V |
   2+ 5       1.1640      0.09  Q          |          |          |        V |
   2+10       1.1642      0.03  Q          |          |          |        V |
   2+15       1.1643      0.01  Q          |          |          |        V |
-------------------------------------------------------------------------
```

APPENDIX D: PEAK BASIN OUTFLOW CALCULATIONS

APPENDIX D.1: BASIN "A" STORAGE VOLUME VS. OUTFLOW TABLE

BASIN "A" OUTFLOW CALCULATIONS

Q_{IN}	WSE
0.5	1178.534
1	1178.67
5	1181.262
10	1181.491
25	1182.836
50	1187.185
75	1192.211

Depth	Elevation	Outflow
0	1178.7	0
0.3	1179	1.509
1.3	1180	3.052
2.3	1181	4.596
3.3	1182	15.677
4.3	1183	25.943
5.3	1184	31.691
6.3	1185	37.440
7.3	1186	43.188
8.3	1187	48.937
9.3	1188	54.054
10.3	1189	59.028
11.3	1190	64.002

BASIN "A" - TOTAL

Contour Elevation	Contour Area (sf)	Contour Area (ac)	Contour Interval Volume (ac-ft)	Total Basin Volume (ac-ft)	Total Basin Volume (ft^3)	Outflow (cfs)
1178.70	0.0	0.000		0.0000		0
			0.041			
1179.00	17798.90	0.409		0.0409	1779.89	1.5090
			0.582			
1180.00	33760.60	0.775		0.6230	27137.49	3.0520
			0.830			
1181.00	38577.10	0.886		1.4527	63279.58	4.5960
			0.940			
1182.00	43393.60	0.996		2.3931	104241.33	15.6770
			1.051			
1183.00	48210.10	1.107		3.4440	150022.06	25.9430
			1.162			
1184.00	53026.60	1.217		4.6056	200621.30	31.6910
			1.272			
1185.00	57843.30	1.328		5.8778	256038.81	37.4400
			1.366			
1186.00	61197.60	1.405		7.2441	315551.38	43.1880
			1.443			
1187.00	64551.90	1.482		8.6873	378418.67	48.9370
			1.520			
1188.00	67906.20	1.559		10.2075	444640.64	54.0540
			1.597			
1189.00	71260.50	1.636		11.8048	514217.25	59.0280
			1.674			
1190.00	74614.70	1.713		13.4791	587148.42	64.0020

APPENDIX D.2: BASIN "B-1A" STORAGE VOLUME VS. OUTFLOW TABLE

BASIN "A" OUTFLOW CALCULATIONS

Q_{IN}	WSE
0.5	1195.005
1	1195.023
5	1195.478
10	1195.891
25	1196.748
50	1197.881
75	1199.223
100	1200.887

Depth	Elevation	Outflow
1	1196	11.908
2	1197	30.56
3	1198	52.217
4	1199	70.846
5	1200	86.674

BASIN "B-1A" - TOTAL

Contour Elevation	Contour Area (sf)	Contour Area (ac)	Contour Interval Volume (ac-ft)	Total Basin Volume (ac-ft)	Total Basin Volume (ft^3)	Outflow (cfs)
1196.00	0.0	0.000		0.0000		11.908
			0.111			
1197.00	14540.90	0.334		0.1113	4846.97	30.5600
			0.655			
1198.00	45340.20	1.041		0.7660	33366.20	52.2170
			1.267			
1199.00	65702.10	1.508		2.0334	88573.54	70.8460
			1.595			
1200.00	73292.80	1.683		3.6280	158036.42	86.6740

APPENDIX D.3: BASIN "B-1B" STORAGE VOLUME VS. OUTFLOW TABLE

BASIN "B-1B" OUTFLOW CALCULATIONS

Weir Structure $Q = CLH^{(3/2)}$

Elevation	H	C	L	Q
1207.3				0
1208	0.7	2.8	5.5	9.0
1209	1.7	2.8	5.5	34.1
1210	2.7	2.8	5.5	68.3
1211	3.7	2.8	5.5	109.6
1212	4.7	2.8	5.5	156.9

BASIN "B-1B" - TOTAL

Contour Elevation	Contour Area (sf)	Contour Area (ac)	Contour Interval Volume (ac-ft)	Total Basin Volume (ac-ft)	Total Basin Volume (ft^3)	Outflow (cfs)
1202.00	0.0	0.000		0.0000		0
			0.008			
1203.00	1098.10	0.025		0.0084	366.03	0.0000
			0.063			
1204.00	4789.40	0.110		0.0710	3092.97	0.0000
			0.159			
1205.00	9347.00	0.215		0.2304	10035.36	0.0000
			0.274			
1206.00	14730.90	0.338		0.5044	21972.70	0.0000
			0.367			
1207.00	17302.80	0.397		0.8717	37972.32	0.0000
			0.426			
1208.00	19837.40	0.455		1.2977	56527.99	0.0000
			0.485			
1209.00	22473.10	0.516		1.7830	77669.54	0.0000
			0.553			
1210.00	25776.60	0.592		2.3364	101775.52	0.0000
			0.625			
1211.00	28655.40	0.658		2.9609	128978.82	0.0000
			0.693			
1212.00	31731.50	0.728		3.6538	159159.21	0.0000

APPENDIX D.4: BASIN "B-2" STORAGE VOLUME VS. OUTFLOW TABLE

BASIN "B-2" OUTFLOW CALCULATIONS

Q_{IN}	WSE
1	1190.456
5	1191.03
10	1191.475
25	1192.445
50	1194.051
75	1197.758
100	1208.734

Depth	Elevation	Outflow
0	1190	0
1	1191	4.7909
2	1192	18.118
3	1193	33.639
4	1194	49.206
5	1195	56.4
6	1196	63.144
7	1197	69.888
8	1198	75.551

BASIN "B-2" - TOTAL

Contour Elevation	Contour Area (sf)	Contour Area (ac)	Contour Interval Volume (ac-ft)	Total Basin Volume (ac-ft)	Total Basin Volume (ft^3)	Outflow (cfs)
1190.00	0.0	0.000		0.0000		0
			0.048			
1191.00	6225.24	0.143		0.0476	2075.08	4.7909
			0.167			
1192.00	8366.13	0.192		0.2145	9344.45	18.1180
			0.217			
1193.00	10589.27	0.243		0.4316	18800.34	33.6390
			0.269			
1194.00	12906.42	0.296		0.7009	30529.10	49.2060
			0.345			
1195.00	17275.02	0.397		1.0461	45566.84	56.4000
			0.437			
1196.00	20882.69	0.479		1.4834	64617.21	63.1440
			0.528			
1197.00	25210.78	0.579		2.0117	87630.01	69.8880
			0.637			
1198.00	30375.71	0.697		2.6488	115383.17	75.5510

APPENDIX D.5: BASIN "A" WSPG CALCULATIONS FOR BASIN OUTFLOW

```
T1 line a                                                                                                    0
T2
T3
SO   1000.0001175.900  1                            1175.900
R    1071.2701176.300  1      .013                                    .000    .000 0
R    1134.1001176.653  1      .013                                 -89.997    .000 0
R    1251.2601177.311  1      .013                                    .000    .000 0
JX   1258.6701177.353  3  2   .013   65.600          1177.410         45.0          .000
R    1409.8001178.209  3      .013                                    .000    .000 0
WE   1409.8001178.209  4      .250
SH   1409.8001178.209  4                            1178.209
CD   1  4   1    .000   3.500     .000  .000  .000   .00
CD   2  4   1    .000   3.000     .000  .000  .000   .00
CD   3  4   1    .000   3.000     .000  .000  .000   .00
CD   4  2   0    .000  10.000   18.000  .000  .000   .00
Q             0.500   .0
Q             1.000   .0
Q             5.000   .0
Q            10.000   .0
Q            25.000   .0
Q            50.000   .0
Q            75.000   .0
```

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1175.900	2.541	1178.441	66.10	8.84	1.21	1179.65	.00	2.55	3.12	3.500	.000	.00	1 .0
66.734	.0056					.0056	.37	2.54	1.01	2.54	.013	.00	.00	PIPE
1066.734	1176.275	2.541	1178.815	66.10	8.84	1.21	1180.03	.00	2.55	3.12	3.500	.000	.00	1 .0
4.536	.0056					.0056	.03	2.54	1.01	2.54	.013	.00	.00	PIPE
1071.270	1176.300	2.540	1178.840	66.10	8.84	1.21	1180.05	.19	2.55	3.12	3.500	.000	.00	1 .0
57.710	.0056					.0056	.32	2.73	1.01	2.54	.013	.00	.00	PIPE
1128.980	1176.624	2.540	1179.164	66.10	8.84	1.21	1180.38	.19	2.55	3.12	3.500	.000	.00	1 .0
5.120	.0056					.0056	.03	2.73	1.01	2.54	.013	.00	.00	PIPE
1134.100	1176.653	2.540	1179.193	66.10	8.84	1.21	1180.41	.00	2.55	3.12	3.500	.000	.00	1 .0
114.440	.0056					.0056	.64	2.54	1.01	2.54	.013	.00	.00	PIPE
1248.540	1177.296	2.540	1179.836	66.10	8.84	1.21	1181.05	.00	2.55	3.12	3.500	.000	.00	1 .0
2.720	.0056					.0056	.02	2.54	1.01	2.54	.013	.00	.00	PIPE
1251.260	1177.311	2.548	1179.859	66.10	8.81	1.20	1181.06	.00	2.55	3.11	3.500	.000	.00	1 .0
JUNCT STR	.0057							2.55	1.00		.013	.00	.00	PIPE
1258.670	1177.353	.211	1177.564	.50	2.28	.08	1177.64	.00	.22	1.54	3.000	.000	.00	1 .0
149.780	.0057					.0057	.85	.21	1.06	.21	.013	.00	.00	PIPE
1408.450	1178.201	.211	1178.413	.50	2.28	.08	1178.49	.00	.22	1.54	3.000	.000	.00	1 .0
1.350	.0057					.0053	.01	.21	1.06	.21	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1409.800	1178.209	.218	1178.427	.50	2.18	.07	1178.50	.00	.22	1.56	3.000	.000	.00	1 .0
WALL	ENTRANCE													
1409.800	1178.209	.325	1178.534	.50	.09	.00	1178.53	.00	.03	18.00	10.000	18.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	1175.900	2.557	1178.457	66.60	8.84	1.21	1179.67	.00	2.56	3.11	3.500	.000	.00	1 .0
70.221	.0056					.0056	.39	2.56	1.00	2.56	.013	.00	.00	PIPE
1070.221	1176.294	2.557	1178.851	66.60	8.84	1.21	1180.07	.00	2.56	3.11	3.500	.000	.00	1 .0
1.049	.0056					.0056	.01	2.56	1.00	2.56	.013	.00	.00	PIPE
1071.270	1176.300	2.556	1178.856	66.60	8.85	1.22	1180.07	.19	2.56	3.11	3.500	.000	.00	1 .0
62.830	.0056					.0056	.35	2.74	1.00	2.56	.013	.00	.00	PIPE
1134.100	1176.653	2.556	1179.209	66.60	8.85	1.22	1180.42	.00	2.56	3.11	3.500	.000	.00	1 .0
115.946	.0056					.0056	.65	2.56	1.00	2.56	.013	.00	.00	PIPE
1250.046	1177.304	2.556	1179.860	66.60	8.85	1.22	1181.08	.00	2.56	3.11	3.500	.000	.00	1 .0
1.214	.0056					.0056	.01	2.56	1.00	2.56	.013	.00	.00	PIPE
1251.260	1177.311	2.557	1179.868	66.60	8.84	1.21	1181.08	.00	2.56	3.11	3.500	.000	.00	1 .0
JUNCT STR	.0057							2.56	1.00		.013	.00	.00	PIPE
1258.670	1177.353	.293	1177.646	1.00	2.81	.12	1177.77	.00	.31	1.78	3.000	.000	.00	1 .0
145.108	.0057					.0057	.82	.29	1.11	.29	.013	.00	.00	PIPE
1403.778	1178.175	.293	1178.468	1.00	2.81	.12	1178.59	.00	.31	1.78	3.000	.000	.00	1 .0
4.882	.0057					.0055	.03	.29	1.11	.29	.013	.00	.00	PIPE
1408.661	1178.203	.298	1178.500	1.00	2.74	.12	1178.62	.00	.31	1.79	3.000	.000	.00	1 .0
1.139	.0057					.0049	.01	.30	1.07	.29	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1409.800	1178.209	.309	1178.518	1.00	2.60	.11	1178.62	.00	.31	1.82	3.000	.000	.00	1 .0
WALL	ENTRANCE													
1409.800	1178.209	.461	1178.670	1.00	.12	.00	1178.67	.00	.05	18.00	10.000	18.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	1175.900	2.632	1178.532	70.60	9.09	1.28	1179.82	.00	2.63	3.02	3.500	.000	.00	1 .0
18.685	.0056					.0057	.11	2.63	1.00	2.69	.013	.00	.00	PIPE
1018.685	1176.005	2.688	1178.693	70.60	8.90	1.23	1179.92	.00	2.63	2.95	3.500	.000	.00	1 .0
52.585	.0056					.0056	.29	2.69	.96	2.69	.013	.00	.00	PIPE
1071.270	1176.300	2.688	1178.988	70.60	8.90	1.23	1180.22	.09	2.63	2.95	3.500	.000	.00	1 .0
5.140	.0056					.0056	.03	2.78	.96	2.69	.013	.00	.00	PIPE
1076.410	1176.329	2.687	1179.016	70.60	8.91	1.23	1180.25	.09	2.63	2.96	3.500	.000	.00	1 .0
57.690	.0056					.0056	.32	2.78	.96	2.69	.013	.00	.00	PIPE
1134.100	1176.653	2.687	1179.340	70.60	8.91	1.23	1180.57	.00	2.63	2.96	3.500	.000	.00	1 .0
.120	.0056					.0056	.00	2.69	.96	2.69	.013	.00	.00	PIPE
1134.220	1176.654	2.687	1179.341	70.60	8.91	1.23	1180.57	.00	2.63	2.96	3.500	.000	.00	1 .0
117.040	.0056					.0056	.65	2.69	.96	2.69	.013	.00	.00	PIPE
1251.260	1177.311	2.687	1179.998	70.60	8.91	1.23	1181.23	.00	2.63	2.96	3.500	.000	.00	1 .0
JUNCT STR	.0057					.0028	.02	2.69	.96		.013	.00	.00	PIPE
1258.670	1177.353	3.890	1181.243	5.00	.71	.01	1181.25	.00	.70	.00	3.000	.000	.00	1 .0
151.130	.0057					.0001	.01	3.89	.00	.64	.013	.00	.00	PIPE
WALL	ENTRANCE													

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1409.800	1178.209	3.053	1181.262	5.00	.09	.00	1181.26	.00	.13	18.00	10.000	18.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	1175.900	2.721	1178.621	75.60	9.42	1.38	1180.00	.00	2.72	2.91	3.500	.000	.00	1 .0
39.135	.0056					.0060	.23	2.72	1.00	2.88	.013	.00	.00	PIPE
1039.135	1176.120	2.860	1178.980	75.60	8.98	1.25	1180.23	.00	2.72	2.71	3.500	.000	.00	1 .0
32.135	.0056					.0057	.18	2.86	.90	2.88	.013	.00	.00	PIPE
1071.270	1176.300	2.868	1179.168	75.60	8.96	1.25	1180.41	.08	2.72	2.69	3.500	.000	.00	1 .0
62.830	.0056					.0056	.35	2.95	.89	2.88	.013	.00	.00	PIPE
1134.100	1176.653	2.875	1179.527	75.60	8.94	1.24	1180.77	.00	2.72	2.68	3.500	.000	.00	1 .0
71.109	.0056					.0056	.40	2.87	.89	2.88	.013	.00	.00	PIPE
1205.208	1177.052	2.877	1179.929	75.60	8.93	1.24	1181.17	.00	2.72	2.68	3.500	.000	.00	1 .0
46.052	.0056					.0056	.26	2.88	.89	2.88	.013	.00	.00	PIPE
1251.260	1177.311	2.877	1180.188	75.60	8.93	1.24	1181.43	.00	2.72	2.68	3.500	.000	.00	1 .0
JUNCT STR	.0057					.0029	.02	2.88	.89		.013	.00	.00	PIPE
1258.670	1177.353	4.065	1181.418	10.00	1.41	.03	1181.45	.00	1.00	.00	3.000	.000	.00	1 .0
151.130	.0057					.0002	.03	4.06	.00	.91	.013	.00	.00	PIPE
1409.800	1178.209	3.243	1181.452	10.00	1.41	.03	1181.48	.00	1.00	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE													
1409.800	1178.209	3.282	1181.491	10.00	.17	.00	1181.49	.00	.21	18.00	10.000	18.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1175.900	2.951	1178.851	90.60	10.47	1.70	1180.55	.00	2.95	2.55	3.500	.000	.00	1 .0
13.266	.0056					.0075	.10	2.95	1.00	3.50	.013	.00	.00	PIPE
1013.266	1175.974	3.130	1179.105	90.60	9.98	1.55	1180.65	.00	2.95	2.15	3.500	.000	.00	1 .0
58.004	.0056					.0071	.41	3.13	.86	3.50	.013	.00	.00	PIPE
1071.270	1176.300	3.341	1179.641	90.60	9.57	1.42	1181.06	.05	2.95	1.46	3.500	.000	.00	1 .0
62.830	.0056					.0076	.48	3.39	.66	3.50	.013	.00	.00	PIPE
1134.100	1176.653	3.500	1180.153	90.60	9.42	1.38	1181.53	.00	2.95	.00	3.500	.000	.00	1 .0
117.160	.0056					.0081	.95	3.50	.00	3.50	.013	.00	.00	PIPE
1251.260	1177.311	3.792	1181.103	90.60	9.42	1.38	1182.48	.00	2.95	.00	3.500	.000	.00	1 .0
JUNCT STR	.0057					.0048	.04	3.79	.00		.013	.00	.00	PIPE
1258.670	1177.353	5.029	1182.382	25.00	3.54	.19	1182.58	.00	1.61	.00	3.000	.000	.00	1 .0
151.130	.0057					.0014	.21	5.03	.00	1.50	.013	.00	.00	PIPE
1409.800	1178.209	4.386	1182.594	25.00	3.54	.19	1182.79	.00	1.61	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE													
1409.800	1178.209	4.627	1182.836	25.00	.30	.00	1182.84	.00	.39	18.00	10.000	18.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	1175.900	3.217	1179.117	115.60	12.49	2.42	1181.54	.00	3.22	1.91	3.500	.000	.00	1 .0
15.887	.0056					.0120	.19	3.22	1.00	3.50	.013	.00	.00	PIPE
1015.887	1175.989	3.500	1179.489	115.60	12.02	2.24	1181.73	.00	3.22	.00	3.500	.000	.00	1 .0
55.383	.0056					.0129	.71	3.50	.00	3.50	.013	.00	.00	PIPE
1071.270	1176.300	3.920	1180.220	115.60	12.02	2.24	1182.46	.00	3.22	.00	3.500	.000	.00	1 .0
62.830	.0056					.0132	.83	.00	.00	3.50	.013	.00	.00	PIPE
1134.100	1176.653	4.845	1181.498	115.60	12.02	2.24	1183.74	.00	3.22	.00	3.500	.000	.00	1 .0
117.160	.0056					.0132	1.55	4.85	.00	3.50	.013	.00	.00	PIPE
1251.260	1177.311	5.734	1183.045	115.60	12.02	2.24	1185.29	.00	3.22	.00	3.500	.000	.00	1 .0
JUNCT STR	.0057					.0094	.07	5.73	.00		.013	.00	.00	PIPE
1258.670	1177.353	8.012	1185.365	50.00	7.07	.78	1186.14	.00	2.30	.00	3.000	.000	.00	1 .0
151.130	.0057					.0056	.85	8.01	.00	2.45	.013	.00	.00	PIPE
1409.800	1178.209	8.006	1186.215	50.00	7.07	.78	1186.99	.00	2.30	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE													
1409.800	1178.209	8.976	1187.185	50.00	.31	.00	1187.19	.00	.62	18.00	10.000	18.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3: 4:36

line a

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	1175.900	3.356	1179.256	140.60	14.82	3.41	1182.67	.00	3.36	1.39	3.500	.000	.00	1 .0
4.031	.0056					.0178	.07	3.36	1.00	3.50	.013	.00	.00	PIPE
1004.031	1175.923	3.500	1179.423	140.60	14.61	3.32	1182.74	.00	3.36	.00	3.500	.000	.00	1 .0
67.239	.0056					.0191	1.28	3.50	.00	3.50	.013	.00	.00	PIPE
1071.270	1176.300	4.436	1180.736	140.60	14.61	3.32	1184.05	.00	3.36	.00	3.500	.000	.00	1 .0
62.830	.0056					.0195	1.23	.00	.00	3.50	.013	.00	.00	PIPE
1134.100	1176.653	5.973	1182.626	140.60	14.61	3.32	1185.94	.00	3.36	.00	3.500	.000	.00	1 .0
117.160	.0056					.0195	2.29	5.97	.00	3.50	.013	.00	.00	PIPE
1251.260	1177.311	7.603	1184.914	140.60	14.61	3.32	1188.23	.00	3.36	.00	3.500	.000	.00	1 .0
JUNCT STR	.0057					.0161	.12	7.60	.00		.013	.00	.00	PIPE
1258.670	1177.353	10.763	1188.116	75.00	10.61	1.75	1189.86	.00	2.72	.00	3.000	.000	.00	1 .0
151.130	.0057					.0126	1.91	10.76	.00	3.00	.013	.00	.00	PIPE
1409.800	1178.209	11.818	1190.027	75.00	10.61	1.75	1191.78	.00	2.72	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE													
1409.800	1178.209	14.002	1192.211	75.00	.30	.00	1192.21	.00	.81	18.00	10.000	18.000	.00	0 .0

APPENDIX D.6: BASIN "B-1A" WSPG CALCULATIONS FOR BASIN OUTFLOW

```
T1 ALBERHILL STORM DRAIN                                                    0
T2 WSPG RUN FOR LINE B1
T3 FN: LATB3.WSW
SO   1000.0001191.000  1                          1195.000
R    1237.9401194.500  1      .013                                .000    .000 0
WE   1237.9401194.500  2      .250
SH   1237.9401194.500  2                          1194.500
CD   1  4   1    .000   3.500     .000  .000  .000   .00
CD   2  2   0    .000   5.000    5.000  .000  .000   .00
Q             0.500   .0
Q             1.000   .0
Q             5.000   .0
Q            10.000   .0
Q            25.000   .0
Q            50.000   .0
Q            75.000   .0
Q           100.000   .0
```

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1191.000	4.000	1195.000	.50	.05	.00	1195.00	.00	.21	.00	3.500	.000	.00	1 .0
33.992	.0147					.0000	.00	4.00	.00	.16	.013	.00	.00	PIPE
1033.992	1191.500	3.500	1195.000	.50	.05	.00	1195.00	.00	.21	.00	3.500	.000	.00	1 .0
21.985	.0147					.0000	.00	3.50	.00	.16	.013	.00	.00	PIPE
1055.977	1191.823	3.176	1194.999	.50	.05	.00	1195.00	.00	.21	2.03	3.500	.000	.00	1 .0
12.815	.0147					.0000	.00	3.18	.00	.16	.013	.00	.00	PIPE
1068.792	1192.012	2.987	1194.999	.50	.06	.00	1195.00	.00	.21	2.48	3.500	.000	.00	1 .0
10.564	.0147					.0000	.00	2.99	.01	.16	.013	.00	.00	PIPE
1079.356	1192.167	2.832	1194.999	.50	.06	.00	1195.00	.00	.21	2.75	3.500	.000	.00	1 .0
9.252	.0147					.0000	.00	2.83	.01	.16	.013	.00	.00	PIPE
1088.608	1192.303	2.696	1194.999	.50	.06	.00	1195.00	.00	.21	2.95	3.500	.000	.00	1 .0
8.334	.0147					.0000	.00	2.70	.01	.16	.013	.00	.00	PIPE
1096.943	1192.426	2.573	1194.999	.50	.07	.00	1195.00	.00	.21	3.09	3.500	.000	.00	1 .0
7.627	.0147					.0000	.00	2.57	.01	.16	.013	.00	.00	PIPE
1104.570	1192.538	2.461	1194.999	.50	.07	.00	1195.00	.00	.21	3.20	3.500	.000	.00	1 .0
7.049	.0147					.0000	.00	2.46	.01	.16	.013	.00	.00	PIPE
1111.620	1192.642	2.357	1194.999	.50	.07	.00	1195.00	.00	.21	3.28	3.500	.000	.00	1 .0
6.574	.0147					.0000	.00	2.36	.01	.16	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1118.193	1192.738	2.260	1194.999	.50	.08	.00	1195.00	.00	.21	3.35	3.500	.000	.00	1 .0
6.166	.0147					.0000	.00	2.26	.01	.16	.013	.00	.00	PIPE
1124.359	1192.829	2.170	1194.999	.50	.08	.00	1195.00	.00	.21	3.40	3.500	.000	.00	1 .0
5.798	.0147					.0000	.00	2.17	.01	.16	.013	.00	.00	PIPE
1130.157	1192.914	2.084	1194.999	.50	.08	.00	1195.00	.00	.21	3.44	3.500	.000	.00	1 .0
5.479	.0147					.0000	.00	2.08	.01	.16	.013	.00	.00	PIPE
1135.636	1192.995	2.004	1194.999	.50	.09	.00	1195.00	.00	.21	3.46	3.500	.000	.00	1 .0
5.186	.0147					.0000	.00	2.00	.01	.16	.013	.00	.00	PIPE
1140.823	1193.071	1.928	1194.999	.50	.09	.00	1195.00	.00	.21	3.48	3.500	.000	.00	1 .0
4.928	.0147					.0000	.00	1.93	.01	.16	.013	.00	.00	PIPE
1145.751	1193.144	1.855	1194.999	.50	.10	.00	1195.00	.00	.21	3.49	3.500	.000	.00	1 .0
4.683	.0147					.0000	.00	1.86	.01	.16	.013	.00	.00	PIPE
1150.434	1193.213	1.786	1194.999	.50	.10	.00	1195.00	.00	.21	3.50	3.500	.000	.00	1 .0
4.459	.0147					.0000	.00	1.79	.02	.16	.013	.00	.00	PIPE
1154.893	1193.278	1.721	1194.999	.50	.11	.00	1195.00	.00	.21	3.50	3.500	.000	.00	1 .0
4.262	.0147					.0000	.00	1.72	.02	.16	.013	.00	.00	PIPE
1159.154	1193.341	1.658	1194.999	.50	.11	.00	1195.00	.00	.21	3.50	3.500	.000	.00	1 .0
4.064	.0147					.0000	.00	1.66	.02	.16	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1163.219	1193.401	1.598	1194.999	.50	.12	.00	1195.00	.00	.21	3.49	3.500	.000	.00	1 .0
3.888	.0147					.0000	.00	1.60	.02	.16	.013	.00	.00	PIPE
1167.106	1193.458	1.541	1194.999	.50	.12	.00	1195.00	.00	.21	3.47	3.500	.000	.00	1 .0
3.724	.0147					.0000	.00	1.54	.02	.16	.013	.00	.00	PIPE
1170.831	1193.513	1.486	1194.999	.50	.13	.00	1195.00	.00	.21	3.46	3.500	.000	.00	1 .0
3.561	.0147					.0000	.00	1.49	.02	.16	.013	.00	.00	PIPE
1174.392	1193.565	1.434	1194.999	.50	.13	.00	1195.00	.00	.21	3.44	3.500	.000	.00	1 .0
3.418	.0147					.0000	.00	1.43	.02	.16	.013	.00	.00	PIPE
1177.810	1193.615	1.383	1194.999	.50	.14	.00	1195.00	.00	.21	3.42	3.500	.000	.00	1 .0
3.282	.0147					.0000	.00	1.38	.02	.16	.013	.00	.00	PIPE
1181.092	1193.664	1.335	1194.999	.50	.15	.00	1195.00	.00	.21	3.40	3.500	.000	.00	1 .0
3.146	.0147					.0000	.00	1.34	.03	.16	.013	.00	.00	PIPE
1184.238	1193.710	1.289	1194.999	.50	.16	.00	1195.00	.00	.21	3.38	3.500	.000	.00	1 .0
3.023	.0147					.0000	.00	1.29	.03	.16	.013	.00	.00	PIPE
1187.261	1193.754	1.244	1194.999	.50	.16	.00	1195.00	.00	.21	3.35	3.500	.000	.00	1 .0
2.901	.0147					.0000	.00	1.24	.03	.16	.013	.00	.00	PIPE
1190.162	1193.797	1.202	1194.999	.50	.17	.00	1195.00	.00	.21	3.32	3.500	.000	.00	1 .0
2.792	.0147					.0000	.00	1.20	.03	.16	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1192.953	1193.838	1.160	1194.998	.50	.18	.00	1195.00	.00	.21	3.30	3.500	.000	.00	1 .0
2.683	.0147					.0000	.00	1.16	.03	.16	.013	.00	.00	PIPE
1195.636	1193.877	1.121	1194.998	.50	.19	.00	1195.00	.00	.21	3.27	3.500	.000	.00	1 .0
2.587	.0147					.0000	.00	1.12	.04	.16	.013	.00	.00	PIPE
1198.224	1193.916	1.083	1194.998	.50	.20	.00	1195.00	.00	.21	3.24	3.500	.000	.00	1 .0
2.485	.0147					.0000	.00	1.08	.04	.16	.013	.00	.00	PIPE
1200.709	1193.952	1.046	1194.998	.50	.21	.00	1195.00	.00	.21	3.20	3.500	.000	.00	1 .0
2.390	.0147					.0000	.00	1.05	.04	.16	.013	.00	.00	PIPE
1203.098	1193.987	1.011	1194.998	.50	.22	.00	1195.00	.00	.21	3.17	3.500	.000	.00	1 .0
2.308	.0147					.0000	.00	1.01	.04	.16	.013	.00	.00	PIPE
1205.406	1194.021	.977	1194.998	.50	.23	.00	1195.00	.00	.21	3.14	3.500	.000	.00	1 .0
2.219	.0147					.0000	.00	.98	.05	.16	.013	.00	.00	PIPE
1207.625	1194.054	.944	1194.998	.50	.24	.00	1195.00	.00	.21	3.11	3.500	.000	.00	1 .0
2.137	.0147					.0000	.00	.94	.05	.16	.013	.00	.00	PIPE
1209.762	1194.085	.913	1194.998	.50	.25	.00	1195.00	.00	.21	3.07	3.500	.000	.00	1 .0
2.062	.0147					.0000	.00	.91	.05	.16	.013	.00	.00	PIPE
1211.824	1194.115	.882	1194.998	.50	.26	.00	1195.00	.00	.21	3.04	3.500	.000	.00	1 .0
1.986	.0147					.0000	.00	.88	.06	.16	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1213.810	1194.145	.853	1194.998	.50	.28	.00	1195.00	.00	.21	3.01	3.500	.000	.00	1 .0
1.918	.0147					.0000	.00	.85	.06	.16	.013	.00	.00	PIPE
1215.728	1194.173	.825	1194.998	.50	.29	.00	1195.00	.00	.21	2.97	3.500	.000	.00	1 .0
1.849	.0147					.0000	.00	.82	.07	.16	.013	.00	.00	PIPE
1217.578	1194.200	.798	1194.998	.50	.30	.00	1195.00	.00	.21	2.94	3.500	.000	.00	1 .0
1.781	.0147					.0000	.00	.80	.07	.16	.013	.00	.00	PIPE
1219.358	1194.226	.771	1194.998	.50	.32	.00	1195.00	.00	.21	2.90	3.500	.000	.00	1 .0
1.712	.0147					.0000	.00	.77	.08	.16	.013	.00	.00	PIPE
1221.070	1194.251	.746	1194.997	.50	.33	.00	1195.00	.00	.21	2.87	3.500	.000	.00	1 .0
1.657	.0147					.0000	.00	.75	.08	.16	.013	.00	.00	PIPE
1222.727	1194.276	.721	1194.997	.50	.35	.00	1195.00	.00	.21	2.83	3.500	.000	.00	1 .0
1.602	.0147					.0000	.00	.72	.09	.16	.013	.00	.00	PIPE
1224.329	1194.299	.698	1194.997	.50	.37	.00	1195.00	.00	.21	2.80	3.500	.000	.00	1 .0
1.539	.0147					.0000	.00	.70	.09	.16	.013	.00	.00	PIPE
1225.868	1194.322	.675	1194.997	.50	.38	.00	1195.00	.00	.21	2.76	3.500	.000	.00	1 .0
1.491	.0147					.0000	.00	.67	.10	.16	.013	.00	.00	PIPE
1227.359	1194.344	.653	1194.997	.50	.40	.00	1195.00	.00	.21	2.73	3.500	.000	.00	1 .0
1.435	.0147					.0000	.00	.65	.11	.16	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1228.795	1194.365	.632	1194.997	.50	.42	.00	1195.00	.00	.21	2.69	3.500	.000	.00	1 .0
1.380	.0147					.0001	.00	.63	.11	.16	.013	.00	.00	PIPE
1230.174	1194.385	.611	1194.996	.50	.44	.00	1195.00	.00	.21	2.66	3.500	.000	.00	1 .0
1.338	.0147					.0001	.00	.61	.12	.16	.013	.00	.00	PIPE
1231.512	1194.405	.591	1194.996	.50	.47	.00	1195.00	.00	.21	2.62	3.500	.000	.00	1 .0
1.288	.0147					.0001	.00	.59	.13	.16	.013	.00	.00	PIPE
1232.800	1194.424	.572	1194.996	.50	.49	.00	1195.00	.00	.21	2.59	3.500	.000	.00	1 .0
1.239	.0147					.0001	.00	.57	.14	.16	.013	.00	.00	PIPE
1234.039	1194.442	.553	1194.996	.50	.51	.00	1195.00	.00	.21	2.55	3.500	.000	.00	1 .0
1.197	.0147					.0001	.00	.55	.15	.16	.013	.00	.00	PIPE
1235.236	1194.460	.536	1194.995	.50	.54	.00	1195.00	.00	.21	2.52	3.500	.000	.00	1 .0
1.161	.0147					.0001	.00	.54	.16	.16	.013	.00	.00	PIPE
1236.396	1194.477	.518	1194.995	.50	.56	.00	1195.00	.00	.21	2.49	3.500	.000	.00	1 .0
1.111	.0147					.0001	.00	.52	.17	.16	.013	.00	.00	PIPE
1237.507	1194.493	.501	1194.995	.50	.59	.01	1195.00	.00	.21	2.45	3.500	.000	.00	1 .0
.433	.0147					.0001	.00	.50	.18	.16	.013	.00	.00	PIPE

WALL ENTRANCE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1237.940	1194.500	.505	1195.005	.50	.20	.00	1195.01	.00	.07	5.00	5.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1191.000	4.000	1195.000	1.00	.10	.00	1195.00	.00	.30	.00	3.500	.000	.00	1 .0
33.994	.0147					.0000	.00	4.00	.00	.22	.013	.00	.00	PIPE
1033.994	1191.500	3.500	1195.000	1.00	.10	.00	1195.00	.00	.30	.00	3.500	.000	.00	1 .0
21.985	.0147					.0000	.00	3.50	.00	.22	.013	.00	.00	PIPE
1055.979	1191.823	3.176	1194.999	1.00	.11	.00	1195.00	.00	.30	2.03	3.500	.000	.00	1 .0
12.814	.0147					.0000	.00	3.18	.01	.22	.013	.00	.00	PIPE
1068.793	1192.012	2.987	1194.999	1.00	.11	.00	1195.00	.00	.30	2.48	3.500	.000	.00	1 .0
10.564	.0147					.0000	.00	2.99	.01	.22	.013	.00	.00	PIPE
1079.357	1192.167	2.832	1194.999	1.00	.12	.00	1195.00	.00	.30	2.75	3.500	.000	.00	1 .0
9.252	.0147					.0000	.00	2.83	.01	.22	.013	.00	.00	PIPE
1088.609	1192.303	2.696	1194.999	1.00	.13	.00	1195.00	.00	.30	2.95	3.500	.000	.00	1 .0
8.334	.0147					.0000	.00	2.70	.01	.22	.013	.00	.00	PIPE
1096.942	1192.426	2.573	1194.999	1.00	.13	.00	1195.00	.00	.30	3.09	3.500	.000	.00	1 .0
7.627	.0147					.0000	.00	2.57	.01	.22	.013	.00	.00	PIPE
1104.569	1192.538	2.461	1194.999	1.00	.14	.00	1195.00	.00	.30	3.20	3.500	.000	.00	1 .0
7.048	.0147					.0000	.00	2.46	.02	.22	.013	.00	.00	PIPE
1111.617	1192.642	2.357	1194.999	1.00	.15	.00	1195.00	.00	.30	3.28	3.500	.000	.00	1 .0
6.572	.0147					.0000	.00	2.36	.02	.22	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1118.190	1192.738	2.260	1194.999	1.00	.15	.00	1195.00	.00	.30	3.35	3.500	.000	.00	1 .0
6.164	.0147					.0000	.00	2.26	.02	.22	.013	.00	.00	PIPE
1124.354	1192.829	2.170	1194.999	1.00	.16	.00	1195.00	.00	.30	3.40	3.500	.000	.00	1 .0
5.797	.0147					.0000	.00	2.17	.02	.22	.013	.00	.00	PIPE
1130.151	1192.914	2.084	1194.999	1.00	.17	.00	1195.00	.00	.30	3.44	3.500	.000	.00	1 .0
5.477	.0147					.0000	.00	2.08	.02	.22	.013	.00	.00	PIPE
1135.629	1192.995	2.004	1194.999	1.00	.18	.00	1195.00	.00	.30	3.46	3.500	.000	.00	1 .0
5.185	.0147					.0000	.00	2.00	.02	.22	.013	.00	.00	PIPE
1140.813	1193.071	1.928	1194.999	1.00	.18	.00	1195.00	.00	.30	3.48	3.500	.000	.00	1 .0
4.926	.0147					.0000	.00	1.93	.03	.22	.013	.00	.00	PIPE
1145.740	1193.144	1.855	1194.999	1.00	.19	.00	1195.00	.00	.30	3.49	3.500	.000	.00	1 .0
4.681	.0147					.0000	.00	1.86	.03	.22	.013	.00	.00	PIPE
1150.421	1193.213	1.786	1194.999	1.00	.20	.00	1195.00	.00	.30	3.50	3.500	.000	.00	1 .0
4.457	.0147					.0000	.00	1.79	.03	.22	.013	.00	.00	PIPE
1154.877	1193.278	1.721	1194.999	1.00	.21	.00	1195.00	.00	.30	3.50	3.500	.000	.00	1 .0
4.259	.0147					.0000	.00	1.72	.03	.22	.013	.00	.00	PIPE
1159.136	1193.341	1.658	1194.999	1.00	.22	.00	1195.00	.00	.30	3.50	3.500	.000	.00	1 .0
4.062	.0147					.0000	.00	1.66	.03	.22	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1163.198	1193.401	1.598	1194.999	1.00	.23	.00	1195.00	.00	.30	3.49	3.500	.000	.00	1 .0
3.884	.0147					.0000	.00	1.60	.04	.22	.013	.00	.00	PIPE
1167.082	1193.458	1.541	1194.998	1.00	.25	.00	1195.00	.00	.30	3.47	3.500	.000	.00	1 .0
3.721	.0147					.0000	.00	1.54	.04	.22	.013	.00	.00	PIPE
1170.803	1193.512	1.486	1194.998	1.00	.26	.00	1195.00	.00	.30	3.46	3.500	.000	.00	1 .0
3.557	.0147					.0000	.00	1.49	.04	.22	.013	.00	.00	PIPE
1174.360	1193.565	1.434	1194.998	1.00	.27	.00	1195.00	.00	.30	3.44	3.500	.000	.00	1 .0
3.414	.0147					.0000	.00	1.43	.05	.22	.013	.00	.00	PIPE
1177.774	1193.615	1.383	1194.998	1.00	.28	.00	1195.00	.00	.30	3.42	3.500	.000	.00	1 .0
3.277	.0147					.0000	.00	1.38	.05	.22	.013	.00	.00	PIPE
1181.051	1193.663	1.335	1194.998	1.00	.30	.00	1195.00	.00	.30	3.40	3.500	.000	.00	1 .0
3.141	.0147					.0000	.00	1.34	.05	.22	.013	.00	.00	PIPE
1184.192	1193.709	1.289	1194.998	1.00	.31	.00	1195.00	.00	.30	3.38	3.500	.000	.00	1 .0
3.018	.0147					.0000	.00	1.29	.06	.22	.013	.00	.00	PIPE
1187.209	1193.754	1.244	1194.998	1.00	.33	.00	1195.00	.00	.30	3.35	3.500	.000	.00	1 .0
2.895	.0147					.0000	.00	1.24	.06	.22	.013	.00	.00	PIPE
1190.104	1193.796	1.202	1194.998	1.00	.34	.00	1195.00	.00	.30	3.32	3.500	.000	.00	1 .0
2.785	.0147					.0000	.00	1.20	.06	.22	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1192.889	1193.837	1.160	1194.998	1.00	.36	.00	1195.00	.00	.30	3.30	3.500	.000	.00	1 .0
2.675	.0147					.0000	.00	1.16	.07	.22	.013	.00	.00	PIPE
1195.564	1193.877	1.121	1194.997	1.00	.38	.00	1195.00	.00	.30	3.27	3.500	.000	.00	1 .0
2.579	.0147					.0000	.00	1.12	.07	.22	.013	.00	.00	PIPE
1198.143	1193.915	1.083	1194.997	1.00	.39	.00	1195.00	.00	.30	3.24	3.500	.000	.00	1 .0
2.476	.0147					.0000	.00	1.08	.08	.22	.013	.00	.00	PIPE
1200.619	1193.951	1.046	1194.997	1.00	.41	.00	1195.00	.00	.30	3.20	3.500	.000	.00	1 .0
2.379	.0147					.0000	.00	1.05	.08	.22	.013	.00	.00	PIPE
1202.998	1193.986	1.011	1194.997	1.00	.43	.00	1195.00	.00	.30	3.17	3.500	.000	.00	1 .0
2.297	.0147					.0000	.00	1.01	.09	.22	.013	.00	.00	PIPE
1205.295	1194.020	.977	1194.997	1.00	.46	.00	1195.00	.00	.30	3.14	3.500	.000	.00	1 .0
2.207	.0147					.0000	.00	.98	.10	.22	.013	.00	.00	PIPE
1207.501	1194.052	.944	1194.997	1.00	.48	.00	1195.00	.00	.30	3.11	3.500	.000	.00	1 .0
2.123	.0147					.0000	.00	.94	.10	.22	.013	.00	.00	PIPE
1209.625	1194.083	.913	1194.996	1.00	.50	.00	1195.00	.00	.30	3.07	3.500	.000	.00	1 .0
2.047	.0147					.0000	.00	.91	.11	.22	.013	.00	.00	PIPE
1211.672	1194.114	.882	1194.996	1.00	.53	.00	1195.00	.00	.30	3.04	3.500	.000	.00	1 .0
1.970	.0147					.0001	.00	.88	.12	.22	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1213.642	1194.143	.853	1194.996	1.00	.55	.00	1195.00	.00	.30	3.01	3.500	.000	.00	1 .0
1.900	.0147					.0001	.00	.85	.12	.22	.013	.00	.00	PIPE
1215.542	1194.171	.825	1194.995	1.00	.58	.01	1195.00	.00	.30	2.97	3.500	.000	.00	1 .0
1.830	.0147					.0001	.00	.82	.13	.22	.013	.00	.00	PIPE
1217.371	1194.197	.798	1194.995	1.00	.61	.01	1195.00	.00	.30	2.94	3.500	.000	.00	1 .0
1.759	.0147					.0001	.00	.80	.14	.22	.013	.00	.00	PIPE
1219.130	1194.223	.771	1194.995	1.00	.64	.01	1195.00	.00	.30	2.90	3.500	.000	.00	1 .0
1.688	.0147					.0001	.00	.77	.15	.22	.013	.00	.00	PIPE
1220.818	1194.248	.746	1194.994	1.00	.67	.01	1195.00	.00	.30	2.87	3.500	.000	.00	1 .0
1.630	.0147					.0001	.00	.75	.16	.22	.013	.00	.00	PIPE
1222.449	1194.272	.721	1194.993	1.00	.70	.01	1195.00	.00	.30	2.83	3.500	.000	.00	1 .0
1.573	.0147					.0001	.00	.72	.17	.22	.013	.00	.00	PIPE
1224.021	1194.295	.698	1194.993	1.00	.73	.01	1195.00	.00	.30	2.80	3.500	.000	.00	1 .0
1.508	.0147					.0001	.00	.70	.19	.22	.013	.00	.00	PIPE
1225.529	1194.317	.675	1194.992	1.00	.77	.01	1195.00	.00	.30	2.76	3.500	.000	.00	1 .0
1.456	.0147					.0002	.00	.67	.20	.22	.013	.00	.00	PIPE
1226.985	1194.339	.653	1194.992	1.00	.81	.01	1195.00	.00	.30	2.73	3.500	.000	.00	1 .0
1.397	.0147					.0002	.00	.65	.21	.22	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1228.381	1194.359	.632	1194.991	1.00	.85	.01	1195.00	.00	.30	2.69	3.500	.000	.00	1 .0
1.337	.0147					.0002	.00	.63	.23	.22	.013	.00	.00	PIPE
1229.719	1194.379	.611	1194.990	1.00	.89	.01	1195.00	.00	.30	2.66	3.500	.000	.00	1 .0
1.291	.0147					.0002	.00	.61	.24	.22	.013	.00	.00	PIPE
1231.009	1194.398	.591	1194.989	1.00	.93	.01	1195.00	.00	.30	2.62	3.500	.000	.00	1 .0
1.237	.0147					.0003	.00	.59	.26	.22	.013	.00	.00	PIPE
1232.246	1194.416	.572	1194.988	1.00	.98	.01	1195.00	.00	.30	2.59	3.500	.000	.00	1 .0
1.182	.0147					.0003	.00	.57	.27	.22	.013	.00	.00	PIPE
1233.429	1194.433	.553	1194.987	1.00	1.02	.02	1195.00	.00	.30	2.55	3.500	.000	.00	1 .0
1.134	.0147					.0004	.00	.55	.29	.22	.013	.00	.00	PIPE
1234.563	1194.450	.536	1194.986	1.00	1.07	.02	1195.00	.00	.30	2.52	3.500	.000	.00	1 .0
1.092	.0147					.0004	.00	.54	.31	.22	.013	.00	.00	PIPE
1235.655	1194.466	.518	1194.984	1.00	1.13	.02	1195.00	.00	.30	2.49	3.500	.000	.00	1 .0
1.035	.0147					.0005	.00	.52	.33	.22	.013	.00	.00	PIPE
1236.689	1194.482	.501	1194.983	1.00	1.18	.02	1195.00	.00	.30	2.45	3.500	.000	.00	1 .0
.991	.0147					.0005	.00	.50	.35	.22	.013	.00	.00	PIPE
1237.680	1194.496	.485	1194.981	1.00	1.24	.02	1195.01	.00	.30	2.42	3.500	.000	.00	1 .0
.260	.0147					.0006	.00	.49	.38	.22	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1237.940	1194.500	.481	1194.981	1.00	1.25	.02	1195.01	.00	.30	2.41	3.500	.000	.00	1 .0
WALL	ENTRANCE													
1237.940	1194.500	.523	1195.023	1.00	.38	.00	1195.03	.00	.11	5.00	5.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1191.000	4.000	1195.000	5.00	.52	.00	1195.00	.00	.67	.00	3.500	.000	.00	1 .0
34.049	.0147					.0000	.00	4.00	.00	.48	.013	.00	.00	PIPE
1034.049	1191.501	3.500	1195.001	5.00	.52	.00	1195.01	.00	.67	.00	3.500	.000	.00	1 .0
21.991	.0147					.0000	.00	3.50	.00	.48	.013	.00	.00	PIPE
1056.040	1191.824	3.176	1195.000	5.00	.55	.00	1195.00	.00	.67	2.03	3.500	.000	.00	1 .0
12.803	.0147					.0000	.00	3.18	.05	.48	.013	.00	.00	PIPE
1068.842	1192.013	2.987	1195.000	5.00	.57	.01	1195.00	.00	.67	2.48	3.500	.000	.00	1 .0
10.547	.0147					.0000	.00	2.99	.05	.48	.013	.00	.00	PIPE
1079.390	1192.168	2.832	1195.000	5.00	.60	.01	1195.01	.00	.67	2.75	3.500	.000	.00	1 .0
9.231	.0147					.0000	.00	2.83	.06	.48	.013	.00	.00	PIPE
1088.621	1192.304	2.696	1194.999	5.00	.63	.01	1195.01	.00	.67	2.95	3.500	.000	.00	1 .0
8.310	.0147					.0000	.00	2.70	.07	.48	.013	.00	.00	PIPE
1096.931	1192.426	2.573	1194.999	5.00	.66	.01	1195.01	.00	.67	3.09	3.500	.000	.00	1 .0
7.599	.0147					.0000	.00	2.57	.07	.48	.013	.00	.00	PIPE
1104.530	1192.538	2.461	1194.998	5.00	.69	.01	1195.01	.00	.67	3.20	3.500	.000	.00	1 .0
7.017	.0147					.0000	.00	2.46	.08	.48	.013	.00	.00	PIPE
1111.547	1192.641	2.357	1194.998	5.00	.73	.01	1195.01	.00	.67	3.28	3.500	.000	.00	1 .0
6.537	.0147					.0000	.00	2.36	.09	.48	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1118.083	1192.737	2.260	1194.997	5.00	.76	.01	1195.01	.00	.67	3.35	3.500	.000	.00	1 .0
6.125	.0147					.0000	.00	2.26	.10	.48	.013	.00	.00	PIPE
1124.208	1192.827	2.170	1194.997	5.00	.80	.01	1195.01	.00	.67	3.40	3.500	.000	.00	1 .0
5.752	.0147					.0001	.00	2.17	.10	.48	.013	.00	.00	PIPE
1129.960	1192.912	2.084	1194.996	5.00	.84	.01	1195.01	.00	.67	3.44	3.500	.000	.00	1 .0
5.427	.0147					.0001	.00	2.08	.11	.48	.013	.00	.00	PIPE
1135.388	1192.992	2.004	1194.995	5.00	.88	.01	1195.01	.00	.67	3.46	3.500	.000	.00	1 .0
5.129	.0147					.0001	.00	2.00	.12	.48	.013	.00	.00	PIPE
1140.517	1193.067	1.928	1194.995	5.00	.92	.01	1195.01	.00	.67	3.48	3.500	.000	.00	1 .0
4.865	.0147					.0001	.00	1.93	.13	.48	.013	.00	.00	PIPE
1145.381	1193.139	1.855	1194.994	5.00	.97	.01	1195.01	.00	.67	3.49	3.500	.000	.00	1 .0
4.613	.0147					.0001	.00	1.86	.14	.48	.013	.00	.00	PIPE
1149.994	1193.206	1.786	1194.993	5.00	1.01	.02	1195.01	.00	.67	3.50	3.500	.000	.00	1 .0
4.381	.0147					.0001	.00	1.79	.15	.48	.013	.00	.00	PIPE
1154.375	1193.271	1.721	1194.991	5.00	1.06	.02	1195.01	.00	.67	3.50	3.500	.000	.00	1 .0
4.175	.0147					.0001	.00	1.72	.16	.48	.013	.00	.00	PIPE
1158.550	1193.332	1.658	1194.990	5.00	1.11	.02	1195.01	.00	.67	3.50	3.500	.000	.00	1 .0
3.969	.0147					.0001	.00	1.66	.17	.48	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1162.519	1193.391	1.598	1194.989	5.00	1.17	.02	1195.01	.00	.67	3.49	3.500	.000	.00	1 .0
3.782	.0147					.0001	.00	1.60	.19	.48	.013	.00	.00	PIPE
1166.301	1193.446	1.541	1194.987	5.00	1.23	.02	1195.01	.00	.67	3.47	3.500	.000	.00	1 .0
3.607	.0147					.0002	.00	1.54	.20	.48	.013	.00	.00	PIPE
1169.908	1193.499	1.486	1194.985	5.00	1.29	.03	1195.01	.00	.67	3.46	3.500	.000	.00	1 .0
3.432	.0147					.0002	.00	1.49	.21	.48	.013	.00	.00	PIPE
1173.339	1193.550	1.434	1194.984	5.00	1.35	.03	1195.01	.00	.67	3.44	3.500	.000	.00	1 .0
3.275	.0147					.0002	.00	1.43	.23	.48	.013	.00	.00	PIPE
1176.615	1193.598	1.383	1194.981	5.00	1.41	.03	1195.01	.00	.67	3.42	3.500	.000	.00	1 .0
3.124	.0147					.0002	.00	1.38	.25	.48	.013	.00	.00	PIPE
1179.739	1193.644	1.335	1194.979	5.00	1.48	.03	1195.01	.00	.67	3.40	3.500	.000	.00	1 .0
2.971	.0147					.0003	.00	1.34	.26	.48	.013	.00	.00	PIPE
1182.710	1193.688	1.289	1194.976	5.00	1.56	.04	1195.01	.00	.67	3.38	3.500	.000	.00	1 .0
2.831	.0147					.0003	.00	1.29	.28	.48	.013	.00	.00	PIPE
1185.541	1193.729	1.244	1194.974	5.00	1.63	.04	1195.01	.00	.67	3.35	3.500	.000	.00	1 .0
2.688	.0147					.0004	.00	1.24	.30	.48	.013	.00	.00	PIPE
1188.229	1193.769	1.202	1194.970	5.00	1.71	.05	1195.02	.00	.67	3.32	3.500	.000	.00	1 .0
2.557	.0147					.0004	.00	1.20	.32	.48	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1190.786	1193.807	1.160	1194.967	5.00	1.79	.05	1195.02	.00	.67	3.30	3.500	.000	.00	1 .0
2.423	.0147					.0005	.00	1.16	.34	.48	.013	.00	.00	PIPE
1193.209	1193.842	1.121	1194.963	5.00	1.88	.05	1195.02	.00	.67	3.27	3.500	.000	.00	1 .0
2.300	.0147					.0005	.00	1.12	.37	.48	.013	.00	.00	PIPE
1195.509	1193.876	1.083	1194.959	5.00	1.97	.06	1195.02	.00	.67	3.24	3.500	.000	.00	1 .0
2.167	.0147					.0006	.00	1.08	.39	.48	.013	.00	.00	PIPE
1197.676	1193.908	1.046	1194.954	5.00	2.07	.07	1195.02	.00	.67	3.20	3.500	.000	.00	1 .0
2.038	.0147					.0007	.00	1.05	.42	.48	.013	.00	.00	PIPE
1199.714	1193.938	1.011	1194.949	5.00	2.17	.07	1195.02	.00	.67	3.17	3.500	.000	.00	1 .0
1.918	.0147					.0008	.00	1.01	.45	.48	.013	.00	.00	PIPE
1201.632	1193.966	.977	1194.943	5.00	2.28	.08	1195.02	.00	.67	3.14	3.500	.000	.00	1 .0
1.787	.0147					.0009	.00	.98	.48	.48	.013	.00	.00	PIPE
1203.419	1193.992	.944	1194.937	5.00	2.39	.09	1195.03	.00	.67	3.11	3.500	.000	.00	1 .0
1.657	.0147					.0010	.00	.94	.51	.48	.013	.00	.00	PIPE
1205.076	1194.017	.913	1194.930	5.00	2.50	.10	1195.03	.00	.67	3.07	3.500	.000	.00	1 .0
1.529	.0147					.0012	.00	.91	.55	.48	.013	.00	.00	PIPE
1206.604	1194.039	.882	1194.922	5.00	2.63	.11	1195.03	.00	.67	3.04	3.500	.000	.00	1 .0
.164	.0147					.0014	.00	.88	.58	.48	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1206.768	1194.042	.853	1194.895	5.00	2.76	.12	1195.01	.00	.67	3.01	3.500	.000	.00	1 .0
HYDRAULIC JUMP														
1206.768	1194.042	.498	1194.539	5.00	5.97	.55	1195.09	.00	.67	2.44	3.500	.000	.00	1 .0
11.847	.0147					.0122	.14	.50	1.80	.48	.013	.00	.00	PIPE
1218.615	1194.216	.514	1194.730	5.00	5.69	.50	1195.23	.00	.67	2.48	3.500	.000	.00	1 .0
7.076	.0147					.0107	.08	.51	1.69	.48	.013	.00	.00	PIPE
1225.690	1194.320	.531	1194.851	5.00	5.43	.46	1195.31	.00	.67	2.51	3.500	.000	.00	1 .0
4.417	.0147					.0093	.04	.53	1.58	.48	.013	.00	.00	PIPE
1230.107	1194.385	.549	1194.934	5.00	5.18	.42	1195.35	.00	.67	2.55	3.500	.000	.00	1 .0
2.971	.0147					.0081	.02	.55	1.48	.48	.013	.00	.00	PIPE
1233.079	1194.429	.567	1194.996	5.00	4.94	.38	1195.37	.00	.67	2.58	3.500	.000	.00	1 .0
2.011	.0147					.0071	.01	.57	1.39	.48	.013	.00	.00	PIPE
1235.090	1194.458	.587	1195.045	5.00	4.71	.34	1195.39	.00	.67	2.61	3.500	.000	.00	1 .0
1.360	.0147					.0062	.01	.59	1.30	.48	.013	.00	.00	PIPE
1236.450	1194.478	.606	1195.084	5.00	4.49	.31	1195.40	.00	.67	2.65	3.500	.000	.00	1 .0
.864	.0147					.0054	.00	.61	1.22	.48	.013	.00	.00	PIPE
1237.314	1194.491	.627	1195.117	5.00	4.28	.28	1195.40	.00	.67	2.68	3.500	.000	.00	1 .0
.475	.0147					.0047	.00	.63	1.14	.48	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1237.789	1194.498	.648	1195.146	5.00	4.08	.26	1195.40	.00	.67	2.72	3.500	.000	.00	1 .0
.151	.0147					.0041	.00	.65	1.07	.48	.013	.00	.00	PIPE
1237.940	1194.500	.671	1195.171	5.00	3.88	.23	1195.40	.00	.67	2.75	3.500	.000	.00	1 .0
WALL	ENTRANCE													
1237.940	1194.500	.978	1195.478	5.00	1.02	.02	1195.49	.00	.31	5.00	5.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1191.000	4.000	1195.000	10.00	1.04	.02	1195.02	.00	.96	.00	3.500	.000	.00	1 .0
34.221	.0147					.0001	.00	4.00	.00	.68	.013	.00	.00	PIPE
1034.221	1191.503	3.500	1195.003	10.00	1.04	.02	1195.02	.00	.96	.00	3.500	.000	.00	1 .0
22.009	.0147					.0001	.00	3.50	.00	.68	.013	.00	.00	PIPE
1056.230	1191.827	3.176	1195.003	10.00	1.09	.02	1195.02	.00	.96	2.03	3.500	.000	.00	1 .0
12.767	.0147					.0001	.00	3.18	.09	.68	.013	.00	.00	PIPE
1068.997	1192.015	2.987	1195.002	10.00	1.14	.02	1195.02	.00	.96	2.48	3.500	.000	.00	1 .0
10.496	.0147					.0001	.00	2.99	.11	.68	.013	.00	.00	PIPE
1079.492	1192.169	2.832	1195.001	10.00	1.20	.02	1195.02	.00	.96	2.75	3.500	.000	.00	1 .0
9.167	.0147					.0001	.00	2.83	.12	.68	.013	.00	.00	PIPE
1088.659	1192.304	2.696	1195.000	10.00	1.26	.02	1195.02	.00	.96	2.95	3.500	.000	.00	1 .0
8.234	.0147					.0001	.00	2.70	.13	.68	.013	.00	.00	PIPE
1096.893	1192.425	2.573	1194.998	10.00	1.32	.03	1195.03	.00	.96	3.09	3.500	.000	.00	1 .0
7.511	.0147					.0001	.00	2.57	.15	.68	.013	.00	.00	PIPE
1104.405	1192.536	2.461	1194.997	10.00	1.38	.03	1195.03	.00	.96	3.20	3.500	.000	.00	1 .0
6.917	.0147					.0001	.00	2.46	.16	.68	.013	.00	.00	PIPE
1111.322	1192.638	2.357	1194.995	10.00	1.45	.03	1195.03	.00	.96	3.28	3.500	.000	.00	1 .0
6.424	.0147					.0002	.00	2.36	.18	.68	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1117.746	1192.732	2.260	1194.992	10.00	1.52	.04	1195.03	.00	.96	3.35	3.500	.000	.00	1 .0
5.998	.0147					.0002	.00	2.26	.19	.68	.013	.00	.00	PIPE
1123.744	1192.820	2.170	1194.990	10.00	1.60	.04	1195.03	.00	.96	3.40	3.500	.000	.00	1 .0
5.610	.0147					.0002	.00	2.17	.21	.68	.013	.00	.00	PIPE
1129.354	1192.903	2.084	1194.987	10.00	1.67	.04	1195.03	.00	.96	3.44	3.500	.000	.00	1 .0
5.269	.0147					.0002	.00	2.08	.22	.68	.013	.00	.00	PIPE
1134.624	1192.980	2.004	1194.984	10.00	1.76	.05	1195.03	.00	.96	3.46	3.500	.000	.00	1 .0
4.953	.0147					.0003	.00	2.00	.24	.68	.013	.00	.00	PIPE
1139.576	1193.053	1.928	1194.981	10.00	1.84	.05	1195.03	.00	.96	3.48	3.500	.000	.00	1 .0
4.668	.0147					.0003	.00	1.93	.26	.68	.013	.00	.00	PIPE
1144.244	1193.122	1.855	1194.977	10.00	1.93	.06	1195.03	.00	.96	3.49	3.500	.000	.00	1 .0
4.394	.0147					.0003	.00	1.86	.28	.68	.013	.00	.00	PIPE
1148.638	1193.186	1.786	1194.973	10.00	2.03	.06	1195.04	.00	.96	3.50	3.500	.000	.00	1 .0
4.137	.0147					.0004	.00	1.79	.30	.68	.013	.00	.00	PIPE
1152.775	1193.247	1.721	1194.968	10.00	2.12	.07	1195.04	.00	.96	3.50	3.500	.000	.00	1 .0
3.905	.0147					.0004	.00	1.72	.32	.68	.013	.00	.00	PIPE
1156.680	1193.305	1.658	1194.963	10.00	2.23	.08	1195.04	.00	.96	3.50	3.500	.000	.00	1 .0
3.668	.0147					.0005	.00	1.66	.35	.68	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1160.348	1193.359	1.598	1194.957	10.00	2.34	.08	1195.04	.00	.96	3.49	3.500	.000	.00	1 .0
3.448	.0147					.0006	.00	1.60	.37	.68	.013	.00	.00	PIPE
1163.796	1193.409	1.541	1194.950	10.00	2.45	.09	1195.04	.00	.96	3.47	3.500	.000	.00	1 .0
3.236	.0147					.0007	.00	1.54	.40	.68	.013	.00	.00	PIPE
1167.032	1193.457	1.486	1194.943	10.00	2.57	.10	1195.05	.00	.96	3.46	3.500	.000	.00	1 .0
3.019	.0147					.0007	.00	1.49	.43	.68	.013	.00	.00	PIPE
1170.051	1193.501	1.434	1194.935	10.00	2.70	.11	1195.05	.00	.96	3.44	3.500	.000	.00	1 .0
2.816	.0147					.0009	.00	1.43	.46	.68	.013	.00	.00	PIPE
1172.866	1193.543	1.383	1194.926	10.00	2.83	.12	1195.05	.00	.96	3.42	3.500	.000	.00	1 .0
2.612	.0147					.0010	.00	1.38	.49	.68	.013	.00	.00	PIPE
1175.479	1193.581	1.335	1194.916	10.00	2.97	.14	1195.05	.00	.96	3.40	3.500	.000	.00	1 .0
2.400	.0147					.0011	.00	1.34	.52	.68	.013	.00	.00	PIPE
1177.879	1193.617	1.289	1194.905	10.00	3.11	.15	1195.06	.00	.96	3.38	3.500	.000	.00	1 .0
.462	.0147					.0012	.00	1.29	.56	.68	.013	.00	.00	PIPE
1178.341	1193.623	1.289	1194.912	10.00	3.11	.15	1195.06	.00	.96	3.38	3.500	.000	.00	1 .0
HYDRAULIC JUMP														
1178.341	1193.623	.683	1194.306	10.00	7.57	.89	1195.20	.00	.96	2.77	3.500	.000	.00	1 .0
16.949	.0147					.0134	.23	.68	1.93	.68	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1195.290	1193.873	.706	1194.578	10.00	7.21	.81	1195.39	.00	.96	2.81	3.500	.000	.00	1 .0
16.274	.0147					.0117	.19	.71	1.81	.68	.013	.00	.00	PIPE
1211.564	1194.112	.730	1194.842	10.00	6.88	.73	1195.58	.00	.96	2.84	3.500	.000	.00	1 .0
9.294	.0147					.0102	.09	.73	1.69	.68	.013	.00	.00	PIPE
1220.858	1194.249	.755	1195.003	10.00	6.56	.67	1195.67	.00	.96	2.88	3.500	.000	.00	1 .0
6.034	.0147					.0089	.05	.75	1.59	.68	.013	.00	.00	PIPE
1226.892	1194.337	.780	1195.118	10.00	6.25	.61	1195.72	.00	.96	2.91	3.500	.000	.00	1 .0
4.129	.0147					.0078	.03	.78	1.49	.68	.013	.00	.00	PIPE
1231.021	1194.398	.807	1195.205	10.00	5.96	.55	1195.76	.00	.96	2.95	3.500	.000	.00	1 .0
2.843	.0147					.0068	.02	.81	1.39	.68	.013	.00	.00	PIPE
1233.864	1194.440	.835	1195.275	10.00	5.68	.50	1195.78	.00	.96	2.98	3.500	.000	.00	1 .0
1.942	.0147					.0060	.01	.83	1.30	.68	.013	.00	.00	PIPE
1235.806	1194.469	.863	1195.332	10.00	5.42	.46	1195.79	.00	.96	3.02	3.500	.000	.00	1 .0
1.237	.0147					.0052	.01	.86	1.22	.68	.013	.00	.00	PIPE
1237.043	1194.487	.893	1195.380	10.00	5.17	.41	1195.79	.00	.96	3.05	3.500	.000	.00	1 .0
.688	.0147					.0046	.00	.89	1.14	.68	.013	.00	.00	PIPE
1237.731	1194.497	.924	1195.421	10.00	4.93	.38	1195.80	.00	.96	3.09	3.500	.000	.00	1 .0
.209	.0147					.0040	.00	.92	1.07	.68	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1237.940	1194.500	.957	1195.457	10.00	4.69	.34	1195.80	.00	.96	3.12	3.500	.000	.00	1 .0
WALL	ENTRANCE													
1237.940	1194.500	1.391	1195.891	10.00	1.44	.03	1195.92	.00	.50	5.00	5.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1191.000	4.000	1195.000	25.00	2.60	.10	1195.10	.00	1.54	.00	3.500	.000	.00	1 .0
35.481	.0147					.0006	.02	4.00	.00	1.07	.013	.00	.00	PIPE
1035.481	1191.522	3.500	1195.022	25.00	2.60	.10	1195.13	.00	1.54	.00	3.500	.000	.00	1 .0
22.137	.0147					.0006	.01	3.50	.00	1.07	.013	.00	.00	PIPE
1057.617	1191.848	3.176	1195.023	25.00	2.73	.12	1195.14	.00	1.54	2.03	3.500	.000	.00	1 .0
12.506	.0147					.0006	.01	3.18	.23	1.07	.013	.00	.00	PIPE
1070.124	1192.031	2.987	1195.019	25.00	2.86	.13	1195.15	.00	1.54	2.48	3.500	.000	.00	1 .0
10.118	.0147					.0006	.01	2.99	.27	1.07	.013	.00	.00	PIPE
1080.242	1192.180	2.832	1195.012	25.00	3.00	.14	1195.15	.00	1.54	2.75	3.500	.000	.00	1 .0
8.698	.0147					.0007	.01	2.83	.30	1.07	.013	.00	.00	PIPE
1088.939	1192.308	2.696	1195.004	25.00	3.14	.15	1195.16	.00	1.54	2.95	3.500	.000	.00	1 .0
7.677	.0147					.0007	.01	2.70	.34	1.07	.013	.00	.00	PIPE
1096.616	1192.421	2.573	1194.994	25.00	3.30	.17	1195.16	.00	1.54	3.09	3.500	.000	.00	1 .0
6.865	.0147					.0008	.01	2.57	.37	1.07	.013	.00	.00	PIPE
1103.481	1192.522	2.461	1194.983	25.00	3.46	.19	1195.17	.00	1.54	3.20	3.500	.000	.00	1 .0
6.175	.0147					.0009	.01	2.46	.41	1.07	.013	.00	.00	PIPE
1109.656	1192.613	2.357	1194.970	25.00	3.63	.20	1195.17	.00	1.54	3.28	3.500	.000	.00	1 .0
5.579	.0147					.0010	.01	2.36	.44	1.07	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1115.234	1192.695	2.260	1194.955	25.00	3.80	.22	1195.18	.00	1.54	3.35	3.500	.000	.00	1 .0
5.039	.0147					.0012	.01	2.26	.48	1.07	.013	.00	.00	PIPE
1120.273	1192.769	2.170	1194.939	25.00	3.99	.25	1195.19	.00	1.54	3.40	3.500	.000	.00	1 .0
4.077	.0147					.0013	.01	2.17	.52	1.07	.013	.00	.00	PIPE
1124.350	1192.829	2.084	1194.913	25.00	4.18	.27	1195.19	.00	1.54	3.44	3.500	.000	.00	1 .0
HYDRAULIC JUMP														
1124.350	1192.829	1.100	1193.929	25.00	9.66	1.45	1195.38	.00	1.54	3.25	3.500	.000	.00	1 .0
35.636	.0147					.0131	.47	1.10	1.91	1.07	.013	.00	.00	PIPE
1159.987	1193.353	1.118	1194.471	25.00	9.44	1.38	1195.85	.00	1.54	3.26	3.500	.000	.00	1 .0
30.174	.0147					.0118	.36	1.12	1.85	1.07	.013	.00	.00	PIPE
1190.160	1193.797	1.158	1194.955	25.00	9.00	1.26	1196.21	.00	1.54	3.29	3.500	.000	.00	1 .0
16.935	.0147					.0104	.18	1.16	1.73	1.07	.013	.00	.00	PIPE
1207.096	1194.046	1.199	1195.245	25.00	8.58	1.14	1196.39	.00	1.54	3.32	3.500	.000	.00	1 .0
10.910	.0147					.0091	.10	1.20	1.61	1.07	.013	.00	.00	PIPE
1218.005	1194.207	1.241	1195.448	25.00	8.18	1.04	1196.49	.00	1.54	3.35	3.500	.000	.00	1 .0
7.451	.0147					.0080	.06	1.24	1.51	1.07	.013	.00	.00	PIPE
1225.457	1194.316	1.286	1195.602	25.00	7.80	.94	1196.55	.00	1.54	3.37	3.500	.000	.00	1 .0
5.145	.0147					.0070	.04	1.29	1.41	1.07	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1230.601	1194.392	1.332	1195.724	25.00	7.44	.86	1196.58	.00	1.54	3.40	3.500	.000	.00	1 .0
3.497	.0147					.0061	.02	1.33	1.32	1.07	.013	.00	.00	PIPE
1234.098	1194.443	1.380	1195.823	25.00	7.09	.78	1196.60	.00	1.54	3.42	3.500	.000	.00	1 .0
2.230	.0147					.0054	.01	1.38	1.23	1.07	.013	.00	.00	PIPE
1236.328	1194.476	1.430	1195.906	25.00	6.76	.71	1196.62	.00	1.54	3.44	3.500	.000	.00	1 .0
1.226	.0147					.0047	.01	1.43	1.15	1.07	.013	.00	.00	PIPE
1237.554	1194.494	1.482	1195.977	25.00	6.45	.65	1196.62	.00	1.54	3.46	3.500	.000	.00	1 .0
.386	.0147					.0041	.00	1.48	1.07	1.07	.013	.00	.00	PIPE
1237.940	1194.500	1.538	1196.038	25.00	6.14	.59	1196.62	.00	1.54	3.47	3.500	.000	.00	1 .0
WALL	ENTRANCE													
1237.940	1194.500	2.248	1196.748	25.00	2.22	.08	1196.82	.00	.92	5.00	5.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1191.000	4.000	1195.000	50.00	5.20	.42	1195.42	.00	2.21	.00	3.500	.000	.00	1 .0
40.850	.0147					.0025	.10	4.00	.00	1.56	.013	.00	.00	PIPE
1040.850	1191.601	3.500	1195.101	50.00	5.20	.42	1195.52	.00	2.21	.00	3.500	.000	.00	1 .0
22.676	.0147					.0023	.05	3.50	.00	1.56	.013	.00	.00	PIPE
1063.526	1191.935	3.176	1195.110	50.00	5.45	.46	1195.57	.00	2.21	2.03	3.500	.000	.00	1 .0
11.059	.0147					.0022	.02	3.18	.45	1.56	.013	.00	.00	PIPE
1074.586	1192.097	2.987	1195.084	50.00	5.72	.51	1195.59	.00	2.21	2.48	3.500	.000	.00	1 .0
HYDRAULIC JUMP														
1074.586	1192.097	1.597	1193.694	50.00	11.70	2.12	1195.82	.00	2.21	3.49	3.500	.000	.00	1 .0
51.078	.0147					.0132	.67	1.60	1.86	1.56	.013	.00	.00	PIPE
1125.664	1192.849	1.624	1194.472	50.00	11.44	2.03	1196.51	.00	2.21	3.49	3.500	.000	.00	1 .0
46.044	.0147					.0120	.55	1.62	1.80	1.56	.013	.00	.00	PIPE
1171.708	1193.526	1.685	1195.211	50.00	10.91	1.85	1197.06	.00	2.21	3.50	3.500	.000	.00	1 .0
25.222	.0147					.0106	.27	1.68	1.68	1.56	.013	.00	.00	PIPE
1196.930	1193.897	1.749	1195.646	50.00	10.40	1.68	1197.33	.00	2.21	3.50	3.500	.000	.00	1 .0
15.909	.0147					.0093	.15	1.75	1.56	1.56	.013	.00	.00	PIPE
1212.839	1194.131	1.816	1195.946	50.00	9.92	1.53	1197.47	.00	2.21	3.50	3.500	.000	.00	1 .0
10.542	.0147					.0082	.09	1.82	1.46	1.56	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:36

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1223.381	1194.286	1.886	1196.172	50.00	9.46	1.39	1197.56	.00	2.21	3.49	3.500	.000	.00	1 .0
6.989	.0147					.0072	.05	1.89	1.35	1.56	.013	.00	.00	PIPE
1230.370	1194.389	1.960	1196.349	50.00	9.02	1.26	1197.61	.00	2.21	3.47	3.500	.000	.00	1 .0
4.415	.0147					.0064	.03	1.96	1.26	1.56	.013	.00	.00	PIPE
1234.786	1194.454	2.038	1196.492	50.00	8.60	1.15	1197.64	.00	2.21	3.45	3.500	.000	.00	1 .0
2.404	.0147					.0057	.01	2.04	1.17	1.56	.013	.00	.00	PIPE
1237.190	1194.489	2.121	1196.610	50.00	8.20	1.04	1197.65	.00	2.21	3.42	3.500	.000	.00	1 .0
.750	.0147					.0050	.00	2.12	1.08	1.56	.013	.00	.00	PIPE
1237.940	1194.500	2.209	1196.709	50.00	7.81	.95	1197.66	.00	2.21	3.38	3.500	.000	.00	1 .0
WALL	ENTRANCE													
1237.940	1194.500	3.381	1197.881	50.00	2.96	.14	1198.02	.00	1.46	5.00	5.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:37

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1191.000	4.000	1195.000	75.00	7.80	.94	1195.94	.00	2.71	.00	3.500	.000	.00	1 .0
51.738	.0147					.0056	.29	4.00	.00	1.98	.013	.00	.00	PIPE
1051.738	1191.761	3.526	1195.286	75.00	7.80	.94	1196.23	.00	2.71	.00	3.500	.000	.00	1 .0
HYDRAULIC JUMP														
1051.738	1191.761	2.029	1193.790	75.00	12.97	2.61	1196.40	.00	2.71	3.46	3.500	.000	.00	1 .0
84.425	.0147					.0131	1.10	2.03	1.77	1.98	.013	.00	.00	PIPE
1136.163	1193.003	2.093	1195.096	75.00	12.49	2.42	1197.52	.00	2.71	3.43	3.500	.000	.00	1 .0
45.031	.0147					.0117	.53	2.09	1.66	1.98	.013	.00	.00	PIPE
1181.194	1193.665	2.179	1195.844	75.00	11.91	2.20	1198.05	.00	2.71	3.39	3.500	.000	.00	1 .0
25.265	.0147					.0104	.26	2.18	1.54	1.98	.013	.00	.00	PIPE
1206.459	1194.037	2.270	1196.307	75.00	11.36	2.00	1198.31	.00	2.71	3.34	3.500	.000	.00	1 .0
15.449	.0147					.0092	.14	2.27	1.42	1.98	.013	.00	.00	PIPE
1221.909	1194.264	2.368	1196.632	75.00	10.83	1.82	1198.45	.00	2.71	3.27	3.500	.000	.00	1 .0
9.380	.0147					.0082	.08	2.37	1.31	1.98	.013	.00	.00	PIPE
1231.289	1194.402	2.472	1196.874	75.00	10.32	1.66	1198.53	.00	2.71	3.19	3.500	.000	.00	1 .0
5.054	.0147					.0073	.04	2.47	1.21	1.98	.013	.00	.00	PIPE
1236.343	1194.477	2.585	1197.062	75.00	9.84	1.50	1198.57	.00	2.71	3.08	3.500	.000	.00	1 .0
1.597	.0147					.0066	.01	2.59	1.10	1.98	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:37

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1237.940	1194.500	2.710	1197.210	75.00	9.38	1.37	1198.58	.00	2.71	2.93	3.500	.000	.00	1 .0
WALL	ENTRANCE													
1237.940	1194.500	4.723	1199.223	75.00	3.18	.16	1199.38	.00	1.91	5.00	5.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 9:28:37

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LATB3.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / SF Ave	Vel Head / HF	Energy Grd.El. / SE Dpth	Super Elev / Froude N	Critical Depth / Norm Dp	Flow Top Width / "N"	Height/Dia.-FT / X-Fall	Base Wt or I.D. / ZR	ZL	No Wth Prs/Pip / Type Ch
1000.000	1191.000	4.000	1195.000	100.00	10.39	1.68	1196.68	.00	3.07	.00	3.500	.000	.00	1 .0
71.262	.0147				.0099	.70	4.00	.00	2.41	.013	.00	.00		PIPE
1071.262	1192.048	3.655	1195.704	100.00	10.39	1.68	1197.38	.00	3.07	.00	3.500	.000	.00	1 .0
HYDRAULIC JUMP														
1071.262	1192.048	2.475	1194.523	100.00	13.75	2.94	1197.46	.00	3.07	3.19	3.500	.000	.00	1 .0
49.531	.0147				.0135	.67	2.47	1.60	2.41	.013	.00	.00		PIPE
1120.793	1192.777	2.511	1195.287	100.00	13.54	2.85	1198.13	.00	3.07	3.15	3.500	.000	.00	1 .0
65.676	.0147				.0125	.82	2.51	1.56	2.41	.013	.00	.00		PIPE
1186.469	1193.743	2.627	1196.370	100.00	12.91	2.59	1198.96	.00	3.07	3.03	3.500	.000	.00	1 .0
31.084	.0147				.0113	.35	2.63	1.42	2.41	.013	.00	.00		PIPE
1217.554	1194.200	2.756	1196.956	100.00	12.31	2.35	1199.31	.00	3.07	2.86	3.500	.000	.00	1 .0
15.460	.0147				.0102	.16	2.76	1.29	2.41	.013	.00	.00		PIPE
1233.014	1194.427	2.899	1197.327	100.00	11.73	2.14	1199.47	.00	3.07	2.64	3.500	.000	.00	1 .0
4.926	.0147				.0093	.05	2.90	1.15	2.41	.013	.00	.00		PIPE
1237.940	1194.500	3.068	1197.568	100.00	11.19	1.94	1199.51	.00	3.07	2.30	3.500	.000	.00	1 .0
WALL ENTRANCE														
1237.940	1194.500	6.387	1200.887	100.00	3.13	.15	1201.04	.00	2.32	5.00	5.000	5.000	.00	0 .0

APPENDIX D.7: BASIN "B-1B" WEIR CALCULATIONS FOR BASIN OUTFLOW

BASIN "B-1B" OUTFLOW CALCULATIONS

Weir Structure $Q = CLH^{(3/2)}$

Elevation	H	C	L	Q
1207.3				0
1208	0.7	2.8	5.5	9.0
1209	1.7	2.8	5.5	34.1
1210	2.7	2.8	5.5	68.3
1211	3.7	2.8	5.5	109.6
1212	4.7	2.8	5.5	156.9

APPENDIX D.8: BASIN "B-2" WSPG CALCULATIONS FOR BASIN OUTFLOW

```
T1 ALBERHILL STORM DRAIN                                                    0
T2 WSPG RUN FOR LINE B
T3 FN: LINEB.WSW
SO   1000.0001176.000  1                          1176.000
R    1022.6001176.171  1      .013                              .000    .000 0
R    1069.8601176.529  1      .013                            60.173    .000 0
R    1107.7001176.815  1      .013                              .000    .000 0
R    1300.9301178.278  1      .013                           -60.499    .000 0
R    1975.6701183.386  1      .013                              .000    .000 0
R    2045.7801183.917  1      .013                           -44.633    .000 0
R    2214.9801185.197  1      .013                              .000    .000 0
R    2232.4201185.329  1      .013                            22.205    .000 0
R    2340.1501186.145  1      .013                              .000    .000 0
R    2689.3601188.788  3      .013                              .000    .000 0
R    2741.7101189.185  3      .013                           -29.994    .000 0
R    2848.7501190.000  3      .013                              .000    .000 0
WE   2848.7501190.000  4      .250
SH   2848.7501190.000  4                          1190.000
CD   1  4   1    .000   3.500     .000  .000  .000   .00
CD   2  4   1    .000   3.000     .000  .000  .000   .00
CD   3  4   1    .000   3.000     .000  .000  .000   .00
CD   4  2   0    .000  10.000    5.000  .000  .000   .00
Q             1.000   .0
Q             5.000   .0
Q            10.000   .0
Q            25.000   .0
Q            50.000   .0
Q            75.000   .0
Q           100.000   .0
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Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	.263	1176.263	1.00	3.04	.14	1176.41	.00	.30	1.85	3.500	.000	.00	1 .0
12.420	.0076					.0076	.09	.26	1.27	.26	.013	.00	.00	PIPE
1012.420	1176.094	.263	1176.357	1.00	3.04	.14	1176.50	.00	.30	1.85	3.500	.000	.00	1 .0
10.180	.0076					.0076	.08	.26	1.27	.26	.013	.00	.00	PIPE
1022.600	1176.171	.263	1176.434	1.00	3.04	.14	1176.58	.01	.30	1.85	3.500	.000	.00	1 .0
37.230	.0076					.0076	.28	.27	1.27	.26	.013	.00	.00	PIPE
1059.830	1176.453	.263	1176.716	1.00	3.04	.14	1176.86	.01	.30	1.85	3.500	.000	.00	1 .0
10.030	.0076					.0076	.08	.27	1.27	.26	.013	.00	.00	PIPE
1069.860	1176.529	.263	1176.792	1.00	3.04	.14	1176.94	.00	.30	1.85	3.500	.000	.00	1 .0
28.747	.0076					.0076	.22	.26	1.27	.26	.013	.00	.00	PIPE
1098.607	1176.746	.263	1177.009	1.00	3.04	.14	1177.15	.00	.30	1.85	3.500	.000	.00	1 .0
9.093	.0076					.0076	.07	.26	1.27	.26	.013	.00	.00	PIPE
1107.700	1176.815	.263	1177.078	1.00	3.04	.14	1177.22	.00	.30	1.85	3.500	.000	.00	1 .0
130.144	.0076					.0076	.99	.27	1.27	.26	.013	.00	.00	PIPE
1237.844	1177.800	.263	1178.063	1.00	3.04	.14	1178.21	.00	.30	1.85	3.500	.000	.00	1 .0
63.086	.0076					.0076	.48	.27	1.27	.26	.013	.00	.00	PIPE
1300.930	1178.278	.263	1178.541	1.00	3.04	.14	1178.68	.00	.30	1.85	3.500	.000	.00	1 .0
665.967	.0076					.0076	5.04	.26	1.27	.26	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1966.897	1183.320	.263	1183.583	1.00	3.04	.14	1183.73	.00	.30	1.85	3.500	.000	.00	1 .0
8.773	.0076					.0076	.07	.26	1.27	.26	.013	.00	.00	PIPE
1975.670	1183.386	.263	1183.649	1.00	3.04	.14	1183.79	.01	.30	1.85	3.500	.000	.00	1 .0
58.977	.0076					.0076	.45	.27	1.27	.26	.013	.00	.00	PIPE
2034.647	1183.833	.263	1184.096	1.00	3.04	.14	1184.24	.01	.30	1.85	3.500	.000	.00	1 .0
11.133	.0076					.0076	.08	.27	1.27	.26	.013	.00	.00	PIPE
2045.780	1183.917	.263	1184.180	1.00	3.04	.14	1184.32	.00	.30	1.85	3.500	.000	.00	1 .0
164.071	.0076					.0076	1.24	.26	1.27	.26	.013	.00	.00	PIPE
2209.851	1185.158	.263	1185.421	1.00	3.04	.14	1185.56	.00	.30	1.85	3.500	.000	.00	1 .0
5.129	.0076					.0076	.04	.26	1.27	.26	.013	.00	.00	PIPE
2214.980	1185.197	.263	1185.460	1.00	3.04	.14	1185.60	.01	.30	1.85	3.500	.000	.00	1 .0
8.559	.0076					.0076	.06	.27	1.27	.26	.013	.00	.00	PIPE
2223.539	1185.262	.263	1185.525	1.00	3.04	.14	1185.67	.01	.30	1.85	3.500	.000	.00	1 .0
8.881	.0076					.0076	.07	.27	1.27	.26	.013	.00	.00	PIPE
2232.420	1185.329	.263	1185.592	1.00	3.04	.14	1185.74	.00	.30	1.85	3.500	.000	.00	1 .0
92.019	.0076					.0076	.70	.26	1.27	.26	.013	.00	.00	PIPE
2324.438	1186.026	.263	1186.289	1.00	3.04	.14	1186.43	.00	.30	1.85	3.500	.000	.00	1 .0
10.231	.0076					.0074	.08	.26	1.27	.26	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2334.669	1186.104	.265	1186.369	1.00	3.01	.14	1186.51	.00	.30	1.85	3.500	.000	.00	1 .0
5.480	.0076					.0068	.04	.27	1.25	.26	.013	.00	.00	PIPE
2340.150	1186.145	.274	1186.419	1.00	3.11	.15	1186.57	.00	.31	1.73	3.000	.000	.00	1 .0
338.888	.0076					.0076	2.56	.27	1.27	.27	.013	.00	.00	PIPE
2679.038	1188.710	.274	1188.984	1.00	3.11	.15	1189.13	.00	.31	1.73	3.000	.000	.00	1 .0
10.322	.0076					.0076	.08	.27	1.27	.27	.013	.00	.00	PIPE
2689.360	1188.788	.274	1189.062	1.00	3.11	.15	1189.21	.01	.31	1.73	3.000	.000	.00	1 .0
42.237	.0076					.0076	.32	.28	1.27	.27	.013	.00	.00	PIPE
2731.597	1189.108	.274	1189.382	1.00	3.11	.15	1189.53	.01	.31	1.73	3.000	.000	.00	1 .0
10.113	.0076					.0076	.08	.28	1.27	.27	.013	.00	.00	PIPE
2741.710	1189.185	.273	1189.458	1.00	3.11	.15	1189.61	.00	.31	1.73	3.000	.000	.00	1 .0
92.048	.0076					.0076	.70	.27	1.27	.27	.013	.00	.00	PIPE
2833.758	1189.886	.273	1190.159	1.00	3.11	.15	1190.31	.00	.31	1.73	3.000	.000	.00	1 .0
10.239	.0076					.0073	.07	.27	1.27	.27	.013	.00	.00	PIPE
2843.997	1189.964	.279	1190.243	1.00	3.02	.14	1190.38	.00	.31	1.74	3.000	.000	.00	1 .0
3.361	.0076					.0065	.02	.28	1.22	.27	.013	.00	.00	PIPE
2847.358	1189.989	.288	1190.278	1.00	2.88	.13	1190.41	.00	.31	1.77	3.000	.000	.00	1 .0
1.092	.0076					.0057	.01	.29	1.14	.27	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2848.449	1189.998	.298	1190.296	1.00	2.74	.12	1190.41	.00	.31	1.79	3.000	.000	.00	1 .0
.301	.0076					.0049	.00	.30	1.07	.27	.013	.00	.00	PIPE
2848.750	1190.000	.309	1190.309	1.00	2.60	.11	1190.41	.00	.31	1.82	3.000	.000	.00	1 .0
WALL	ENTRANCE													
2848.750	1190.000	.456	1190.456	1.00	.44	.00	1190.46	.00	.11	5.00	10.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	.568	1176.568	5.00	4.93	.38	1176.95	.00	.67	2.58	3.500	.000	.00	1 .0
22.600	.0076					.0076	.17	.57	1.39	.57	.013	.00	.00	PIPE
1022.600	1176.171	.568	1176.739	5.00	4.93	.38	1177.12	.04	.67	2.58	3.500	.000	.00	1 .0
13.511	.0076					.0076	.10	.61	1.39	.57	.013	.00	.00	PIPE
1036.111	1176.273	.568	1176.841	5.00	4.93	.38	1177.22	.04	.67	2.58	3.500	.000	.00	1 .0
33.749	.0076					.0076	.26	.61	1.39	.57	.013	.00	.00	PIPE
1069.860	1176.529	.568	1177.097	5.00	4.93	.38	1177.47	.00	.67	2.58	3.500	.000	.00	1 .0
5.129	.0076					.0076	.04	.57	1.39	.57	.013	.00	.00	PIPE
1074.989	1176.568	.568	1177.136	5.00	4.93	.38	1177.51	.00	.67	2.58	3.500	.000	.00	1 .0
32.711	.0076					.0076	.25	.57	1.39	.57	.013	.00	.00	PIPE
1107.700	1176.815	.568	1177.383	5.00	4.93	.38	1177.76	.01	.67	2.58	3.500	.000	.00	1 .0
158.077	.0076					.0076	1.20	.58	1.39	.57	.013	.00	.00	PIPE
1265.777	1178.012	.568	1178.580	5.00	4.93	.38	1178.96	.01	.67	2.58	3.500	.000	.00	1 .0
35.153	.0076					.0076	.27	.58	1.39	.57	.013	.00	.00	PIPE
1300.930	1178.278	.568	1178.846	5.00	4.93	.38	1179.22	.00	.67	2.58	3.500	.000	.00	1 .0
647.441	.0076					.0076	4.90	.57	1.39	.57	.013	.00	.00	PIPE
1948.371	1183.179	.568	1183.747	5.00	4.93	.38	1184.13	.00	.67	2.58	3.500	.000	.00	1 .0
27.299	.0076					.0076	.21	.57	1.39	.57	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1975.670	1183.386	.568	1183.954	5.00	4.93	.38	1184.33	.02	.67	2.58	3.500	.000	.00	1 .0
35.165	.0076					.0076	.27	.59	1.39	.57	.013	.00	.00	PIPE
2010.835	1183.652	.568	1184.220	5.00	4.93	.38	1184.60	.02	.67	2.58	3.500	.000	.00	1 .0
34.945	.0076					.0076	.26	.59	1.39	.57	.013	.00	.00	PIPE
2045.780	1183.917	.568	1184.485	5.00	4.93	.38	1184.86	.00	.67	2.58	3.500	.000	.00	1 .0
136.145	.0076					.0076	1.03	.57	1.39	.57	.013	.00	.00	PIPE
2181.925	1184.947	.568	1185.515	5.00	4.93	.38	1185.89	.00	.67	2.58	3.500	.000	.00	1 .0
33.055	.0076					.0076	.25	.57	1.39	.57	.013	.00	.00	PIPE
2214.980	1185.197	.568	1185.765	5.00	4.93	.38	1186.14	.04	.67	2.58	3.500	.000	.00	1 .0
17.440	.0076					.0076	.13	.61	1.39	.57	.013	.00	.00	PIPE
2232.420	1185.329	.568	1185.897	5.00	4.93	.38	1186.27	.00	.67	2.58	3.500	.000	.00	1 .0
59.343	.0076					.0076	.45	.57	1.39	.57	.013	.00	.00	PIPE
2291.763	1185.779	.568	1186.346	5.00	4.93	.38	1186.72	.00	.67	2.58	3.500	.000	.00	1 .0
33.022	.0076					.0074	.24	.57	1.39	.57	.013	.00	.00	PIPE
2324.785	1186.029	.576	1186.605	5.00	4.83	.36	1186.97	.00	.67	2.60	3.500	.000	.00	1 .0
15.365	.0076					.0067	.10	.58	1.35	.57	.013	.00	.00	PIPE
2340.150	1186.145	.595	1186.740	5.00	5.03	.39	1187.13	.00	.70	2.39	3.000	.000	.00	1 .0
314.827	.0076					.0076	2.38	.60	1.37	.60	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2654.977	1188.528	.595	1189.123	5.00	5.03	.39	1189.52	.00	.70	2.39	3.000	.000	.00	1 .0
34.383	.0076					.0076	.26	.60	1.37	.60	.013	.00	.00	PIPE
2689.360	1188.788	.595	1189.383	5.00	5.03	.39	1189.78	.02	.70	2.39	3.000	.000	.00	1 .0
18.779	.0076					.0076	.14	.61	1.37	.59	.013	.00	.00	PIPE
2708.139	1188.930	.595	1189.525	5.00	5.03	.39	1189.92	.02	.70	2.39	3.000	.000	.00	1 .0
33.571	.0076					.0076	.26	.61	1.37	.59	.013	.00	.00	PIPE
2741.710	1189.185	.594	1189.779	5.00	5.04	.39	1190.17	.00	.70	2.39	3.000	.000	.00	1 .0
57.813	.0076					.0076	.44	.59	1.38	.59	.013	.00	.00	PIPE
2799.522	1189.625	.594	1190.219	5.00	5.04	.39	1190.61	.00	.70	2.39	3.000	.000	.00	1 .0
32.919	.0076					.0072	.24	.59	1.38	.59	.013	.00	.00	PIPE
2832.442	1189.876	.611	1190.487	5.00	4.84	.36	1190.85	.00	.70	2.42	3.000	.000	.00	1 .0
9.844	.0076					.0064	.06	.61	1.30	.59	.013	.00	.00	PIPE
2842.285	1189.951	.632	1190.583	5.00	4.61	.33	1190.91	.00	.70	2.45	3.000	.000	.00	1 .0
4.147	.0076					.0056	.02	.63	1.22	.59	.013	.00	.00	PIPE
2846.432	1189.982	.654	1190.636	5.00	4.40	.30	1190.94	.00	.70	2.48	3.000	.000	.00	1 .0
1.811	.0076					.0049	.01	.65	1.14	.59	.013	.00	.00	PIPE
2848.243	1189.996	.676	1190.672	5.00	4.19	.27	1190.94	.00	.70	2.51	3.000	.000	.00	1 .0
.507	.0076					.0042	.00	.68	1.07	.59	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2848.750	1190.000	.700	1190.700	5.00	3.99	.25	1190.95	.00	.70	2.54	3.000	.000	.00	1 .0
WALL	ENTRANCE													
2848.750	1190.000	1.030	1191.030	5.00	.97	.01	1191.04	.00	.31	5.00	10.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	.799	1176.799	10.00	6.05	.57	1177.37	.00	.96	2.94	3.500	.000	.00	1 .0
22.600	.0076					.0076	.17	.80	1.42	.80	.013	.00	.00	PIPE
1022.600	1176.171	.799	1176.970	10.00	6.05	.57	1177.54	.07	.96	2.94	3.500	.000	.00	1 .0
47.260	.0076					.0076	.36	.87	1.42	.80	.013	.00	.00	PIPE
1069.860	1176.529	.799	1177.328	10.00	6.05	.57	1177.90	.00	.96	2.94	3.500	.000	.00	1 .0
37.840	.0076					.0076	.29	.80	1.42	.80	.013	.00	.00	PIPE
1107.700	1176.815	.799	1177.614	10.00	6.05	.57	1178.18	.02	.96	2.94	3.500	.000	.00	1 .0
106.433	.0076					.0076	.81	.82	1.42	.80	.013	.00	.00	PIPE
1214.133	1177.621	.799	1178.419	10.00	6.05	.57	1178.99	.02	.96	2.94	3.500	.000	.00	1 .0
86.797	.0076					.0076	.66	.82	1.42	.80	.013	.00	.00	PIPE
1300.930	1178.278	.799	1179.077	10.00	6.05	.57	1179.64	.00	.96	2.94	3.500	.000	.00	1 .0
622.805	.0076					.0076	4.71	.80	1.42	.80	.013	.00	.00	PIPE
1923.735	1182.993	.799	1183.792	10.00	6.05	.57	1184.36	.00	.96	2.94	3.500	.000	.00	1 .0
51.935	.0076					.0076	.39	.80	1.42	.80	.013	.00	.00	PIPE
1975.670	1183.386	.799	1184.185	10.00	6.05	.57	1184.75	.04	.96	2.94	3.500	.000	.00	1 .0
16.579	.0076					.0076	.13	.84	1.42	.80	.013	.00	.00	PIPE
1992.249	1183.512	.799	1184.310	10.00	6.05	.57	1184.88	.04	.96	2.94	3.500	.000	.00	1 .0
53.531	.0076					.0076	.41	.84	1.42	.80	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2045.780	1183.917	.799	1184.716	10.00	6.05	.57	1185.28	.00	.96	2.94	3.500	.000	.00	1 .0
115.148	.0076					.0076	.87	.80	1.42	.80	.013	.00	.00	PIPE
2160.928	1184.788	.799	1185.587	10.00	6.05	.57	1186.15	.00	.96	2.94	3.500	.000	.00	1 .0
54.052	.0076					.0076	.41	.80	1.42	.80	.013	.00	.00	PIPE
2214.980	1185.197	.799	1185.996	10.00	6.05	.57	1186.56	.07	.96	2.94	3.500	.000	.00	1 .0
17.440	.0076					.0076	.13	.87	1.42	.80	.013	.00	.00	PIPE
2232.420	1185.329	.799	1186.128	10.00	6.05	.57	1186.70	.00	.96	2.94	3.500	.000	.00	1 .0
34.956	.0076					.0076	.26	.80	1.42	.80	.013	.00	.00	PIPE
2267.376	1185.594	.799	1186.392	10.00	6.05	.57	1186.96	.00	.96	2.94	3.500	.000	.00	1 .0
52.438	.0076					.0073	.38	.80	1.42	.80	.013	.00	.00	PIPE
2319.813	1185.991	.815	1186.806	10.00	5.88	.54	1187.34	.00	.96	2.96	3.500	.000	.00	1 .0
20.336	.0076					.0066	.13	.81	1.37	.80	.013	.00	.00	PIPE
2340.150	1186.145	.843	1186.988	10.00	6.14	.59	1187.57	.00	1.00	2.70	3.000	.000	.00	1 .0
295.816	.0076					.0076	2.24	.84	1.39	.84	.013	.00	.00	PIPE
2635.966	1188.384	.843	1189.227	10.00	6.14	.59	1189.81	.00	1.00	2.70	3.000	.000	.00	1 .0
53.394	.0076					.0076	.41	.84	1.39	.84	.013	.00	.00	PIPE
2689.360	1188.788	.841	1189.630	10.00	6.16	.59	1190.22	.03	1.00	2.70	3.000	.000	.00	1 .0
52.350	.0076					.0076	.40	.87	1.40	.84	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2741.710	1189.185	.841	1190.027	10.00	6.16	.59	1190.62	.00	1.00	2.70	3.000	.000	.00	1 .0
32.917	.0076					.0076	.25	.84	1.40	.84	.013	.00	.00	PIPE
2774.627	1189.436	.841	1190.277	10.00	6.16	.59	1190.87	.00	1.00	2.70	3.000	.000	.00	1 .0
51.263	.0076					.0071	.37	.84	1.40	.84	.013	.00	.00	PIPE
2825.890	1189.826	.870	1190.696	10.00	5.87	.54	1191.23	.00	1.00	2.72	3.000	.000	.00	1 .0
13.500	.0076					.0063	.08	.87	1.31	.84	.013	.00	.00	PIPE
2839.391	1189.929	.901	1190.829	10.00	5.60	.49	1191.32	.00	1.00	2.75	3.000	.000	.00	1 .0
5.984	.0076					.0055	.03	.90	1.22	.84	.013	.00	.00	PIPE
2845.375	1189.974	.932	1190.906	10.00	5.34	.44	1191.35	.00	1.00	2.78	3.000	.000	.00	1 .0
2.646	.0076					.0048	.01	.93	1.15	.84	.013	.00	.00	PIPE
2848.020	1189.994	.965	1190.959	10.00	5.09	.40	1191.36	.00	1.00	2.80	3.000	.000	.00	1 .0
.730	.0076					.0042	.00	.97	1.07	.84	.013	.00	.00	PIPE
2848.750	1190.000	1.000	1191.000	10.00	4.85	.36	1191.36	.00	1.00	2.83	3.000	.000	.00	1 .0
WALL	ENTRANCE													
2848.750	1190.000	1.475	1191.475	10.00	1.36	.03	1191.50	.00	.50	5.00	10.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	1.280	1177.280	25.00	7.85	.96	1178.24	.00	1.54	3.37	3.500	.000	.00	1 .0
22.600	.0076					.0076	.17	1.28	1.42	1.28	.013	.00	.00	PIPE
1022.600	1176.171	1.280	1177.451	25.00	7.85	.96	1178.41	.14	1.54	3.37	3.500	.000	.00	1 .0
47.260	.0076					.0076	.36	1.42	1.42	1.28	.013	.00	.00	PIPE
1069.860	1176.529	1.280	1177.809	25.00	7.85	.96	1178.77	.00	1.54	3.37	3.500	.000	.00	1 .0
37.840	.0076					.0076	.29	1.28	1.42	1.28	.013	.00	.00	PIPE
1107.700	1176.815	1.280	1178.095	25.00	7.85	.96	1179.05	.04	1.54	3.37	3.500	.000	.00	1 .0
78.302	.0076					.0076	.59	1.32	1.42	1.28	.013	.00	.00	PIPE
1186.002	1177.408	1.280	1178.688	25.00	7.85	.96	1179.64	.04	1.54	3.37	3.500	.000	.00	1 .0
114.928	.0076					.0076	.87	1.32	1.42	1.28	.013	.00	.00	PIPE
1300.930	1178.278	1.280	1179.558	25.00	7.85	.96	1180.51	.00	1.54	3.37	3.500	.000	.00	1 .0
581.957	.0076					.0076	4.41	1.28	1.42	1.28	.013	.00	.00	PIPE
1882.887	1182.684	1.280	1183.964	25.00	7.85	.96	1184.92	.00	1.54	3.37	3.500	.000	.00	1 .0
92.783	.0076					.0076	.70	1.28	1.42	1.28	.013	.00	.00	PIPE
1975.670	1183.386	1.280	1184.666	25.00	7.85	.96	1185.62	.07	1.54	3.37	3.500	.000	.00	1 .0
70.110	.0076					.0076	.53	1.35	1.42	1.28	.013	.00	.00	PIPE
2045.780	1183.917	1.280	1185.197	25.00	7.84	.96	1186.15	.00	1.54	3.37	3.500	.000	.00	1 .0
76.018	.0076					.0076	.58	1.28	1.42	1.28	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2121.798	1184.492	1.280	1185.772	25.00	7.84	.96	1186.73	.00	1.54	3.37	3.500	.000	.00	1 .0
93.182	.0076					.0076	.70	1.28	1.42	1.28	.013	.00	.00	PIPE
2214.980	1185.197	1.281	1186.478	25.00	7.84	.95	1187.43	.14	1.54	3.37	3.500	.000	.00	1 .0
17.440	.0076					.0075	.13	1.42	1.42	1.28	.013	.00	.00	PIPE
2232.420	1185.329	1.282	1186.611	25.00	7.83	.95	1187.56	.00	1.54	3.37	3.500	.000	.00	1 .0
6.328	.0076					.0075	.05	1.28	1.42	1.28	.013	.00	.00	PIPE
2238.748	1185.377	1.282	1186.659	25.00	7.83	.95	1187.61	.00	1.54	3.37	3.500	.000	.00	1 .0
79.195	.0076					.0071	.56	1.28	1.42	1.28	.013	.00	.00	PIPE
2317.942	1185.977	1.328	1187.305	25.00	7.47	.87	1188.17	.00	1.54	3.40	3.500	.000	.00	1 .0
22.208	.0076					.0062	.14	1.33	1.33	1.28	.013	.00	.00	PIPE
2340.150	1186.145	1.376	1187.521	25.00	7.90	.97	1188.49	.00	1.61	2.99	3.000	.000	.00	1 .0
261.202	.0076					.0076	1.98	1.38	1.35	1.38	.013	.00	.00	PIPE
2601.352	1188.122	1.376	1189.498	25.00	7.90	.97	1190.47	.00	1.61	2.99	3.000	.000	.00	1 .0
88.009	.0076					.0076	.67	1.38	1.35	1.38	.013	.00	.00	PIPE
2689.360	1188.788	1.377	1190.165	25.00	7.90	.97	1191.13	.06	1.61	2.99	3.000	.000	.00	1 .0
52.350	.0076					.0075	.39	1.43	1.35	1.38	.013	.00	.00	PIPE
2741.710	1189.185	1.380	1190.565	25.00	7.88	.96	1191.53	.00	1.61	2.99	3.000	.000	.00	1 .0
35.625	.0076					.0074	.26	1.38	1.35	1.37	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2777.335	1189.456	1.388	1190.844	25.00	7.82	.95	1191.79	.00	1.61	2.99	3.000	.000	.00	1 .0
48.131	.0076					.0069	.33	1.39	1.33	1.37	.013	.00	.00	PIPE
2825.467	1189.823	1.440	1191.263	25.00	7.45	.86	1192.13	.00	1.61	3.00	3.000	.000	.00	1 .0
15.477	.0076					.0061	.09	1.44	1.24	1.37	.013	.00	.00	PIPE
2840.944	1189.941	1.495	1191.435	25.00	7.11	.78	1192.22	.00	1.61	3.00	3.000	.000	.00	1 .0
6.220	.0076					.0053	.03	1.49	1.16	1.37	.013	.00	.00	PIPE
2847.164	1189.988	1.552	1191.540	25.00	6.78	.71	1192.25	.00	1.61	3.00	3.000	.000	.00	1 .0
1.586	.0076					.0047	.01	1.55	1.08	1.37	.013	.00	.00	PIPE
2848.750	1190.000	1.613	1191.613	25.00	6.45	.65	1192.26	.00	1.61	2.99	3.000	.000	.00	1 .0
WALL	ENTRANCE													
2848.750	1190.000	2.445	1192.445	25.00	2.04	.06	1192.51	.00	.92	5.00	10.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	1.895	1177.895	50.00	9.40	1.37	1179.27	.00	2.21	3.49	3.500	.000	.00	1 .0
22.600	.0076					.0076	.17	1.90	1.34	1.90	.013	.00	.00	PIPE
1022.600	1176.171	1.895	1178.066	50.00	9.40	1.37	1179.44	.21	2.21	3.49	3.500	.000	.00	1 .0
47.260	.0076					.0076	.36	2.11	1.34	1.90	.013	.00	.00	PIPE
1069.860	1176.529	1.896	1178.425	50.00	9.40	1.37	1179.80	.00	2.21	3.49	3.500	.000	.00	1 .0
37.840	.0076					.0076	.29	1.90	1.34	1.90	.013	.00	.00	PIPE
1107.700	1176.815	1.895	1178.710	50.00	9.40	1.37	1180.08	.05	2.21	3.49	3.500	.000	.00	1 .0
53.547	.0076					.0076	.41	1.95	1.34	1.90	.013	.00	.00	PIPE
1161.246	1177.220	1.895	1179.116	50.00	9.40	1.37	1180.49	.05	2.21	3.49	3.500	.000	.00	1 .0
139.684	.0076					.0076	1.06	1.95	1.34	1.90	.013	.00	.00	PIPE
1300.930	1178.278	1.895	1180.173	50.00	9.40	1.37	1181.55	.00	2.21	3.49	3.500	.000	.00	1 .0
551.822	.0076					.0076	4.18	1.90	1.34	1.90	.013	.00	.00	PIPE
1852.752	1182.455	1.895	1184.351	50.00	9.40	1.37	1185.72	.00	2.21	3.49	3.500	.000	.00	1 .0
122.918	.0076					.0076	.93	1.90	1.34	1.90	.013	.00	.00	PIPE
1975.670	1183.386	1.895	1185.281	50.00	9.40	1.37	1186.65	.11	2.21	3.49	3.500	.000	.00	1 .0
70.110	.0076					.0076	.53	2.00	1.34	1.90	.013	.00	.00	PIPE
2045.780	1183.917	1.896	1185.813	50.00	9.40	1.37	1187.18	.00	2.21	3.49	3.500	.000	.00	1 .0
47.835	.0076					.0076	.36	1.90	1.34	1.90	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2093.615	1184.279	1.896	1186.175	50.00	9.40	1.37	1187.55	.00	2.21	3.49	3.500	.000	.00	1 .0
121.365	.0076					.0075	.91	1.90	1.34	1.90	.013	.00	.00	PIPE
2214.980	1185.197	1.906	1187.103	50.00	9.34	1.35	1188.46	.21	2.21	3.49	3.500	.000	.00	1 .0
17.440	.0076					.0074	.13	2.12	1.33	1.90	.013	.00	.00	PIPE
2232.420	1185.329	1.909	1187.238	50.00	9.32	1.35	1188.59	.00	2.21	3.49	3.500	.000	.00	1 .0
77.103	.0076					.0070	.54	1.91	1.32	1.90	.013	.00	.00	PIPE
2309.523	1185.913	1.984	1187.897	50.00	8.89	1.23	1189.12	.00	2.21	3.47	3.500	.000	.00	1 .0
22.567	.0076					.0062	.14	1.98	1.23	1.90	.013	.00	.00	PIPE
2332.090	1186.084	2.063	1188.147	50.00	8.47	1.11	1189.26	.00	2.21	3.44	3.500	.000	.00	1 .0
8.060	.0076					.0054	.04	2.06	1.14	1.90	.013	.00	.00	PIPE
2340.150	1186.145	2.148	1188.293	50.00	9.23	1.32	1189.62	.00	2.30	2.71	3.000	.000	.00	1 .0
276.365	.0076					.0076	2.09	2.15	1.15	2.15	.013	.00	.00	PIPE
2616.515	1188.237	2.148	1190.384	50.00	9.23	1.32	1191.71	.00	2.30	2.71	3.000	.000	.00	1 .0
72.845	.0076					.0076	.55	2.15	1.15	2.15	.013	.00	.00	PIPE
2689.360	1188.788	2.145	1190.933	50.00	9.24	1.33	1192.26	.07	2.30	2.71	3.000	.000	.00	1 .0
52.350	.0076					.0076	.40	2.22	1.15	2.15	.013	.00	.00	PIPE
2741.710	1189.185	2.143	1191.328	50.00	9.26	1.33	1192.66	.00	2.30	2.71	3.000	.000	.00	1 .0
29.656	.0076					.0076	.23	2.14	1.16	2.14	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2771.366	1189.411	2.143	1191.553	50.00	9.26	1.33	1192.88	.00	2.30	2.71	3.000	.000	.00	1 .0
64.281	.0076					.0074	.47	2.14	1.16	2.14	.013	.00	.00	PIPE
2835.647	1189.900	2.196	1192.096	50.00	9.02	1.26	1193.36	.00	2.30	2.66	3.000	.000	.00	1 .0
13.103	.0076					.0068	.09	2.20	1.10	2.14	.013	.00	.00	PIPE
2848.750	1190.000	2.301	1192.301	50.00	8.59	1.15	1193.45	.00	2.30	2.54	3.000	.000	.00	1 .0
WALL	ENTRANCE													
2848.750	1190.000	4.051	1194.051	50.00	2.47	.09	1194.15	.00	1.46	5.00	10.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	2.494	1178.494	75.00	10.23	1.62	1180.12	.00	2.71	3.17	3.500	.000	.00	1 .0
22.600	.0076					.0076	.17	2.49	1.18	2.49	.013	.00	.00	PIPE
1022.600	1176.171	2.494	1178.665	75.00	10.23	1.62	1180.29	.23	2.71	3.17	3.500	.000	.00	1 .0
47.260	.0076					.0076	.36	2.72	1.18	2.49	.013	.00	.00	PIPE
1069.860	1176.529	2.495	1179.024	75.00	10.22	1.62	1180.65	.00	2.71	3.17	3.500	.000	.00	1 .0
37.840	.0076					.0076	.29	2.50	1.18	2.50	.013	.00	.00	PIPE
1107.700	1176.815	2.494	1179.309	75.00	10.23	1.62	1180.93	.06	2.71	3.17	3.500	.000	.00	1 .0
77.583	.0076					.0076	.59	2.55	1.18	2.49	.013	.00	.00	PIPE
1185.283	1177.402	2.494	1179.896	75.00	10.23	1.62	1181.52	.06	2.71	3.17	3.500	.000	.00	1 .0
115.647	.0076					.0076	.88	2.55	1.18	2.49	.013	.00	.00	PIPE
1300.930	1178.278	2.494	1180.772	75.00	10.23	1.62	1182.40	.00	2.71	3.17	3.500	.000	.00	1 .0
575.238	.0076					.0076	4.35	2.49	1.18	2.49	.013	.00	.00	PIPE
1876.168	1182.633	2.494	1185.127	75.00	10.23	1.62	1186.75	.00	2.71	3.17	3.500	.000	.00	1 .0
99.502	.0076					.0076	.75	2.49	1.18	2.49	.013	.00	.00	PIPE
1975.670	1183.386	2.494	1185.880	75.00	10.23	1.62	1187.50	.11	2.71	3.17	3.500	.000	.00	1 .0
70.110	.0076					.0076	.53	2.61	1.18	2.49	.013	.00	.00	PIPE
2045.780	1183.917	2.495	1186.412	75.00	10.22	1.62	1188.03	.00	2.71	3.17	3.500	.000	.00	1 .0
66.271	.0076					.0076	.50	2.49	1.18	2.49	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2112.051	1184.418	2.495	1186.913	75.00	10.22	1.62	1188.54	.00	2.71	3.17	3.500	.000	.00	1 .0
102.929	.0076					.0076	.78	2.49	1.18	2.49	.013	.00	.00	PIPE
2214.980	1185.197	2.494	1187.691	75.00	10.23	1.62	1189.32	.23	2.71	3.17	3.500	.000	.00	1 .0
17.440	.0076					.0076	.13	2.72	1.18	2.49	.013	.00	.00	PIPE
2232.420	1185.329	2.494	1187.823	75.00	10.23	1.62	1189.45	.00	2.71	3.17	3.500	.000	.00	1 .0
7.768	.0076					.0076	.06	2.49	1.18	2.49	.013	.00	.00	PIPE
2240.188	1185.388	2.494	1187.881	75.00	10.23	1.62	1189.51	.00	2.71	3.17	3.500	.000	.00	1 .0
86.947	.0076					.0073	.63	2.49	1.18	2.49	.013	.00	.00	PIPE
2327.134	1186.046	2.585	1188.632	75.00	9.84	1.50	1190.14	.00	2.71	3.08	3.500	.000	.00	1 .0
13.016	.0076					.0066	.09	2.59	1.10	2.49	.013	.00	.00	PIPE
2340.150	1186.145	2.719	1188.864	75.00	11.14	1.93	1190.79	.00	2.72	1.75	3.000	.000	.00	1 .0
22.682	.0076					.0115	.26	2.72	1.00	3.00	.013	.00	.00	PIPE
2362.832	1186.317	2.983	1189.299	75.00	10.62	1.75	1191.05	.00	2.72	.46	3.000	.000	.00	1 .0
3.377	.0076					.0119	.04	2.98	.48	3.00	.013	.00	.00	PIPE
2366.209	1186.342	3.000	1189.342	75.00	10.61	1.75	1191.09	.00	2.72	.00	3.000	.000	.00	1 .0
323.151	.0076					.0123	3.99	3.00	.00	3.00	.013	.00	.00	PIPE
2689.360	1188.788	4.640	1193.428	75.00	10.61	1.75	1195.18	.00	2.72	.00	3.000	.000	.00	1 .0
52.350	.0076					.0126	.66	.00	.00	3.00	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2741.710	1189.185	5.107	1194.292	75.00	10.61 / 1.75	1196.04	.00	2.72	.00	3.000	.000	.00	1 .0
107.040	.0076				.0126	1.35	5.11	.00	3.00	.013	.00	.00	PIPE
2848.750	1190.000	5.645	1195.645	75.00	10.61 / 1.75	1197.39	.00	2.72	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE												
2848.750	1190.000	7.758	1197.758	75.00	1.93 / .06	1197.82	.00	1.91	5.00	10.000	5.000	.00	0 .0

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	3.068	1179.068	100.00	11.19	1.94	1181.01	.00	3.07	2.30	3.500	.000	.00	1 .0
22.600	.0076					.0087	.20	3.07	1.00	3.50	.013	.00	.00	PIPE
1022.600	1176.171	3.245	1179.416	100.00	10.74	1.79	1181.21	.07	3.07	1.82	3.500	.000	.00	1 .0
47.260	.0076					.0086	.41	3.32	.84	3.50	.013	.00	.00	PIPE
1069.860	1176.529	3.363	1179.893	100.00	10.53	1.72	1181.61	.00	3.07	1.36	3.500	.000	.00	1 .0
37.840	.0076					.0088	.33	3.36	.70	3.50	.013	.00	.00	PIPE
1107.700	1176.815	3.441	1180.256	100.00	10.43	1.69	1181.95	.01	3.07	.90	3.500	.000	.00	1 .0
29.112	.0076					.0092	.27	3.45	.56	3.50	.013	.00	.00	PIPE
1136.812	1177.035	3.500	1180.535	100.00	10.39	1.68	1182.21	3.50	3.07	.00	3.500	.000	.00	1 .0
164.118	.0076					.0097	1.58	3.50	.00	3.50	.013	.00	.00	PIPE
1300.930	1178.278	4.132	1182.410	100.00	10.39	1.68	1184.09	.00	3.07	.00	3.500	.000	.00	1 .0
674.740	.0076					.0099	6.67	4.13	.00	3.50	.013	.00	.00	PIPE
1975.670	1183.386	5.690	1189.076	100.00	10.39	1.68	1190.75	.00	3.07	.00	3.500	.000	.00	1 .0
70.110	.0076					.0099	.69	.00	.00	3.50	.013	.00	.00	PIPE
2045.780	1183.917	6.088	1190.005	100.00	10.39	1.68	1191.68	.00	3.07	.00	3.500	.000	.00	1 .0
169.200	.0076					.0099	1.67	6.09	.00	3.50	.013	.00	.00	PIPE
2214.980	1185.197	6.480	1191.677	100.00	10.39	1.68	1193.35	.00	3.07	.00	3.500	.000	.00	1 .0
17.440	.0076					.0099	.17	.00	.00	3.50	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2:26:27

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2232.420	1185.329	6.686	1192.016	100.00	10.39	1.68	1193.69	.00	3.07	.00	3.500	.000	.00	1 .0
107.730	.0076					.0099	1.06	6.69	.00	3.50	.013	.00	.00	PIPE
2340.150	1186.145	6.935	1193.080	100.00	14.15	3.11	1196.19	.00	2.90	.00	3.000	.000	.00	1 .0
349.210	.0076					.0225	7.85	6.93	.00	3.00	.013	.00	.00	PIPE
2689.360	1188.788	12.142	1200.930	100.00	14.15	3.11	1204.04	.00	2.90	.00	3.000	.000	.00	1 .0
52.350	.0076					.0225	1.18	.00	.00	3.00	.013	.00	.00	PIPE
2741.710	1189.185	13.280	1202.465	100.00	14.15	3.11	1205.57	.00	2.90	.00	3.000	.000	.00	1 .0
107.040	.0076					.0225	2.41	13.28	.00	3.00	.013	.00	.00	PIPE
2848.750	1190.000	14.871	1204.871	100.00	14.15	3.11	1207.98	.00	2.90	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE													
2848.750	1190.000	18.734	1208.734	100.00	1.07	.02	1208.75	.00	2.32	5.00	10.000	5.000	.00	0 .0

APPENDIX D.9: BASIN "A" 10-YEAR BASIN ROUTING CALCULATIONS

10-YEAR, 1-HOUR

FLOOD HYDROGRAPH ROUTING PROGRAM

Study date: 12/29/11

SCE ALBERHILL SUBSTATION BASIN ROUTING
BASIN "A" - 10-YEAR, 1-HOUR BASIN ROUTING CALCULATIONS
FILENAME: BASINA1

Program License Serial Number 6045

********** HYDROGRAPH INFORMATION **********

From study/file name: arap110.rte
**********HYDROGRAPH DATA**********
Number of intervals = 26
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 291.887 (CFS)
Total volume = 11.694 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 26
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.300	0.041	1.509	0.036	0.046
1.300	0.623	3.052	0.612	0.634
2.300	1.453	4.596	1.437	1.469
3.300	2.393	15.677	2.339	2.447
4.300	3.444	25.943	3.355	3.533
5.300	4.606	31.691	4.497	4.715
6.300	5.878	37.440	5.749	6.007
7.300	7.244	43.188	7.095	7.393
8.300	8.687	48.937	8.518	8.856
9.300	10.208	54.054	10.022	10.394
10.300	11.805	59.028	11.602	12.008
11.300	13.479	64.002	13.259	13.699

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	73.0	145.94	218.92	291.89	Depth (Ft.)
0.083	2.20	0.25	0.007	O	|	|	|	|	0.05
0.167	11.90	1.53	0.049	OI	|	|	|	|	0.31
0.250	34.34	1.92	0.196	O I	|	|	|	|	0.57
0.333	47.37	2.63	0.462	O I	|	|	|	|	1.02
0.417	60.37	3.40	0.812	O I	|	|	|	|	1.53
0.500	68.60	4.18	1.230	O I	|	|	|	|	2.03
0.583	79.08	7.49	1.699	O I	|	|	|	|	2.56
0.667	95.33	13.71	2.226	|O	I |	|	|	|	3.12
0.750	120.30	20.16	2.852	| O	I |	|	|	|	3.74
0.833	163.25	27.04	3.666	| O	|	I |	|	|	4.49
0.917	236.12	32.73	4.836	| O	|	|	I |	|	5.48
1.000	291.89	39.66	6.405	| O	|	|	|	I	6.69
1.083	184.38	45.21	7.752	| O	|	| I	|	|	7.65
1.167	117.91	48.08	8.472	| O	| I	|	|	|	8.15
1.250	68.89	49.25	8.780	| O	I |	|	|	|	8.36
1.333	44.14	49.42	8.830	| IO	|	|	|	|	8.39
1.417	28.14	49.11	8.739	| I	O |	|	|	|	8.33
1.500	16.94	48.43	8.559	|I	O |	|	|	|	8.21
1.583	9.35	47.47	8.319	|I	O |	|	|	|	8.04
1.667	6.01	46.39	8.049	I	O |	|	|	|	7.86
1.750	4.10	45.27	7.768	I	O |	|	|	|	7.66
1.833	3.33	44.15	7.485	I	O |	|	|	|	7.47
1.917	2.21	43.02	7.204	I	O |	|	|	|	7.27
2.000	1.30	41.84	6.924	I	O |	|	|	|	7.07
2.083	0.35	40.67	6.646	I	O |	|	|	|	6.86
2.167	0.10	39.51	6.371	I	O |	|	|	|	6.66
2.250	0.00	38.39	6.103	I	O |	|	|	|	6.46
2.333	0.00	37.28	5.843	I	O |	|	|	|	6.27
2.417	0.00	36.14	5.590	I O	|	|	|	|	6.07
2.500	0.00	35.03	5.345	I O	|	|	|	|	5.88
2.583	0.00	33.96	5.107	I O	|	|	|	|	5.69
2.667	0.00	32.92	4.877	I O	|	|	|	|	5.51
2.750	0.00	31.91	4.654	I O	|	|	|	|	5.34
2.833	0.00	30.86	4.438	I O	|	|	|	|	5.16
2.917	0.00	29.82	4.229	I O	|	|	|	|	4.98
3.000	0.00	28.82	4.027	I O	|	|	|	|	4.80
3.083	0.00	27.86	3.831	I O	|	|	|	|	4.63
3.167	0.00	26.93	3.643	I O	|	|	|	|	4.47
3.250	0.00	26.02	3.460	I O	|	|	|	|	4.31
3.333	0.00	24.41	3.287	I O	|	|	|	|	4.15
3.417	0.00	22.82	3.124	I O	|	|	|	|	4.00
3.500	0.00	21.33	2.972	I O	|	|	|	|	3.85
3.583	0.00	19.95	2.830	I O	|	|	|	|	3.72
3.667	0.00	18.65	2.697	I O	|	|	|	|	3.59
3.750	0.00	17.43	2.573	IO	|	|	|	|	3.47
3.833	0.00	16.30	2.457	IO	|	|	|	|	3.36
3.917	0.00	15.15	2.348	IO	|	|	|	|	3.25
4.000	0.00	13.97	2.248	IO	|	|	|	|	3.15
4.083	0.00	12.88	2.156	IO	|	|	|	|	3.05
4.167	0.00	11.87	2.070	IO	|	|	|	|	2.96
4.250	0.00	10.95	1.992	IO	|	|	|	|	2.87
4.333	0.00	10.09	1.919	IO	|	|	|	|	2.80
4.417	0.00	9.31	1.853	IO	|	|	|	|	2.73
4.500	0.00	8.58	1.791	O	|	|	|	|	2.66
4.583	0.00	7.91	1.734	O	|	|	|	|	2.60
4.667	0.00	7.29	1.682	O	|	|	|	|	2.54
4.750	0.00	6.72	1.634	O	|	|	|	|	2.49
4.833	0.00	6.20	1.589	O	|	|	|	|	2.44
4.917	0.00	5.72	1.548	O	|	|	|	|	2.40
5.000	0.00	5.27	1.510	O	|	|	|	|	2.36
5.083	0.00	4.86	1.475	O	|	|	|	|	2.32
5.167	0.00	4.58	1.443	O	|	|	|	|	2.29
5.250	0.00	4.52	1.411	O	|	|	|	|	2.25
5.333	0.00	4.46	1.381	O	|	|	|	|	2.21
5.417	0.00	4.40	1.350	O	|	|	|	|	2.18

5.500	0.00	4.35	1.320	O	|	|	|	2.14
5.583	0.00	4.29	1.290	O	|	|	|	2.10
5.667	0.00	4.24	1.261	O	|	|	|	2.07
5.750	0.00	4.18	1.232	O	|	|	|	2.03
5.833	0.00	4.13	1.203	O	|	|	|	2.00
5.917	0.00	4.08	1.175	O	|	|	|	1.96
6.000	0.00	4.03	1.147	O	|	|	|	1.93
6.083	0.00	3.98	1.119	O	|	|	|	1.90
6.167	0.00	3.92	1.092	O	|	|	|	1.87
6.250	0.00	3.87	1.065	O	|	|	|	1.83
6.333	0.00	3.83	1.039	O	|	|	|	1.80
6.417	0.00	3.78	1.013	O	|	|	|	1.77
6.500	0.00	3.73	0.987	O	|	|	|	1.74
6.583	0.00	3.68	0.961	O	|	|	|	1.71
6.667	0.00	3.63	0.936	O	|	|	|	1.68
6.750	0.00	3.59	0.911	O	|	|	|	1.65
6.833	0.00	3.54	0.887	O	|	|	|	1.62
6.917	0.00	3.50	0.862	O	|	|	|	1.59
7.000	0.00	3.45	0.838	O	|	|	|	1.56
7.083	0.00	3.41	0.815	O	|	|	|	1.53
7.167	0.00	3.37	0.792	O	|	|	|	1.50
7.250	0.00	3.32	0.768	O	|	|	|	1.48
7.333	0.00	3.28	0.746	O	|	|	|	1.45
7.417	0.00	3.24	0.723	O	|	|	|	1.42
7.500	0.00	3.20	0.701	O	|	|	|	1.39
7.583	0.00	3.16	0.679	O	|	|	|	1.37
7.667	0.00	3.12	0.658	O	|	|	|	1.34
7.750	0.00	3.08	0.636	O	|	|	|	1.32
7.833	0.00	3.03	0.615	O	|	|	|	1.29
7.917	0.00	2.98	0.595	O	|	|	|	1.25
8.000	0.00	2.92	0.574	O	|	|	|	1.22
8.083	0.00	2.87	0.554	O	|	|	|	1.18
8.167	0.00	2.82	0.535	O	|	|	|	1.15
8.250	0.00	2.77	0.516	O	|	|	|	1.12
8.333	0.00	2.72	0.497	O	|	|	|	1.08
8.417	0.00	2.67	0.478	O	|	|	|	1.05
8.500	0.00	2.62	0.460	O	|	|	|	1.02
8.583	0.00	2.57	0.442	O	|	|	|	0.99
8.667	0.00	2.53	0.424	O	|	|	|	0.96
8.750	0.00	2.48	0.407	O	|	|	|	0.93
8.833	0.00	2.44	0.390	O	|	|	|	0.90
8.917	0.00	2.39	0.374	O	|	|	|	0.87
9.000	0.00	2.35	0.357	O	|	|	|	0.84
9.083	0.00	2.31	0.341	O	|	|	|	0.82
9.167	0.00	2.26	0.326	O	|	|	|	0.79
9.250	0.00	2.22	0.310	O	|	|	|	0.76
9.333	0.00	2.18	0.295	O	|	|	|	0.74
9.417	0.00	2.14	0.280	O	|	|	|	0.71
9.500	0.00	2.10	0.265	O	|	|	|	0.69
9.583	0.00	2.07	0.251	O	|	|	|	0.66
9.667	0.00	2.03	0.237	O	|	|	|	0.64
9.750	0.00	1.99	0.223	O	|	|	|	0.61
9.833	0.00	1.96	0.210	O	|	|	|	0.59
9.917	0.00	1.92	0.196	O	|	|	|	0.57
10.000	0.00	1.89	0.183	O	|	|	|	0.54
10.083	0.00	1.85	0.170	O	|	|	|	0.52
10.167	0.00	1.82	0.158	O	|	|	|	0.50
10.250	0.00	1.79	0.145	O	|	|	|	0.48
10.333	0.00	1.75	0.133	O	|	|	|	0.46
10.417	0.00	1.72	0.121	O	|	|	|	0.44
10.500	0.00	1.69	0.109	O	|	|	|	0.42
10.583	0.00	1.66	0.098	O	|	|	|	0.40
10.667	0.00	1.63	0.086	O	|	|	|	0.38
10.750	0.00	1.60	0.075	O	|	|	|	0.36
10.833	0.00	1.57	0.064	O	|	|	|	0.34
10.917	0.00	1.54	0.054	O	|	|	|	0.32
11.000	0.00	1.51	0.043	O	|	|	|	0.30
11.083	0.00	1.24	0.034	O	|	|	|	0.25
11.167	0.00	0.96	0.026	O	|	|	|	0.19
11.250	0.00	0.74	0.020	O	|	|	|	0.15
11.333	0.00	0.58	0.016	O	|	|	|	0.11

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11.417    0.00    0.45      0.012  O       |       |       |       |     0.09
11.500    0.00    0.35      0.009  O       |       |       |       |     0.07
11.583    0.00    0.27      0.007  O       |       |       |       |     0.05
11.667    0.00    0.21      0.006  O       |       |       |       |     0.04
11.750    0.00    0.16      0.004  O       |       |       |       |     0.03
11.833    0.00    0.13      0.003  O       |       |       |       |     0.02
11.917    0.00    0.10      0.003  O       |       |       |       |     0.02
12.000    0.00    0.08      0.002  O       |       |       |       |     0.01
12.083    0.00    0.06      0.002  O       |       |       |       |     0.01
12.167    0.00    0.05      0.001  O       |       |       |       |     0.01
12.250    0.00    0.03      0.001  O       |       |       |       |     0.01
12.333    0.00    0.03      0.001  O       |       |       |       |     0.01
12.417    0.00    0.02      0.001  O       |       |       |       |     0.00
12.500    0.00    0.02      0.000  O       |       |       |       |     0.00
12.583    0.00    0.01      0.000  O       |       |       |       |     0.00
12.667    0.00    0.01      0.000  O       |       |       |       |     0.00
12.750    0.00    0.01      0.000  O       |       |       |       |     0.00
12.833    0.00    0.01      0.000  O       |       |       |       |     0.00
12.917    0.00    0.00      0.000  O       |       |       |       |     0.00

      ****************************HYDROGRAPH DATA****************************
                  Number of intervals =   155
                  Time interval =    5.0 (Min.)
                  Maximum/Peak flow rate =       49.417 (CFS)
                  Total volume =      11.693 (Ac.Ft)
            Status of hydrographs being held in storage
                       Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
            Peak (CFS)      0.000     0.000     0.000     0.000     0.000
            Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
      ***********************************************************************

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10-YEAR, 3-HOUR

FLOOD HYDROGRAPH ROUTING PROGRAM

Study date: 12/29/11

SCE ALBERHILL SUBSTATION BASIN ROUTING
BASIN "A" - 10-YEAR, 3-HOUR BASIN ROUTING CALCULATIONS
FINENAME: BASINA3

Program License Serial Number 6045

********** HYDROGRAPH INFORMATION **********

From study/file name: arap310.rte
**********HYDROGRAPH DATA**********
Number of intervals = 50
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 213.384 (CFS)
Total volume = 16.529 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 50
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.300	0.041	1.509	0.036	0.046
1.300	0.623	3.052	0.612	0.634
2.300	1.453	4.596	1.437	1.469
3.300	2.393	15.677	2.339	2.447
4.300	3.444	25.943	3.355	3.533
5.300	4.606	31.691	4.497	4.715
6.300	5.878	37.440	5.749	6.007
7.300	7.244	43.188	7.095	7.393
8.300	8.687	48.937	8.518	8.856
9.300	10.208	54.054	10.022	10.394
10.300	11.805	59.028	11.602	12.008
11.300	13.479	64.002	13.259	13.699

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	53.3	106.69	160.04	213.38	Depth (Ft.)
0.083	0.37	0.04	0.001	O	|	|	|	|	0.01
0.167	1.98	0.30	0.008	O	|	|	|	|	0.06
0.250	5.23	1.04	0.028	O	|	|	|	|	0.21
0.333	5.98	1.55	0.058	O	|	|	|	|	0.33
0.417	6.50	1.64	0.090	O	|	|	|	|	0.38
0.500	12.18	1.78	0.142	OI	|	|	|	|	0.47
0.583	15.84	2.00	0.226	O I	|	|	|	|	0.62
0.667	19.86	2.29	0.334	O I	|	|	|	|	0.80
0.750	19.98	2.61	0.455	O I	|	|	|	|	1.01
0.833	23.60	2.95	0.585	O I	|	|	|	|	1.24
0.917	23.55	3.24	0.727	O I	|	|	|	|	1.42
1.000	21.10	3.49	0.857	O I	|	|	|	|	1.58
1.083	23.29	3.73	0.985	O I	|	|	|	|	1.74
1.167	28.90	4.01	1.138	O I	|	|	|	|	1.92
1.250	35.92	4.37	1.333	O I	|	|	|	|	2.15
1.333	38.68	5.79	1.554	O I	|	|	|	|	2.41
1.417	39.99	8.41	1.776	|O I	|	|	|	|	2.64
1.500	42.38	10.97	1.993	|O I	|	|	|	|	2.87
1.583	51.02	13.75	2.230	| O I	|	|	|	|	3.13
1.667	54.44	16.61	2.489	| O I	|	|	|	|	3.39
1.750	55.38	19.10	2.744	| O I	|	|	|	|	3.63
1.833	63.15	21.72	3.011	| O |I	|	|	|	|	3.89
1.917	72.19	24.71	3.317	| O | I	|	|	|	|	4.18
2.000	72.74	26.91	3.639	| O | I	|	|	|	|	4.47
2.083	72.09	28.43	3.947	| O | I	|	|	|	|	4.73
2.167	75.72	29.95	4.255	| O | I	|	|	|	|	5.00
2.250	86.39	31.67	4.601	| O | I	|	|	|	|	5.30
2.333	106.60	33.66	5.041	| O | I	|	|	|	|	5.64
2.417	120.63	36.11	5.583	| O | I	|	|	|	|	6.07
2.500	130.09	38.75	6.188	| O | I	|	|	|	|	6.53
2.583	179.69	42.06	6.977	| O | I	|	|	|	|	7.10
2.667	208.17	46.23	8.008	| O | I	|	|	|	|	7.83
2.750	213.38	50.42	9.127	| O | I	|	|	|	|	8.59
2.833	166.83	53.62	10.078	| O | I	|	|	|	|	9.21
2.917	102.36	55.37	10.630	| O | I	|	|	|	|	9.56
3.000	72.39	56.05	10.848	| O I | I	|	|	|	|	9.70
3.083	52.00	56.18	10.890	| O | I	|	|	|	|	9.73
3.167	30.76	55.86	10.789	| O | I	|	|	|	|	9.66
3.250	18.45	55.20	10.576	| O | I	|	|	|	|	9.53
3.333	11.04	54.34	10.300	| O | I	|	|	|	|	9.36
3.417	6.94	53.33	9.992	| O | I	|	|	|	|	9.16
3.500	4.70	52.24	9.668	| O | I	|	|	|	|	8.95
3.583	3.26	51.13	9.340	| O | I	|	|	|	|	8.73
3.667	2.10	50.02	9.010	| O | I	|	|	|	|	8.51
3.750	1.19	48.91	8.680	| O | I	|	|	|	|	8.30
3.833	0.56	47.61	8.354	| O | I	|	|	|	|	8.07
3.917	0.23	46.33	8.033	| O | I	|	|	|	|	7.85
4.000	0.12	45.08	7.720	| O | I	|	|	|	|	7.63
4.083	0.05	43.87	7.414	| O | I	|	|	|	|	7.42
4.167	0.00	42.65	7.116	| O | I	|	|	|	|	7.21
4.250	0.00	41.43	6.827	| O | I	|	|	|	|	6.99
4.333	0.00	40.25	6.545	| O | I	|	|	|	|	6.79
4.417	0.00	39.10	6.272	| O | I	|	|	|	|	6.59
4.500	0.00	37.98	6.007	| O | I	|	|	|	|	6.39
4.583	0.00	36.86	5.749	| O | I	|	|	|	|	6.20
4.667	0.00	35.73	5.499	| O | I	|	|	|	|	6.00
4.750	0.00	34.63	5.257	| O | I	|	|	|	|	5.81
4.833	0.00	33.57	5.022	| O | I	|	|	|	|	5.63
4.917	0.00	32.54	4.794	| O | I	|	|	|	|	5.45
5.000	0.00	31.53	4.574	| O | I	|	|	|	|	5.27
5.083	0.00	30.47	4.360	| O | I	|	|	|	|	5.09
5.167	0.00	29.45	4.154	| O | I	|	|	|	|	4.91
5.250	0.00	28.47	3.954	| O | I	|	|	|	|	4.74
5.333	0.00	27.51	3.762	| O | I	|	|	|	|	4.57
5.417	0.00	26.59	3.575	| O | I	|	|	|	|	4.41

5.500	0.00	25.47	3.396	I O				4.25
5.583	0.00	23.82	3.226	I O				4.09
5.667	0.00	22.27	3.068	I O				3.94
5.750	0.00	20.82	2.919	I O				3.80
5.833	0.00	19.46	2.780	I O				3.67
5.917	0.00	18.20	2.651	I O				3.55
6.000	0.00	17.01	2.530	I O				3.43
6.083	0.00	15.90	2.416	I O				3.32
6.167	0.00	14.71	2.311	I O				3.21
6.250	0.00	13.56	2.213	I O				3.11
6.333	0.00	12.50	2.124	IO				3.01
6.417	0.00	11.53	2.041	IO				2.93
6.500	0.00	10.63	1.965	IO				2.84
6.583	0.00	9.80	1.894	IO				2.77
6.667	0.00	9.03	1.829	IO				2.70
6.750	0.00	8.33	1.770	IO				2.64
6.833	0.00	7.68	1.715	IO				2.58
6.917	0.00	7.08	1.664	IO				2.52
7.000	0.00	6.53	1.617	O				2.47
7.083	0.00	6.02	1.574	O				2.43
7.167	0.00	5.55	1.534	O				2.39
7.250	0.00	5.12	1.497	O				2.35
7.333	0.00	4.72	1.463	O				2.31
7.417	0.00	4.56	1.431	O				2.27
7.500	0.00	4.50	1.400	O				2.24
7.583	0.00	4.44	1.369	O				2.20
7.667	0.00	4.38	1.339	O				2.16
7.750	0.00	4.33	1.309	O				2.13
7.833	0.00	4.27	1.279	O				2.09
7.917	0.00	4.22	1.250	O				2.06
8.000	0.00	4.16	1.221	O				2.02
8.083	0.00	4.11	1.193	O				1.99
8.167	0.00	4.06	1.165	O				1.95
8.250	0.00	4.01	1.137	O				1.92
8.333	0.00	3.96	1.109	O				1.89
8.417	0.00	3.91	1.082	O				1.85
8.500	0.00	3.86	1.056	O				1.82
8.583	0.00	3.81	1.029	O				1.79
8.667	0.00	3.76	1.003	O				1.76
8.750	0.00	3.71	0.977	O				1.73
8.833	0.00	3.66	0.952	O				1.70
8.917	0.00	3.62	0.927	O				1.67
9.000	0.00	3.57	0.902	O				1.64
9.083	0.00	3.53	0.878	O				1.61
9.167	0.00	3.48	0.854	O				1.58
9.250	0.00	3.44	0.830	O				1.55
9.333	0.00	3.39	0.806	O				1.52
9.417	0.00	3.35	0.783	O				1.49
9.500	0.00	3.31	0.760	O				1.47
9.583	0.00	3.27	0.738	O				1.44
9.667	0.00	3.22	0.715	O				1.41
9.750	0.00	3.18	0.693	O				1.38
9.833	0.00	3.14	0.671	O				1.36
9.917	0.00	3.10	0.650	O				1.33
10.000	0.00	3.06	0.629	O				1.31
10.083	0.00	3.01	0.608	O				1.27
10.167	0.00	2.96	0.587	O				1.24
10.250	0.00	2.90	0.567	O				1.20
10.333	0.00	2.85	0.547	O				1.17
10.417	0.00	2.80	0.528	O				1.14
10.500	0.00	2.75	0.509	O				1.10
10.583	0.00	2.70	0.490	O				1.07
10.667	0.00	2.65	0.471	O				1.04
10.750	0.00	2.60	0.453	O				1.01
10.833	0.00	2.56	0.436	O				0.98
10.917	0.00	2.51	0.418	O				0.95
11.000	0.00	2.46	0.401	O				0.92
11.083	0.00	2.42	0.384	O				0.89
11.167	0.00	2.38	0.368	O				0.86
11.250	0.00	2.33	0.351	O				0.83
11.333	0.00	2.29	0.336	O				0.81

11.417	0.00	2.25	0.320	O	|	|	|	|	0.78
11.500	0.00	2.21	0.305	O	|	|	|	|	0.75
11.583	0.00	2.17	0.290	O	|	|	|	|	0.73
11.667	0.00	2.13	0.275	O	|	|	|	|	0.70
11.750	0.00	2.09	0.260	O	|	|	|	|	0.68
11.833	0.00	2.05	0.246	O	|	|	|	|	0.65
11.917	0.00	2.02	0.232	O	|	|	|	|	0.63
12.000	0.00	1.98	0.218	O	|	|	|	|	0.60
12.083	0.00	1.94	0.205	O	|	|	|	|	0.58
12.167	0.00	1.91	0.191	O	|	|	|	|	0.56
12.250	0.00	1.87	0.178	O	|	|	|	|	0.54
12.333	0.00	1.84	0.166	O	|	|	|	|	0.51
12.417	0.00	1.81	0.153	O	|	|	|	|	0.49
12.500	0.00	1.77	0.141	O	|	|	|	|	0.47
12.583	0.00	1.74	0.129	O	|	|	|	|	0.45
12.667	0.00	1.71	0.117	O	|	|	|	|	0.43
12.750	0.00	1.68	0.105	O	|	|	|	|	0.41
12.833	0.00	1.65	0.094	O	|	|	|	|	0.39
12.917	0.00	1.62	0.082	O	|	|	|	|	0.37
13.000	0.00	1.59	0.071	O	|	|	|	|	0.35
13.083	0.00	1.56	0.060	O	|	|	|	|	0.33
13.167	0.00	1.53	0.050	O	|	|	|	|	0.32
13.250	0.00	1.45	0.040	O	|	|	|	|	0.29
13.333	0.00	1.13	0.031	O	|	|	|	|	0.22
13.417	0.00	0.87	0.024	O	|	|	|	|	0.17
13.500	0.00	0.68	0.018	O	|	|	|	|	0.13
13.583	0.00	0.52	0.014	O	|	|	|	|	0.10
13.667	0.00	0.41	0.011	O	|	|	|	|	0.08
13.750	0.00	0.32	0.009	O	|	|	|	|	0.06
13.833	0.00	0.24	0.007	O	|	|	|	|	0.05
13.917	0.00	0.19	0.005	O	|	|	|	|	0.04
14.000	0.00	0.15	0.004	O	|	|	|	|	0.03
14.083	0.00	0.11	0.003	O	|	|	|	|	0.02
14.167	0.00	0.09	0.002	O	|	|	|	|	0.02
14.250	0.00	0.07	0.002	O	|	|	|	|	0.01
14.333	0.00	0.05	0.001	O	|	|	|	|	0.01
14.417	0.00	0.04	0.001	O	|	|	|	|	0.01
14.500	0.00	0.03	0.001	O	|	|	|	|	0.01
14.583	0.00	0.02	0.001	O	|	|	|	|	0.00
14.667	0.00	0.02	0.001	O	|	|	|	|	0.00
14.750	0.00	0.01	0.000	O	|	|	|	|	0.00
14.833	0.00	0.01	0.000	O	|	|	|	|	0.00
14.917	0.00	0.01	0.000	O	|	|	|	|	0.00
15.000	0.00	0.01	0.000	O	|	|	|	|	0.00
15.083	0.00	0.01	0.000	O	|	|	|	|	0.00
15.167	0.00	0.00	0.000	O	|	|	|	|	0.00

**********HYDROGRAPH DATA**********

Number of intervals = 182
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 56.178 (CFS)
Total volume = 16.529 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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10-YEAR, 6-HOUR

FLOOD HYDROGRAPH ROUTING PROGRAM

Study date: 12/29/11

SCE ALBERHILL SUBSTATION BASIN ROUTING
BASIN "A" - 10-YEAR, 6-HOUR BASIN ROUTING CALCULATIONS
FILENAME: BASINA6

Program License Serial Number 6045

********** HYDROGRAPH INFORMATION **********

From study/file name: arap610.rte
**********HYDROGRAPH DATA**********
Number of intervals = 86
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 192.617 (CFS)
Total volume = 18.201 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 86
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.300	0.041	1.509	0.036	0.046
1.300	0.623	3.052	0.612	0.634
2.300	1.453	4.596	1.437	1.469
3.300	2.393	15.677	2.339	2.447
4.300	3.444	25.943	3.355	3.533
5.300	4.606	31.691	4.497	4.715
6.300	5.878	37.440	5.749	6.007
7.300	7.244	43.188	7.095	7.393
8.300	8.687	48.937	8.518	8.856
9.300	10.208	54.054	10.022	10.394
10.300	11.805	59.028	11.602	12.008
11.300	13.479	64.002	13.259	13.699

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	48.2	96.31	144.46	192.62	Depth (Ft.)
0.083	0.11	0.01	0.000	O					0.00
0.167	0.59	0.09	0.002	O					0.02
0.250	1.72	0.33	0.009	O					0.07
0.333	2.35	0.71	0.019	O					0.14
0.417	2.67	1.12	0.030	O					0.22
0.500	2.90	1.49	0.041	O					0.30
0.583	3.13	1.54	0.051	O					0.32
0.667	3.42	1.57	0.063	O					0.34
0.750	3.56	1.60	0.076	O					0.36
0.833	3.63	1.64	0.089	O					0.38
0.917	3.68	1.67	0.103	O					0.41
1.000	3.66	1.71	0.117	O					0.43
1.083	3.44	1.74	0.129	O					0.45
1.167	2.92	1.77	0.139	O					0.47
1.250	2.71	1.79	0.146	O					0.48
1.333	2.59	1.80	0.152	O					0.49
1.417	2.51	1.82	0.157	O					0.50
1.500	2.45	1.83	0.162	O					0.51
1.583	2.42	1.84	0.166	O					0.51
1.667	2.40	1.85	0.170	O					0.52
1.750	2.39	1.86	0.174	O					0.53
1.833	2.39	1.87	0.177	O					0.53
1.917	2.38	1.88	0.181	O					0.54
2.000	2.59	1.89	0.185	O					0.55
2.083	3.31	1.91	0.192	O					0.56
2.167	4.65	1.95	0.206	O					0.58
2.250	4.37	1.99	0.224	O					0.61
2.333	6.05	2.05	0.246	OI					0.65
2.417	6.74	2.13	0.275	OI					0.70
2.500	7.11	2.22	0.308	OI					0.76
2.583	7.35	2.31	0.342	OI					0.82
2.667	7.50	2.40	0.377	OI					0.88
2.750	7.81	2.50	0.413	OI					0.94
2.833	8.81	2.60	0.453	OI					1.01
2.917	10.90	2.73	0.502	OI					1.09
3.000	11.78	2.89	0.561	OI					1.19
3.083	12.26	3.05	0.623	O I					1.30
3.167	12.80	3.17	0.688	O I					1.38
3.250	13.95	3.30	0.758	O I					1.46
3.333	16.16	3.45	0.838	O I					1.56
3.417	17.30	3.62	0.929	O I					1.67
3.500	18.95	3.81	1.028	O I					1.79
3.583	22.50	4.02	1.144	O I					1.93
3.667	26.58	4.28	1.285	O I					2.10
3.750	30.33	4.59	1.450	O I					2.30
3.833	32.99	6.67	1.629	O I					2.49
3.917	36.30	8.86	1.814	O I					2.68
4.000	38.76	11.09	2.004	O I					2.89
4.083	41.96	13.38	2.198	O I					3.09
4.167	44.53	15.70	2.396	O I					3.30
4.250	48.58	17.71	2.601	O I					3.50
4.333	53.17	19.87	2.822	O I					3.71
4.417	58.05	22.19	3.060	O I					3.93
4.500	62.90	24.69	3.315	O I					4.18
4.583	67.17	26.65	3.586	O I					4.42
4.667	70.36	28.06	3.872	O I					4.67
4.750	74.83	29.55	4.173	O I					4.93
4.833	79.48	31.15	4.496	O I					5.21
4.917	83.59	32.74	4.837	O I					5.48
5.000	86.68	34.34	5.193	O I					5.76
5.083	91.91	36.03	5.565	O I					6.05
5.167	101.33	37.85	5.976	O I					6.37
5.250	118.79	39.92	6.466	O I					6.73
5.333	137.90	42.44	7.067	O I					7.17
5.417	155.27	45.30	7.774	O I					7.67

5.500	174.95	48.54	8.588	| O |	|	| I |	8.23
5.583	192.62	51.70	9.509	| O |	|	| I	8.84
5.667	183.06	54.76	10.436	| O |	|	| I |	9.44
5.750	109.89	56.71	11.060	| O |	I |	|	9.83
5.833	64.36	57.35	11.268	| OI |	|	|	9.96
5.917	41.38	57.26	11.237	| I O |	|	|	9.94
6.000	27.26	56.77	11.081	| I O |	|	|	9.85
6.083	17.36	56.04	10.846	| I O |	|	|	9.70
6.167	10.53	55.15	10.559	|I O |	|	|	9.52
6.250	6.07	54.15	10.240	|I O |	|	|	9.32
6.333	4.04	53.04	9.906	I O |	|	|	9.10
6.417	2.83	51.90	9.568	I O |	|	|	8.88
6.500	2.05	50.77	9.231	I O |	|	|	8.66
6.583	1.23	49.64	8.897	I O |	|	|	8.44
6.667	0.60	48.45	8.565	I O |	|	|	8.22
6.750	0.14	47.15	8.239	I O |	|	|	7.99
6.833	0.04	45.88	7.919	I O |	|	|	7.77
6.917	0.02	44.64	7.607	I O |	|	|	7.55
7.000	0.01	43.43	7.304	I O |	|	|	7.34
7.083	0.00	42.20	7.010	I O |	|	|	7.13
7.167	0.00	41.00	6.723	I O |	|	|	6.92
7.250	0.00	39.82	6.445	I O |	|	|	6.71
7.333	0.00	38.69	6.174	I O |	|	|	6.52
7.417	0.00	37.58	5.912	I O |	|	|	6.32
7.500	0.00	36.44	5.657	I O |	|	|	6.13
7.583	0.00	35.32	5.410	I O |	|	|	5.93
7.667	0.00	34.24	5.170	I O |	|	|	5.74
7.750	0.00	33.19	4.938	I O |	|	|	5.56
7.833	0.00	32.17	4.713	I O |	|	|	5.38
7.917	0.00	31.14	4.495	I O |	|	|	5.20
8.000	0.00	30.10	4.284	I O |	|	|	5.02
8.083	0.00	29.09	4.080	I O |	|	|	4.85
8.167	0.00	28.12	3.883	I O |	|	|	4.68
8.250	0.00	27.17	3.693	I O |	|	|	4.51
8.333	0.00	26.26	3.509	I O |	|	|	4.36
8.417	0.00	24.86	3.333	I O |	|	|	4.19
8.500	0.00	23.24	3.167	I O |	|	|	4.04
8.583	0.00	21.73	3.012	I O |	|	|	3.89
8.667	0.00	20.31	2.868	I O |	|	|	3.75
8.750	0.00	18.99	2.732	I O |	|	|	3.62
8.833	0.00	17.75	2.606	I O |	|	|	3.50
8.917	0.00	16.60	2.487	I O |	|	|	3.39
9.000	0.00	15.49	2.377	I O |	|	|	3.28
9.083	0.00	14.28	2.274	I O |	|	|	3.17
9.167	0.00	13.16	2.180	I O |	|	|	3.07
9.250	0.00	12.14	2.093	I O |	|	|	2.98
9.333	0.00	11.19	2.012	IO |	|	|	2.90
9.417	0.00	10.32	1.938	IO |	|	|	2.82
9.500	0.00	9.51	1.870	IO |	|	|	2.74
9.583	0.00	8.77	1.807	IO |	|	|	2.68
9.667	0.00	8.09	1.749	IO |	|	|	2.61
9.750	0.00	7.46	1.696	IO |	|	|	2.56
9.833	0.00	6.87	1.646	IO |	|	|	2.51
9.917	0.00	6.34	1.601	IO |	|	|	2.46
10.000	0.00	5.84	1.559	O |	|	|	2.41
10.083	0.00	5.39	1.520	O |	|	|	2.37
10.167	0.00	4.97	1.484	O |	|	|	2.33
10.250	0.00	4.59	1.452	O |	|	|	2.30
10.333	0.00	4.53	1.420	O |	|	|	2.26
10.417	0.00	4.48	1.389	O |	|	|	2.22
10.500	0.00	4.42	1.358	O |	|	|	2.19
10.583	0.00	4.36	1.328	O |	|	|	2.15
10.667	0.00	4.31	1.298	O |	|	|	2.11
10.750	0.00	4.25	1.269	O |	|	|	2.08
10.833	0.00	4.20	1.240	O |	|	|	2.04
10.917	0.00	4.15	1.211	O |	|	|	2.01
11.000	0.00	4.09	1.183	O |	|	|	1.97
11.083	0.00	4.04	1.155	O |	|	|	1.94
11.167	0.00	3.99	1.127	O |	|	|	1.91
11.250	0.00	3.94	1.100	O |	|	|	1.87
11.333	0.00	3.89	1.073	O |	|	|	1.84

11.417	0.00	3.84	1.046	O	|	|	|	1.81
11.500	0.00	3.79	1.020	O	|	|	|	1.78
11.583	0.00	3.74	0.994	O	|	|	|	1.75
11.667	0.00	3.69	0.968	O	|	|	|	1.72
11.750	0.00	3.65	0.943	O	|	|	|	1.69
11.833	0.00	3.60	0.918	O	|	|	|	1.66
11.917	0.00	3.56	0.893	O	|	|	|	1.63
12.000	0.00	3.51	0.869	O	|	|	|	1.60
12.083	0.00	3.47	0.845	O	|	|	|	1.57
12.167	0.00	3.42	0.821	O	|	|	|	1.54
12.250	0.00	3.38	0.798	O	|	|	|	1.51
12.333	0.00	3.33	0.775	O	|	|	|	1.48
12.417	0.00	3.29	0.752	O	|	|	|	1.46
12.500	0.00	3.25	0.729	O	|	|	|	1.43
12.583	0.00	3.21	0.707	O	|	|	|	1.40
12.667	0.00	3.17	0.685	O	|	|	|	1.38
12.750	0.00	3.13	0.664	O	|	|	|	1.35
12.833	0.00	3.09	0.642	O	|	|	|	1.32
12.917	0.00	3.05	0.621	O	|	|	|	1.30
13.000	0.00	2.99	0.600	O	|	|	|	1.26
13.083	0.00	2.94	0.580	O	|	|	|	1.23
13.167	0.00	2.88	0.560	O	|	|	|	1.19
13.250	0.00	2.83	0.540	O	|	|	|	1.16
13.333	0.00	2.78	0.521	O	|	|	|	1.12
13.417	0.00	2.73	0.502	O	|	|	|	1.09
13.500	0.00	2.68	0.483	O	|	|	|	1.06
13.583	0.00	2.63	0.465	O	|	|	|	1.03
13.667	0.00	2.59	0.447	O	|	|	|	1.00
13.750	0.00	2.54	0.429	O	|	|	|	0.97
13.833	0.00	2.49	0.412	O	|	|	|	0.94
13.917	0.00	2.45	0.395	O	|	|	|	0.91
14.000	0.00	2.40	0.378	O	|	|	|	0.88
14.083	0.00	2.36	0.362	O	|	|	|	0.85
14.167	0.00	2.32	0.346	O	|	|	|	0.82
14.250	0.00	2.27	0.330	O	|	|	|	0.80
14.333	0.00	2.23	0.314	O	|	|	|	0.77
14.417	0.00	2.19	0.299	O	|	|	|	0.74
14.500	0.00	2.15	0.284	O	|	|	|	0.72
14.583	0.00	2.11	0.269	O	|	|	|	0.69
14.667	0.00	2.08	0.255	O	|	|	|	0.67
14.750	0.00	2.04	0.241	O	|	|	|	0.64
14.833	0.00	2.00	0.227	O	|	|	|	0.62
14.917	0.00	1.97	0.213	O	|	|	|	0.60
15.000	0.00	1.93	0.200	O	|	|	|	0.57
15.083	0.00	1.90	0.187	O	|	|	|	0.55
15.167	0.00	1.86	0.174	O	|	|	|	0.53
15.250	0.00	1.83	0.161	O	|	|	|	0.51
15.333	0.00	1.79	0.149	O	|	|	|	0.48
15.417	0.00	1.76	0.136	O	|	|	|	0.46
15.500	0.00	1.73	0.124	O	|	|	|	0.44
15.583	0.00	1.70	0.113	O	|	|	|	0.42
15.667	0.00	1.67	0.101	O	|	|	|	0.40
15.750	0.00	1.64	0.090	O	|	|	|	0.38
15.833	0.00	1.61	0.078	O	|	|	|	0.36
15.917	0.00	1.58	0.067	O	|	|	|	0.35
16.000	0.00	1.55	0.057	O	|	|	|	0.33
16.083	0.00	1.52	0.046	O	|	|	|	0.31
16.167	0.00	1.33	0.036	O	|	|	|	0.26
16.250	0.00	1.03	0.028	O	|	|	|	0.21
16.333	0.00	0.80	0.022	O	|	|	|	0.16
16.417	0.00	0.62	0.017	O	|	|	|	0.12
16.500	0.00	0.48	0.013	O	|	|	|	0.10
16.583	0.00	0.37	0.010	O	|	|	|	0.07
16.667	0.00	0.29	0.008	O	|	|	|	0.06
16.750	0.00	0.22	0.006	O	|	|	|	0.04
16.833	0.00	0.17	0.005	O	|	|	|	0.03
16.917	0.00	0.13	0.004	O	|	|	|	0.03
17.000	0.00	0.10	0.003	O	|	|	|	0.02
17.083	0.00	0.08	0.002	O	|	|	|	0.02
17.167	0.00	0.06	0.002	O	|	|	|	0.01
17.250	0.00	0.05	0.001	O	|	|	|	0.01

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17.333    0.00    0.04      0.001  O       |       |       |       |     0.01
17.417    0.00    0.03      0.001  O       |       |       |       |     0.01
17.500    0.00    0.02      0.001  O       |       |       |       |     0.00
17.583    0.00    0.02      0.000  O       |       |       |       |     0.00
17.667    0.00    0.01      0.000  O       |       |       |       |     0.00
17.750    0.00    0.01      0.000  O       |       |       |       |     0.00
17.833    0.00    0.01      0.000  O       |       |       |       |     0.00
17.917    0.00    0.01      0.000  O       |       |       |       |     0.00
18.000    0.00    0.00      0.000  O       |       |       |       |     0.00

      ****************************HYDROGRAPH DATA****************************
                  Number of intervals =   216
                  Time interval =    5.0 (Min.)
                  Maximum/Peak flow rate =       57.355 (CFS)
                  Total volume =      18.201 (Ac.Ft)
            Status of hydrographs being held in storage
                        Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
            Peak (CFS)      0.000     0.000     0.000     0.000     0.000
            Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
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10-YEAR, 24-HOUR

FLOOD HYDROGRAPH ROUTING PROGRAM

Study date: 12/29/11

SCE ALBERHILL SUBSTATION BASIN ROUTING
BASIN "A" - 10-YEAR, 24-HOUR BASIN ROUTING CALCULATIONS
FILENAME: BASINA24

Program License Serial Number 6045

********** HYDROGRAPH INFORMATION **********

From study/file name: arap2410.rte
**********HYDROGRAPH DATA**********
Number of intervals = 302
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 74.639 (CFS)
Total volume = 24.154 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 1.000 to Point/Station 2.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 302
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.300	0.041	1.509	0.036	0.046
1.300	0.623	3.052	0.612	0.634
2.300	1.453	4.596	1.437	1.469
3.300	2.393	15.677	2.339	2.447
4.300	3.444	25.943	3.355	3.533
5.300	4.606	31.691	4.497	4.715
6.300	5.878	37.440	5.749	6.007
7.300	7.244	43.188	7.095	7.393
8.300	8.687	48.937	8.518	8.856
9.300	10.208	54.054	10.022	10.394
10.300	11.805	59.028	11.602	12.008
11.300	13.479	64.002	13.259	13.699

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	18.7	37.32	55.98	74.64	Depth (Ft.)
0.083	0.03	0.00	0.000	O					0.00
0.167	0.14	0.02	0.001	O					0.00
0.250	0.39	0.08	0.002	O					0.02
0.333	0.51	0.16	0.004	O					0.03
0.417	0.62	0.25	0.007	O					0.05
0.500	0.79	0.35	0.010	O					0.07
0.583	0.87	0.46	0.013	O					0.09
0.667	0.91	0.56	0.015	O					0.11
0.750	0.94	0.64	0.017	O					0.13
0.833	0.97	0.71	0.019	O					0.14
0.917	1.04	0.78	0.021	O					0.15
1.000	1.17	0.85	0.023	O					0.17
1.083	1.21	0.93	0.025	O					0.18
1.167	1.19	0.99	0.027	O					0.20
1.250	1.08	1.02	0.028	O					0.20
1.333	1.05	1.03	0.028	O					0.21
1.417	1.03	1.03	0.028	O					0.21
1.500	1.01	1.03	0.028	O					0.20
1.583	1.00	1.02	0.028	O					0.20
1.667	0.99	1.02	0.028	O					0.20
1.750	0.99	1.01	0.028	O					0.20
1.833	1.00	1.01	0.027	O					0.20
1.917	1.06	1.01	0.028	O					0.20
2.000	1.18	1.04	0.028	O					0.21
2.083	1.24	1.08	0.029	O					0.21
2.167	1.26	1.12	0.030	O					0.22
2.250	1.28	1.15	0.031	O					0.23
2.333	1.29	1.18	0.032	O					0.24
2.417	1.30	1.21	0.033	O					0.24
2.500	1.31	1.23	0.033	O					0.24
2.583	1.32	1.25	0.034	O					0.25
2.667	1.38	1.27	0.035	O					0.25
2.750	1.51	1.31	0.036	O					0.26
2.833	1.56	1.36	0.037	O					0.27
2.917	1.59	1.41	0.038	O					0.28
3.000	1.61	1.45	0.039	O					0.29
3.083	1.62	1.49	0.040	O					0.30
3.167	1.63	1.51	0.041	O					0.30
3.250	1.64	1.51	0.042	O					0.30
3.333	1.64	1.51	0.043	O					0.30
3.417	1.64	1.52	0.044	O					0.31
3.500	1.64	1.52	0.045	O					0.31
3.583	1.64	1.52	0.046	O					0.31
3.667	1.64	1.52	0.046	O					0.31
3.750	1.64	1.53	0.047	O					0.31
3.833	1.66	1.53	0.048	O					0.31
3.917	1.71	1.53	0.049	O					0.31
4.000	1.84	1.54	0.051	O					0.32
4.083	1.89	1.54	0.053	O					0.32
4.167	1.92	1.55	0.056	O					0.33
4.250	1.94	1.55	0.058	O					0.33
4.333	1.97	1.56	0.061	O					0.33
4.417	2.03	1.57	0.064	O					0.34
4.500	2.16	1.58	0.068	O					0.35
4.583	2.22	1.59	0.072	O					0.35
4.667	2.25	1.60	0.076	O					0.36
4.750	2.27	1.61	0.081	O					0.37
4.833	2.29	1.63	0.085	O					0.38
4.917	2.36	1.64	0.090	OI					0.38
5.000	2.49	1.65	0.095	OI					0.39
5.083	2.52	1.67	0.101	OI					0.40
5.167	2.43	1.68	0.107	OI					0.41
5.250	2.20	1.69	0.111	O					0.42
5.333	2.13	1.70	0.114	O					0.43
5.417	2.13	1.71	0.117	O					0.43

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 5.500    2.23    1.72      0.120  O       |       |       |       |     0.44
 5.583    2.27    1.73      0.124  O       |       |       |       |     0.44
 5.667    2.34    1.74      0.128  OI      |       |       |       |     0.45
 5.750    2.48    1.75      0.132  OI      |       |       |       |     0.46
 5.833    2.54    1.76      0.137  OI      |       |       |       |     0.47
 5.917    2.57    1.78      0.143  OI      |       |       |       |     0.48
 6.000    2.59    1.79      0.148  OI      |       |       |       |     0.48
 6.083    2.62    1.81      0.154  OI      |       |       |       |     0.49
 6.167    2.69    1.82      0.160  OI      |       |       |       |     0.50
 6.250    2.82    1.84      0.166  OI      |       |       |       |     0.51
 6.333    2.87    1.86      0.173  OI      |       |       |       |     0.53
 6.417    2.90    1.88      0.180  OI      |       |       |       |     0.54
 6.500    2.92    1.90      0.187  OI      |       |       |       |     0.55
 6.583    2.95    1.91      0.194  OI      |       |       |       |     0.56
 6.667    3.02    1.93      0.201  OI      |       |       |       |     0.58
 6.750    3.15    1.95      0.209  OI      |       |       |       |     0.59
 6.833    3.20    1.98      0.218  OI      |       |       |       |     0.60
 6.917    3.23    2.00      0.226  OI      |       |       |       |     0.62
 7.000    3.25    2.02      0.234  OI      |       |       |       |     0.63
 7.083    3.27    2.04      0.243  OI      |       |       |       |     0.65
 7.167    3.28    2.07      0.251  OI      |       |       |       |     0.66
 7.250    3.28    2.09      0.260  OI      |       |       |       |     0.68
 7.333    3.30    2.11      0.268  OI      |       |       |       |     0.69
 7.417    3.35    2.13      0.276  OI      |       |       |       |     0.70
 7.500    3.48    2.16      0.285  OI      |       |       |       |     0.72
 7.583    3.55    2.18      0.294  OI      |       |       |       |     0.73
 7.667    3.63    2.21      0.304  OI      |       |       |       |     0.75
 7.750    3.78    2.23      0.314  OI      |       |       |       |     0.77
 7.833    3.86    2.26      0.325  OI      |       |       |       |     0.79
 7.917    3.95    2.29      0.336  OI      |       |       |       |     0.81
 8.000    4.10    2.32      0.348  OI      |       |       |       |     0.83
 8.083    4.05    2.35      0.360  |O      |       |       |       |     0.85
 8.167    3.60    2.38      0.370  |O      |       |       |       |     0.87
 8.250    2.55    2.39      0.375  |O      |       |       |       |     0.87
 8.333    2.24    2.39      0.375  IO      |       |       |       |     0.87
 8.417    2.16    2.39      0.373  IO      |       |       |       |     0.87
 8.500    2.19    2.39      0.372  IO      |       |       |       |     0.87
 8.583    2.41    2.38      0.371  |O      |       |       |       |     0.87
 8.667    3.12    2.39      0.374  |O      |       |       |       |     0.87
 8.750    4.55    2.42      0.384  |O      |       |       |       |     0.89
 8.833    5.40    2.46      0.401  |OI     |       |       |       |     0.92
 8.917    6.45    2.53      0.425  |OI     |       |       |       |     0.96
 9.000    8.11    2.61      0.457  |O I    |       |       |       |     1.02
 9.083    9.23    2.72      0.499  |O I    |       |       |       |     1.09
 9.167   10.95    2.86      0.549  |O  I   |       |       |       |     1.17
 9.250   13.92    3.03      0.614  |O   I  |       |       |       |     1.28
 9.333   15.45    3.18      0.694  |O    I |       |       |       |     1.39
 9.417   16.91    3.35      0.783  |O     I|       |       |       |     1.49
 9.500   18.82    3.53      0.882  |O      I       |       |       |     1.61
 9.583   19.98    3.74      0.991  |O      I       |       |       |     1.74
 9.667   21.23    3.95      1.106  |O      |I      |       |       |     1.88
 9.750   23.01    4.18      1.230  |O      |I      |       |       |     2.03
 9.833   24.05    4.43      1.363  |O      | I     |       |       |     2.19
 9.917   25.24    5.15      1.500  | O     | I     |       |       |     2.35
10.000   26.98    6.78      1.638  | O     |  I    |       |       |     2.50
10.083   26.97    8.36      1.772  |  O    |  I    |       |       |     2.64
10.167   23.59    9.68      1.884  |   O   | I     |       |       |     2.76
10.250   15.23   10.44      1.948  |   O I |       |       |       |     2.83
10.333   11.96   10.68      1.969  |   OI  |       |       |       |     2.85
10.417   10.26   10.72      1.972  |   O   |       |       |       |     2.85
10.500    9.21   10.64      1.966  |  IO   |       |       |       |     2.85
10.583    9.20   10.53      1.956  |  IO   |       |       |       |     2.84
10.667   11.69   10.52      1.956  |   OI  |       |       |       |     2.83
10.750   17.88   10.85      1.984  |   O  I|       |       |       |     2.86
10.833   20.55   11.51      2.039  |   O   I       |       |       |     2.92
10.917   22.09   12.27      2.104  |    O  |I      |       |       |     2.99
11.000   23.16   13.08      2.173  |    O  |I      |       |       |     3.07
11.083   23.80   13.89      2.241  |    O  | I     |       |       |     3.14
11.167   23.79   14.66      2.307  |     O | I     |       |       |     3.21
11.250   22.94   15.34      2.365  |     O |I      |       |       |     3.27
11.333   22.72   15.88      2.414  |     O |I      |       |       |     3.32
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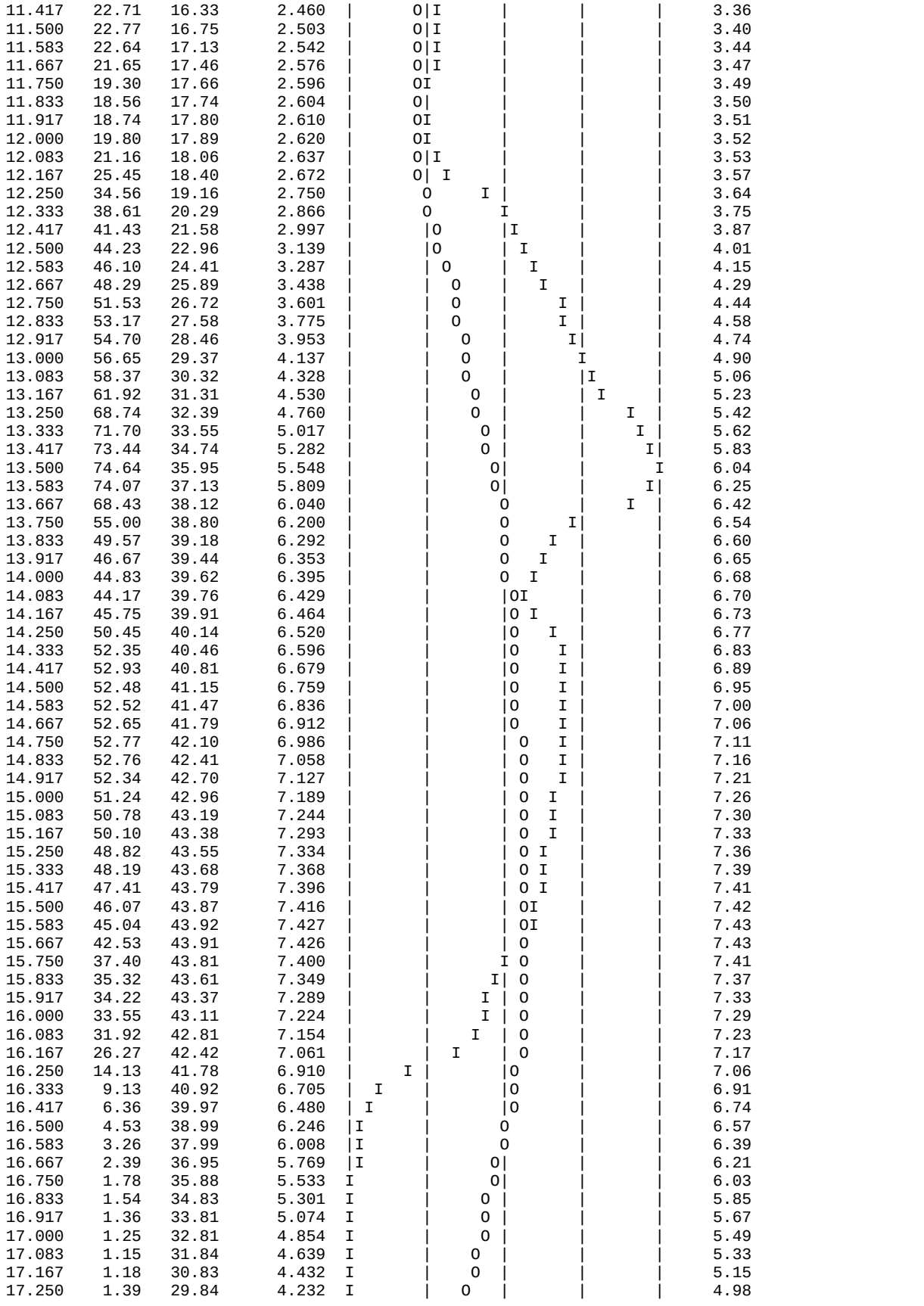
11.417 22.71 16.33 2.460 3.36
11.500 22.77 16.75 2.503 3.40
11.583 22.64 17.13 2.542 3.44
11.667 21.65 17.46 2.576 3.47
11.750 19.30 17.66 2.596 3.49
11.833 18.56 17.74 2.604 3.50
11.917 18.74 17.80 2.610 3.51
12.000 19.80 17.89 2.620 3.52
12.083 21.16 18.06 2.637 3.53
12.167 25.45 18.40 2.672 3.57
12.250 34.56 19.16 2.750 3.64
12.333 38.61 20.29 2.866 3.75
12.417 41.43 21.58 2.997 3.87
12.500 44.23 22.96 3.139 4.01
12.583 46.10 24.41 3.287 4.15
12.667 48.29 25.89 3.438 4.29
12.750 51.53 26.72 3.601 4.44
12.833 53.17 27.58 3.775 4.58
12.917 54.70 28.46 3.953 4.74
13.000 56.65 29.37 4.137 4.90
13.083 58.37 30.32 4.328 5.06
13.167 61.92 31.31 4.530 5.23
13.250 68.74 32.39 4.760 5.42
13.333 71.70 33.55 5.017 5.62
13.417 73.44 34.74 5.282 5.83
13.500 74.64 35.95 5.548 6.04
13.583 74.07 37.13 5.809 6.25
13.667 68.43 38.12 6.040 6.42
13.750 55.00 38.80 6.200 6.54
13.833 49.57 39.18 6.292 6.60
13.917 46.67 39.44 6.353 6.65
14.000 44.83 39.62 6.395 6.68
14.083 44.17 39.76 6.429 6.70
14.167 45.75 39.91 6.464 6.73
14.250 50.45 40.14 6.520 6.77
14.333 52.35 40.46 6.596 6.83
14.417 52.93 40.81 6.679 6.89
14.500 52.48 41.15 6.759 6.95
14.583 52.52 41.47 6.836 7.00
14.667 52.65 41.79 6.912 7.06
14.750 52.77 42.10 6.986 7.11
14.833 52.76 42.41 7.058 7.16
14.917 52.34 42.70 7.127 7.21
15.000 51.24 42.96 7.189 7.26
15.083 50.78 43.19 7.244 7.30
15.167 50.10 43.38 7.293 7.33
15.250 48.82 43.55 7.334 7.36
15.333 48.19 43.68 7.368 7.39
15.417 47.41 43.79 7.396 7.41
15.500 46.07 43.87 7.416 7.42
15.583 45.04 43.92 7.427 7.43
15.667 42.53 43.91 7.426 7.43
15.750 37.40 43.81 7.400 7.41
15.833 35.32 43.61 7.349 7.37
15.917 34.22 43.37 7.289 7.33
16.000 33.55 43.11 7.224 7.29
16.083 31.92 42.81 7.154 7.23
16.167 26.27 42.42 7.061 7.17
16.250 14.13 41.78 6.910 7.06
16.333 9.13 40.92 6.705 6.91
16.417 6.36 39.97 6.480 6.74
16.500 4.53 38.99 6.246 6.57
16.583 3.26 37.99 6.008 6.39
16.667 2.39 36.95 5.769 6.21
16.750 1.78 35.88 5.533 6.03
16.833 1.54 34.83 5.301 5.85
16.917 1.36 33.81 5.074 5.67
17.000 1.25 32.81 4.854 5.49
17.083 1.15 31.84 4.639 5.33
17.167 1.18 30.83 4.432 5.15
17.250 1.39 29.84 4.232 4.98

17.333	1.49	28.89	4.039	I	| O |	|	|	|	4.81
17.417	1.54	27.97	3.854	I	| O |	|	|	|	4.65
17.500	1.58	27.09	3.675	I	| O |	|	|	|	4.50
17.583	1.60	26.23	3.502	I	| O |	|	|	|	4.35
17.667	1.62	24.90	3.337	I	| O |	|	|	|	4.20
17.750	1.63	23.39	3.182	I	| O |	|	|	|	4.05
17.833	1.62	21.97	3.037	I	|O |	|	|	|	3.91
17.917	1.57	20.64	2.902	I	O |	|	|	|	3.78
18.000	1.44	19.40	2.774	I	O |	|	|	|	3.66
18.083	1.39	18.23	2.654	I	O|	|	|	|	3.55
18.167	1.37	17.13	2.542	I	O|	|	|	|	3.44
18.250	1.35	16.11	2.437	I	O |	|	|	|	3.34
18.333	1.34	15.04	2.339	I	O |	|	|	|	3.24
18.417	1.33	13.97	2.248	I	O |	|	|	|	3.15
18.500	1.32	12.98	2.164	I	O |	|	|	|	3.06
18.583	1.31	12.07	2.087	I	O |	|	|	|	2.97
18.667	1.25	11.23	2.016	I	O |	|	|	|	2.90
18.750	1.12	10.45	1.949	I	O |	|	|	|	2.83
18.833	1.06	9.72	1.887	I	O |	|	|	|	2.76
18.917	0.97	9.04	1.830	I	O |	|	|	|	2.70
19.000	0.82	8.40	1.776	I	O |	|	|	|	2.64
19.083	0.77	7.81	1.726	I	O |	|	|	|	2.59
19.167	0.79	7.26	1.679	I	O |	|	|	|	2.54
19.250	0.89	6.76	1.637	I	O |	|	|	|	2.50
19.333	0.94	6.30	1.598	I	O |	|	|	|	2.45
19.417	1.02	5.89	1.563	I	O |	|	|	|	2.42
19.500	1.16	5.51	1.531	I	O |	|	|	|	2.38
19.583	1.21	5.18	1.502	I	O |	|	|	|	2.35
19.667	1.19	4.87	1.476	I	O |	|	|	|	2.32
19.750	1.08	4.59	1.451	IO	|	|	|	|	2.30
19.833	1.03	4.55	1.427	IO	|	|	|	|	2.27
19.917	0.95	4.50	1.403	IO	|	|	|	|	2.24
20.000	0.81	4.46	1.378	IO	|	|	|	|	2.21
20.083	0.77	4.41	1.353	IO	|	|	|	|	2.18
20.167	0.79	4.36	1.328	IO	|	|	|	|	2.15
20.250	0.89	4.32	1.304	IO	|	|	|	|	2.12
20.333	0.93	4.28	1.280	IO	|	|	|	|	2.09
20.417	0.95	4.23	1.258	IO	|	|	|	|	2.06
20.500	0.96	4.19	1.235	IO	|	|	|	|	2.04
20.583	0.97	4.15	1.213	IO	|	|	|	|	2.01
20.667	0.98	4.11	1.191	IO	|	|	|	|	1.98
20.750	0.98	4.07	1.170	IO	|	|	|	|	1.96
20.833	0.97	4.03	1.149	IO	|	|	|	|	1.93
20.917	0.91	3.99	1.128	IO	|	|	|	|	1.91
21.000	0.79	3.95	1.106	IO	|	|	|	|	1.88
21.083	0.75	3.91	1.084	IO	|	|	|	|	1.86
21.167	0.78	3.87	1.063	IO	|	|	|	|	1.83
21.250	0.89	3.83	1.042	IO	|	|	|	|	1.80
21.333	0.91	3.79	1.022	IO	|	|	|	|	1.78
21.417	0.88	3.76	1.002	IO	|	|	|	|	1.76
21.500	0.76	3.72	0.982	IO	|	|	|	|	1.73
21.583	0.74	3.68	0.962	IO	|	|	|	|	1.71
21.667	0.77	3.64	0.942	IO	|	|	|	|	1.68
21.750	0.88	3.61	0.922	IO	|	|	|	|	1.66
21.833	0.91	3.57	0.904	IO	|	|	|	|	1.64
21.917	0.87	3.54	0.886	IO	|	|	|	|	1.62
22.000	0.76	3.51	0.867	IO	|	|	|	|	1.59
22.083	0.73	3.47	0.848	IO	|	|	|	|	1.57
22.167	0.77	3.44	0.829	IO	|	|	|	|	1.55
22.250	0.88	3.40	0.812	IO	|	|	|	|	1.53
22.333	0.91	3.37	0.794	IO	|	|	|	|	1.51
22.417	0.87	3.34	0.777	IO	|	|	|	|	1.49
22.500	0.76	3.31	0.760	IO	|	|	|	|	1.47
22.583	0.72	3.27	0.743	IO	|	|	|	|	1.44
22.667	0.70	3.24	0.725	IO	|	|	|	|	1.42
22.750	0.69	3.21	0.708	IO	|	|	|	|	1.40
22.833	0.67	3.18	0.690	IO	|	|	|	|	1.38
22.917	0.67	3.15	0.673	IO	|	|	|	|	1.36
23.000	0.66	3.11	0.656	IO	|	|	|	|	1.34
23.083	0.66	3.08	0.639	IO	|	|	|	|	1.32
23.167	0.66	3.05	0.623	IO	|	|	|	|	1.30

23.250	0.66	3.01	0.607	IO	|	|	|	1.27
23.333	0.66	2.97	0.590	IO	|	|	|	1.24
23.417	0.66	2.92	0.575	IO	|	|	|	1.22
23.500	0.66	2.88	0.559	IO	|	|	|	1.19
23.583	0.66	2.84	0.544	IO	|	|	|	1.16
23.667	0.66	2.80	0.529	IO	|	|	|	1.14
23.750	0.66	2.76	0.515	IO	|	|	|	1.11
23.833	0.66	2.73	0.500	IO	|	|	|	1.09
23.917	0.66	2.69	0.486	IO	|	|	|	1.06
24.000	0.66	2.65	0.472	IO	|	|	|	1.04
24.083	0.63	2.62	0.458	IO	|	|	|	1.02
24.167	0.52	2.58	0.445	IO	|	|	|	0.99
24.250	0.27	2.54	0.430	IO	|	|	|	0.97
24.333	0.16	2.50	0.414	IO	|	|	|	0.94
24.417	0.10	2.45	0.398	IO	|	|	|	0.91
24.500	0.07	2.41	0.381	IO	|	|	|	0.88
24.583	0.04	2.37	0.365	IO	|	|	|	0.86
24.667	0.02	2.33	0.349	O	|	|	|	0.83
24.750	0.01	2.28	0.334	O	|	|	|	0.80
24.833	0.01	2.24	0.318	O	|	|	|	0.78
24.917	0.01	2.20	0.303	O	|	|	|	0.75
25.000	0.00	2.16	0.288	O	|	|	|	0.72
25.083	0.00	2.12	0.273	O	|	|	|	0.70
25.167	0.00	2.09	0.259	O	|	|	|	0.67
25.250	0.00	2.05	0.244	O	|	|	|	0.65
25.333	0.00	2.01	0.230	O	|	|	|	0.63
25.417	0.00	1.97	0.217	O	|	|	|	0.60
25.500	0.00	1.94	0.203	O	|	|	|	0.58
25.583	0.00	1.90	0.190	O	|	|	|	0.56
25.667	0.00	1.87	0.177	O	|	|	|	0.53
25.750	0.00	1.84	0.164	O	|	|	|	0.51
25.833	0.00	1.80	0.152	O	|	|	|	0.49
25.917	0.00	1.77	0.139	O	|	|	|	0.47
26.000	0.00	1.74	0.127	O	|	|	|	0.45
26.083	0.00	1.71	0.115	O	|	|	|	0.43
26.167	0.00	1.68	0.104	O	|	|	|	0.41
26.250	0.00	1.65	0.092	O	|	|	|	0.39
26.333	0.00	1.62	0.081	O	|	|	|	0.37
26.417	0.00	1.59	0.070	O	|	|	|	0.35
26.500	0.00	1.56	0.059	O	|	|	|	0.33
26.583	0.00	1.53	0.049	O	|	|	|	0.31
26.667	0.00	1.42	0.039	O	|	|	|	0.28
26.750	0.00	1.10	0.030	O	|	|	|	0.22
26.833	0.00	0.85	0.023	O	|	|	|	0.17
26.917	0.00	0.66	0.018	O	|	|	|	0.13
27.000	0.00	0.51	0.014	O	|	|	|	0.10
27.083	0.00	0.40	0.011	O	|	|	|	0.08
27.167	0.00	0.31	0.008	O	|	|	|	0.06
27.250	0.00	0.24	0.006	O	|	|	|	0.05
27.333	0.00	0.18	0.005	O	|	|	|	0.04
27.417	0.00	0.14	0.004	O	|	|	|	0.03
27.500	0.00	0.11	0.003	O	|	|	|	0.02
27.583	0.00	0.09	0.002	O	|	|	|	0.02
27.667	0.00	0.07	0.002	O	|	|	|	0.01
27.750	0.00	0.05	0.001	O	|	|	|	0.01
27.833	0.00	0.04	0.001	O	|	|	|	0.01
27.917	0.00	0.03	0.001	O	|	|	|	0.01
28.000	0.00	0.02	0.001	O	|	|	|	0.00
28.083	0.00	0.02	0.001	O	|	|	|	0.00
28.167	0.00	0.01	0.000	O	|	|	|	0.00
28.250	0.00	0.01	0.000	O	|	|	|	0.00
28.333	0.00	0.01	0.000	O	|	|	|	0.00
28.417	0.00	0.01	0.000	O	|	|	|	0.00
28.500	0.00	0.01	0.000	O	|	|	|	0.00
28.583	0.00	0.00	0.000	O	|	|	|	0.00

**********HYDROGRAPH DATA**********

Number of intervals = 343
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 43.918 (CFS)
Total volume = 24.154 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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APPENDIX D.10: BASIN "B-1B", BASIN "B-1A", AND BASIN "B-2" SERIES BASIN ROUTING

100-YEAR, 1-HOUR

FLOOD HYDROGRAPH ROUTING PROGRAM

Study date: 12/29/11

SCE ALBERHILL SUBSTATION BASIN ROUTING
BASIN B1-B, B1-A, AND B2, 100-YEAR, 1-HOUR BASIN ROUTING
FILENAME: BASIN B

Program License Serial Number 6045

********** HYDROGRAPH INFORMATION **********

From study/file name: arb1bp1100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 24
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 200.577 (CFS)
Total volume = 8.728 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 205.000 to Point/Station 205.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 24
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.700	0.300	9.000	0.269	0.331
1.700	0.790	34.100	0.673	0.907
2.700	1.340	68.300	1.105	1.575
3.700	1.670	109.600	1.293	2.047
4.700	2.660	156.900	2.120	3.200

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	50.1	100.29	150.43	200.58	Depth (Ft.)
0.083	2.35	0.22	0.007	O	|	|	|	|	0.02

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0.167   14.92    1.80      0.060  O I     |       |       |       |     0.14
0.250   33.44    5.99      0.200  O    I  |       |       |       |     0.47
0.333   43.82   13.96      0.397  | O   I |       |       |       |     0.90
0.417   52.75   24.26      0.598  |  O    I       |       |       |     1.31
0.500   58.63   33.68      0.782  |    O  |I      |       |       |     1.68
0.583   66.52   43.80      0.946  |     O | I     |       |       |     1.98
0.667   78.88   53.99      1.110  |       O   I   |       |       |     2.28
0.750   96.59   65.89      1.301  |       | O    I|       |       |     2.63
0.833  130.72   92.96      1.537  |       |     O |   I   |       |     3.30
0.917  191.61  121.07      1.910  |       |       |  O    |     I |     3.94
1.000  200.58  142.26      2.354  |       |       |     O |      I|     4.39
1.083  122.92  147.77      2.469  |       |       |  I   O|       |     4.51
1.167   75.99  134.12      2.183  |       |   I   |    O  |       |     4.22
1.250   41.22  112.78      1.737  |     I |       |O      |       |     3.77
1.333   24.43   68.26      1.339  |  I    | O     |       |       |     2.70
1.417   13.71   50.91      1.060  | I     O       |       |       |     2.19
1.500    7.25   36.65      0.831  |I   O  |       |       |       |     1.77
1.583    4.37   27.02      0.652  I   O   |       |       |       |     1.42
1.667    2.94   20.01      0.515  I  O    |       |       |       |     1.14
1.750    2.05   14.76      0.412  I O     |       |       |       |     0.93
1.833    1.14   10.81      0.335  IO      |       |       |       |     0.77
1.917    0.34    8.25      0.275  IO      |       |       |       |     0.64
2.000    0.10    6.74      0.225  IO      |       |       |       |     0.52
2.083    0.00    5.49      0.183  O       |       |       |       |     0.43
2.167    0.00    4.46      0.149  O       |       |       |       |     0.35
2.250    0.00    3.63      0.121  O       |       |       |       |     0.28
2.333    0.00    2.95      0.098  O       |       |       |       |     0.23
2.417    0.00    2.39      0.080  O       |       |       |       |     0.19
2.500    0.00    1.95      0.065  O       |       |       |       |     0.15
2.583    0.00    1.58      0.053  O       |       |       |       |     0.12
2.667    0.00    1.29      0.043  O       |       |       |       |     0.10
2.750    0.00    1.04      0.035  O       |       |       |       |     0.08
2.833    0.00    0.85      0.028  O       |       |       |       |     0.07
2.917    0.00    0.69      0.023  O       |       |       |       |     0.05
3.000    0.00    0.56      0.019  O       |       |       |       |     0.04
3.083    0.00    0.46      0.015  O       |       |       |       |     0.04
3.167    0.00    0.37      0.012  O       |       |       |       |     0.03
3.250    0.00    0.30      0.010  O       |       |       |       |     0.02
3.333    0.00    0.24      0.008  O       |       |       |       |     0.02
3.417    0.00    0.20      0.007  O       |       |       |       |     0.02
3.500    0.00    0.16      0.005  O       |       |       |       |     0.01
3.583    0.00    0.13      0.004  O       |       |       |       |     0.01
3.667    0.00    0.11      0.004  O       |       |       |       |     0.01
3.750    0.00    0.09      0.003  O       |       |       |       |     0.01
3.833    0.00    0.07      0.002  O       |       |       |       |     0.01
3.917    0.00    0.06      0.002  O       |       |       |       |     0.00
4.000    0.00    0.05      0.002  O       |       |       |       |     0.00
4.083    0.00    0.04      0.001  O       |       |       |       |     0.00
4.167    0.00    0.03      0.001  O       |       |       |       |     0.00
4.250    0.00    0.03      0.001  O       |       |       |       |     0.00
4.333    0.00    0.02      0.001  O       |       |       |       |     0.00
4.417    0.00    0.02      0.001  O       |       |       |       |     0.00
4.500    0.00    0.01      0.000  O       |       |       |       |     0.00
4.583    0.00    0.01      0.000  O       |       |       |       |     0.00

****************************HYDROGRAPH DATA****************************
               Number of intervals =    55
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =      147.771 (CFS)
               Total volume =       8.727 (Ac.Ft)
       Status of hydrographs being held in storage
                  Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
       Peak (CFS)      0.000     0.000     0.000     0.000     0.000
       Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
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Process from Point/Station      205.000 to Point/Station      206.000
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**** ADD/COMBINE/RECOVER HYDROGRAPHS ****

********** HYDROGRAPH INFORMATION **********

From study/file name: arb1ap1100.rte

P R I N T O F S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals (CFS)

Time(h+m)	Add q(CFS)	Tot. Q	0 41.3 82.7 124.0 165.3
0+ 5	0.2324	0.45	Q
0+10	1.3570	3.15	Q
0+15	3.4967	9.48	q Q
0+20	4.6461	18.61	|q Q
0+25	5.7019	29.96	|q Q
0+30	6.3732	40.06	|q Q|
0+35	7.2317	51.03	|q | Q
0+40	8.5478	62.54	| q | Q
0+45	10.4869	76.38	| q | Q
0+50	13.9756	106.93	| q | Q
0+55	20.0488	141.11	| q | Q
1+ 0	23.0511	165.32	| q | Q
1+ 5	14.4382	162.21	| q | Q|
1+10	9.2639	143.38	| q | Q
1+15	5.2017	117.98	|q | Q
1+20	3.2413	71.50	q | Q
1+25	1.9729	52.88	q | Q
1+30	1.0971	37.74	q Q|
1+35	0.6334	27.65	q Q
1+40	0.4038	20.42	q Q
1+45	0.2995	15.06	q Q
1+50	0.2105	11.02	q Q
1+55	0.1243	8.37	q Q
2+ 0	0.0368	6.78	qQ
2+ 5	0.0108	5.50	qQ
2+10	0.0000	4.46	qQ
2+15	0.0000	3.63	Q
2+20	0.0000	2.95	Q
2+25	0.0000	2.39	Q
2+30	0.0000	1.95	Q
2+35	0.0000	1.58	Q
2+40	0.0000	1.29	Q
2+45	0.0000	1.04	Q
2+50	0.0000	0.85	Q
2+55	0.0000	0.69	Q
3+ 0	0.0000	0.56	Q
3+ 5	0.0000	0.46	Q
3+10	0.0000	0.37	Q
3+15	0.0000	0.30	Q
3+20	0.0000	0.24	Q
3+25	0.0000	0.20	Q
3+30	0.0000	0.16	Q
3+35	0.0000	0.13	Q
3+40	0.0000	0.11	Q
3+45	0.0000	0.09	Q
3+50	0.0000	0.07	Q
3+55	0.0000	0.06	Q
4+ 0	0.0000	0.05	Q
4+ 5	0.0000	0.04	Q
4+10	0.0000	0.03	Q
4+15	0.0000	0.03	Q
4+20	0.0000	0.02	Q
4+25	0.0000	0.02	Q
4+30	0.0000	0.01	Q
4+35	0.0000	0.01	Q

**********HYDROGRAPH DATA**********

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                Number of intervals =    55
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =      165.316 (CFS)
                Total volume =       9.706 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
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Process from Point/Station      206.000 to Point/Station      206.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data
---------------------------------------------------------------------
Total number of inflow hydrograph intervals = 55
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
---------------------------------------------------------------------
---------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
---------------------------------------------------------------------
---------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
---------------------------------------------------------------------
   0.000      0.000      0.000      0.000        0.000
   1.000      0.001     11.910     -0.040        0.042
   2.000      0.111     30.560      0.006        0.216
   3.000      0.766     52.220      0.586        0.946
   4.000      2.033     70.850      1.789        2.277
   5.000      3.628     86.670      3.330        3.926
---------------------------------------------------------------------
               Hydrograph Detention Basin Routing
---------------------------------------------------------------------

Graph values: 'I'= unit inflow; 'O'=outflow at time shown
---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                    Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0      41.3   82.66  123.99  165.32 (Ft.)
 0.083    0.45    0.44      0.000  O       |       |       |       |     0.04
 0.167    3.15    3.10      0.000  O       |       |       |       |     0.26
 0.250    9.48    9.38      0.001  |O      |       |       |       |     0.79
 0.333   18.61   14.39      0.016  | OI    |       |       |       |     1.13
 0.417   29.96   21.69      0.059  |   OI  |       |       |       |     1.52
 0.500   40.06   30.82      0.119  |    O I|       |       |       |     2.01
 0.583   51.03   33.83      0.210  |     O |I      |       |       |     2.15
 0.667   62.54   38.53      0.352  |      O|   I   |       |       |     2.37
 0.750   76.38   44.85      0.543  |       O     I |       |       |     2.66
 0.833  106.93   53.26      0.837  |       | O     |   I   |       |     3.06
 0.917  141.11   60.08      1.300  |       |  O    |       |  I    |     3.42
 1.000  165.32   69.06      1.911  |       |    O  |       |      I|     3.90
 1.083  162.21   75.88      2.540  |       |     O |       |      I|     4.32
 1.167  143.38   80.96      3.052  |       |      O|       |  I    |     4.64
 1.250  117.98   84.24      3.383  |       |       O     I |       |     4.85
 1.333   71.50   84.93      3.453  |       |    I  O       |       |     4.89
 1.417   52.88   83.43      3.302  |       | I     O       |       |     4.80
 1.500   37.74   80.91      3.048  |       I|      O|       |       |     4.64
 1.583   27.65   77.73      2.727  |     I  |      O|       |       |     4.43
 1.667   20.42   74.18      2.369  |  I     |     O |       |       |     4.21
 1.750   15.06   70.27      1.994  | I      |    O  |       |       |     3.97
 1.833   11.02   64.76      1.619  | I      |   O   |       |       |     3.67
 1.917    8.37   59.45      1.258  |I       |  O    |       |       |     3.39
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2.000    6.78   54.45      0.918  |I      | O     |       |       |     3.12
2.083    5.50   47.07      0.610  |I      |O      |       |       |     2.76
2.167    4.46   38.46      0.350  I      O|       |       |       |     2.36
2.250    3.63   31.43      0.137  I     O |       |       |       |     2.04
2.333    2.95   12.94      0.007  I O     |       |       |       |     1.06
2.417    2.39    0.00      0.000  O       |       |       |       |     0.00
2.500    1.95    9.39      0.001  IO      |       |       |       |     0.79
2.583    1.58    0.00      0.000  O       |       |       |       |     0.00
2.667    1.29    8.04      0.001  IO      |       |       |       |     0.67
2.750    1.04    0.00      0.000  O       |       |       |       |     0.00
2.833    0.85    6.97      0.001  IO      |       |       |       |     0.59
2.917    0.69    0.00      0.000  O       |       |       |       |     0.00
3.000    0.56    6.12      0.001  IO      |       |       |       |     0.51
3.083    0.46    0.00      0.000  O       |       |       |       |     0.00
3.167    0.37    5.41      0.000  IO      |       |       |       |     0.45
3.250    0.30    0.00      0.000  O       |       |       |       |     0.00
3.333    0.24    4.81      0.000  O       |       |       |       |     0.40
3.417    0.20    0.00      0.000  O       |       |       |       |     0.00
3.500    0.16    4.31      0.000  O       |       |       |       |     0.36
3.583    0.13    0.00      0.000  O       |       |       |       |     0.00
3.667    0.11    3.87      0.000  O       |       |       |       |     0.32
3.750    0.09    0.00      0.000  O       |       |       |       |     0.00
3.833    0.07    3.48      0.000  O       |       |       |       |     0.29
3.917    0.06    0.00      0.000  O       |       |       |       |     0.00
4.000    0.05    3.14      0.000  O       |       |       |       |     0.26
4.083    0.04    0.00      0.000  O       |       |       |       |     0.00
4.167    0.03    2.84      0.000  O       |       |       |       |     0.24
4.250    0.03    0.00      0.000  O       |       |       |       |     0.00
4.333    0.02    2.56      0.000  O       |       |       |       |     0.22
4.417    0.02    0.00      0.000  O       |       |       |       |     0.00
4.500    0.01    2.32      0.000  O       |       |       |       |     0.19
4.583    0.01    0.00      0.000  O       |       |       |       |     0.00
4.667    0.00    2.09      0.000  O       |       |       |       |     0.18
4.750    0.00    0.00      0.000  O       |       |       |       |     0.00

     ****************************HYDROGRAPH DATA****************************
                  Number of intervals =    57
                  Time interval =    5.0 (Min.)
                  Maximum/Peak flow rate =       84.935 (CFS)
                  Total volume =      10.096 (Ac.Ft)
           Status of hydrographs being held in storage
                     Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
           Peak (CFS)      0.000     0.000     0.000     0.000     0.000
           Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
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     Process from Point/Station      206.000 to Point/Station      209.000
     **** ADD/COMBINE/RECOVER HYDROGRAPHS ****
     ________________________________________________________________________
     ********************* HYDROGRAPH INFORMATION **********************

                  From study/file name: arb2p1100.rte
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                     P R I N T  O F  S T O R M
                  R u n o f f     H y d r o g r a p h
     ------------------------------------------------------------------------
               Hydrograph in   5   Minute intervals (CFS)

     ------------------------------------------------------------------------
Time(h+m) Add q(CFS)  Tot. Q   0       24.0      47.9      71.9      95.9
------------------------------------------------------------------------
  0+ 5       0.2452      0.69  Q         |         |         |         |
  0+10       1.2611      4.36  qQ        |         |         |         |
  0+15       3.8228     13.21  |q   Q    |         |         |         |
  0+20       5.3085     19.70  | q     Q |         |         |         |
  0+25       6.5991     28.28  | q       |Q        |         |         |
  0+30       7.4473     38.27  |  q      |    Q    |         |         |
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    0+35       8.4075     42.24  |  q       |       Q  |          |          |
    0+40       9.8132     48.34  |    q     |          Q          |          |
    0+45      11.9539     56.81  |    q     |          |  Q       |          |
    0+50      15.5196     68.78  |      q   |          |       Q  |          |
    0+55      21.3991     81.48  |        q |          |          |  Q       |
    1+ 0      26.8273     95.88  |          |q         |          |          Q
    1+ 5      18.3917     94.27  |       q  |          |          |         Q|
    1+10      12.1326     93.09  |     q    |          |          |        Q |
    1+15       7.1724     91.41  |  q       |          |          |        Q |
    1+20       4.6134     89.55  |q         |          |          |       Q  |
    1+25       3.0413     86.47  |q         |          |          |      Q   |
    1+30       1.9312     82.85  q          |          |          |    Q     |
    1+35       1.1161     78.85  q          |          |          |  Q       |
    1+40       0.6814     74.86  q          |          |          |Q         |
    1+45       0.4571     70.73  q          |          |          Q|         |
    1+50       0.3398     65.10  q          |          |        Q  |         |
    1+55       0.2718     59.72  q          |          |     Q     |         |
    2+ 0       0.1695     54.62  q          |          |  Q        |         |
    2+ 5       0.0950     47.17  q          |          Q|          |         |
    2+10       0.0268     38.49  q          |       Q   |          |         |
    2+15       0.0077     31.43  q          |    Q      |          |         |
    2+20       0.0000     12.94  q     Q    |           |          |         |
    2+25       0.0000      0.00  Q          |           |          |         |
    2+30       0.0000      9.39  q  Q       |           |          |         |
    2+35       0.0000      0.00  Q          |           |          |         |
    2+40       0.0000      8.04  q  Q       |           |          |         |
    2+45       0.0000      0.00  Q          |           |          |         |
    2+50       0.0000      6.97  q Q        |           |          |         |
    2+55       0.0000      0.00  Q          |           |          |         |
    3+ 0       0.0000      6.12  q Q        |           |          |         |
    3+ 5       0.0000      0.00  Q          |           |          |         |
    3+10       0.0000      5.41  q Q        |           |          |         |
    3+15       0.0000      0.00  Q          |           |          |         |
    3+20       0.0000      4.81  q Q        |           |          |         |
    3+25       0.0000      0.00  Q          |           |          |         |
    3+30       0.0000      4.31  qQ         |           |          |         |
    3+35       0.0000      0.00  Q          |           |          |         |
    3+40       0.0000      3.87  qQ         |           |          |         |
    3+45       0.0000      0.00  Q          |           |          |         |
    3+50       0.0000      3.48  qQ         |           |          |         |
    3+55       0.0000      0.00  Q          |           |          |         |
    4+ 0       0.0000      3.14  qQ         |           |          |         |
    4+ 5       0.0000      0.00  Q          |           |          |         |
    4+10       0.0000      2.84  qQ         |           |          |         |
    4+15       0.0000      0.00  Q          |           |          |         |
    4+20       0.0000      2.56  qQ         |           |          |         |
    4+25       0.0000      0.00  Q          |           |          |         |
    4+30       0.0000      2.32  Q          |           |          |         |
    4+35       0.0000      0.00  Q          |           |          |         |
    4+40       0.0000      2.09  Q          |           |          |         |
    4+45       0.0000      0.00  Q          |           |          |         |
--------------------------------------------------------------------------------
      ****************************HYDROGRAPH DATA****************************
                  Number of intervals =    57
                  Time interval =    5.0 (Min.)
                  Maximum/Peak flow rate =       95.883 (CFS)
                  Total volume =      11.260 (Ac.Ft)
            Status of hydrographs being held in storage
                      Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
            Peak (CFS)      0.000     0.000     0.000     0.000     0.000
            Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
      ********************************************************************************

      ------------------------------------------------------------------

      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
      Process from Point/Station      209.000 to Point/Station      209.000
      **** RETARDING BASIN ROUTING ****
      ________________________________________________________________________
```

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 57
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.000	0.048	4.791	0.031	0.064
2.000	0.215	18.118	0.153	0.277
3.000	0.432	33.639	0.316	0.547
4.000	0.701	49.206	0.532	0.870
5.000	1.046	56.400	0.852	1.240
6.000	1.483	63.144	1.266	1.700
7.000	2.012	69.888	1.771	2.253
8.000	2.649	75.551	2.389	2.909

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 24.0 47.94 71.91 95.88	Depth (Ft.)
0.083	0.69	0.18	0.002	O | | | |	0.04
0.167	4.36	1.38	0.014	OI | | | |	0.29
0.250	13.21	5.13	0.052	|O I | | | |	1.03
0.333	19.70	10.00	0.113	| O I | | | |	1.39
0.417	28.28	16.02	0.189	| O |I | | |	1.84
0.500	38.27	23.02	0.283	| O| I | | |	2.32
0.583	42.24	29.84	0.379	| |O I | | |	2.76
0.667	48.34	35.58	0.465	| O I | |	3.12
0.750	56.81	41.22	0.563	| O | I | |	3.49
0.833	68.78	48.38	0.687	| | O I | |	3.95
0.917	81.48	52.46	0.857	| | |O | I |	4.45
1.000	95.88	57.09	1.090	| | | O | I	5.10
1.083	94.27	60.92	1.339	| | | O | I|	5.67
1.167	93.09	64.05	1.554	| | | O | I|	6.13
1.250	91.41	66.42	1.740	| | | O | I |	6.49
1.333	89.55	68.44	1.899	| | | O | I |	6.79
1.417	86.47	70.03	2.028	| | | O| I |	7.02
1.500	82.85	70.90	2.126	| | | O| I |	7.18
1.583	78.85	71.49	2.192	| | | O| I |	7.28
1.667	74.86	71.81	2.228	| | | OI |	7.34
1.750	70.73	71.87	2.235	| | | O| |	7.35
1.833	65.10	71.63	2.208	| | | I O| |	7.31
1.917	59.72	71.08	2.147	| | | I O| |	7.21
2.000	54.62	70.26	2.054	| | | I O| |	7.07
2.083	47.17	68.78	1.925	| | I| O | |	6.84
2.167	38.49	66.60	1.754	| | I | O | |	6.51
2.250	31.43	63.94	1.545	| I | O | |	6.12
2.333	12.94	59.88	1.272	| I | | O | |	5.52
2.417	0.00	53.87	0.925	I | |O | |	4.65
2.500	9.39	44.43	0.618	| I | O | |	3.69
2.583	0.00	30.78	0.392	I | O | |	2.82
2.667	8.04	20.19	0.244	| I O | | |	2.13
2.750	0.00	13.41	0.156	I O | | |	1.65
2.833	6.97	9.14	0.102	| IO | | |	1.33
2.917	0.00	6.71	0.072	I O | | |	1.14
3.000	6.12	5.14	0.052	|OI | | |	1.03
3.083	0.00	4.13	0.041	IO | | |	0.86
3.167	5.41	3.40	0.034	|O | | |	0.71

3.250	0.00	3.04	0.030	IO	|	|	|	0.63
3.333	4.81	2.71	0.027	OI	|	|	|	0.57
3.417	0.00	2.56	0.025	O	|	|	|	0.53
3.500	4.31	2.35	0.023	OI	|	|	|	0.49
3.583	0.00	2.25	0.022	O	|	|	|	0.47
3.667	3.87	2.09	0.021	OI	|	|	|	0.44
3.750	0.00	2.01	0.020	O	|	|	|	0.42
3.833	3.48	1.87	0.019	OI	|	|	|	0.39
3.917	0.00	1.80	0.018	O	|	|	|	0.38
4.000	3.14	1.68	0.017	OI	|	|	|	0.35
4.083	0.00	1.62	0.016	O	|	|	|	0.34
4.167	2.84	1.52	0.015	O	|	|	|	0.32
4.250	0.00	1.47	0.015	O	|	|	|	0.31
4.333	2.56	1.37	0.014	O	|	|	|	0.29
4.417	0.00	1.33	0.013	O	|	|	|	0.28
4.500	2.32	1.24	0.012	O	|	|	|	0.26
4.583	0.00	1.20	0.012	O	|	|	|	0.25
4.667	2.09	1.12	0.011	O	|	|	|	0.23
4.750	0.00	1.08	0.011	O	|	|	|	0.23
4.833	0.00	0.53	0.005	O	|	|	|	0.11
4.917	0.00	0.25	0.003	O	|	|	|	0.05
5.000	0.00	0.12	0.001	O	|	|	|	0.03
5.083	0.00	0.06	0.001	O	|	|	|	0.01
5.167	0.00	0.03	0.000	O	|	|	|	0.01
5.250	0.00	0.01	0.000	O	|	|	|	0.00
5.333	0.00	0.01	0.000	O	|	|	|	0.00
5.417	0.00	0.00	0.000	O	|	|	|	0.00

**********HYDROGRAPH DATA**********

Number of intervals = 65
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 71.867 (CFS)
Total volume = 11.260 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

APPENDIX E: DRAINAGE FACILITY NORMAL DEPTH SIZING CALCULATIONS

APPENDIX E.1: LINE "A-1"

Worksheet for Line "A-1" - 10-year

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	0.04000	ft/ft
Left Side Slope	0.00	ft/ft (H:V)
Right Side Slope	2.00	ft/ft (H:V)
Bottom Width	5.00	ft
Discharge	301.90	ft^3/s

Results

Normal Depth	1.95	ft
Flow Area	13.52	ft^2
Wetted Perimeter	11.30	ft
Hydraulic Radius	1.20	ft
Top Width	8.89	ft
Critical Depth	3.75	ft
Critical Slope	0.00362	ft/ft
Velocity	22.33	ft/s
Velocity Head	7.75	ft
Specific Energy	9.70	ft
Froude Number	3.19	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.95	ft
Critical Depth	3.75	ft
Channel Slope	0.04000	ft/ft

Worksheet for Line "A-1" - 10-year

GVF Output Data

Critical Slope	0.00362	ft/ft

APPENDIX E.2: LINE "A-2"

Worksheet for Line "A-2" - Trapezoidal Channel - North - Reach 1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.02000	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	1.00	ft
Discharge	9.40	ft³/s

Results

Normal Depth	0.66	ft
Flow Area	1.10	ft²
Wetted Perimeter	2.87	ft
Hydraulic Radius	0.38	ft
Top Width	2.33	ft
Critical Depth	1.01	ft
Critical Slope	0.00390	ft/ft
Velocity	8.53	ft/s
Velocity Head	1.13	ft
Specific Energy	1.79	ft
Froude Number	2.18	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.66	ft
Critical Depth	1.01	ft
Channel Slope	0.02000	ft/ft

Worksheet for Line "A-2" - Trapezoidal Channel - North - Reach 1

GVF Output Data

Critical Slope	0.00390	ft/ft

Worksheet for Line "A-2" - Northerly Offsite V-ditch-reach 2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01000	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Discharge	9.40	ft³/s

Results

Normal Depth	1.21	ft
Flow Area	1.45	ft²
Wetted Perimeter	3.41	ft
Hydraulic Radius	0.43	ft
Top Width	2.41	ft
Critical Depth	1.41	ft
Critical Slope	0.00440	ft/ft
Velocity	6.47	ft/s
Velocity Head	0.65	ft
Specific Energy	1.86	ft
Froude Number	1.47	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.21	ft
Critical Depth	1.41	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.00440	ft/ft

APPENDIX E.3: LATERAL C1 & C2

Worksheet for LATERAL C1 & C2 - Westerly onsite double pipe

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01000	ft/ft
Diameter	1.50	ft
Discharge	11.15	ft³/s

Results

Normal Depth	1.34	ft
Flow Area	1.66	ft²
Wetted Perimeter	3.71	ft
Hydraulic Radius	0.45	ft
Top Width	0.93	ft
Critical Depth	1.28	ft
Percent Full	89.2	%
Critical Slope	0.01058	ft/ft
Velocity	6.70	ft/s
Velocity Head	0.70	ft
Specific Energy	2.04	ft
Froude Number	0.88	
Maximum Discharge	11.30	ft³/s
Discharge Full	10.50	ft³/s
Slope Full	0.01127	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	89.19	%
Downstream Velocity	Infinity	ft/s

Worksheet for LATERAL C1 & C2 - Westerly onsite double pipe

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.34	ft
Critical Depth	1.28	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.01058	ft/ft

APPENDIX E.4: LATERAL D

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DELETED DURING FINAL ENGINEERING AT 100% PLAN SUBMITTAL

APPENDIX E.5: LATERAL E

Worksheet for LATERAL E - 12" Pipe - North easterly

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00500	ft/ft
Diameter	1.50	ft
Discharge	1.80	ft³/s

Results

Normal Depth	0.50	ft
Flow Area	0.52	ft²
Wetted Perimeter	1.85	ft
Hydraulic Radius	0.28	ft
Top Width	1.42	ft
Critical Depth	0.50	ft
Percent Full	33.5	%
Critical Slope	0.00492	ft/ft
Velocity	3.46	ft/s
Velocity Head	0.19	ft
Specific Energy	0.69	ft
Froude Number	1.01	
Maximum Discharge	7.99	ft³/s
Discharge Full	7.43	ft³/s
Slope Full	0.00029	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	33.53	%
Downstream Velocity	Infinity	ft/s

Worksheet for LATERAL E - 12" Pipe - North easterly

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.50	ft
Critical Depth	0.50	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.00492	ft/ft

APPENDIX E.6: ONSITE AND OFFSITE DITCHES

Worksheet for DITCH #1 - Trapezoidal Channel - West

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.01670	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	1.00	ft
Discharge	30.40	ft³/s

Results

Normal Depth	1.25	ft
Flow Area	2.83	ft²
Wetted Perimeter	4.55	ft
Hydraulic Radius	0.62	ft
Top Width	3.51	ft
Critical Depth	1.81	ft
Critical Slope	0.00347	ft/ft
Velocity	10.76	ft/s
Velocity Head	1.80	ft
Specific Energy	3.05	ft
Froude Number	2.11	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.25	ft
Critical Depth	1.81	ft
Channel Slope	0.01670	ft/ft

Worksheet for DITCH #1 - Trapezoidal Channel - West

GVF Output Data

Critical Slope	0.00347	ft/ft

Worksheet for DITCH #2 - Trapezoidal Channel - West

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00280	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	1.00	ft
Discharge	22.30	ft³/s

Results

Normal Depth	1.65	ft
Flow Area	4.38	ft²
Wetted Perimeter	5.67	ft
Hydraulic Radius	0.77	ft
Top Width	4.30	ft
Critical Depth	1.56	ft
Critical Slope	0.00358	ft/ft
Velocity	5.09	ft/s
Velocity Head	0.40	ft
Specific Energy	2.05	ft
Froude Number	0.89	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.65	ft
Critical Depth	1.56	ft
Channel Slope	0.00280	ft/ft

Worksheet for DITCH #2 - Trapezoidal Channel - West

GVF Output Data

Critical Slope	0.00358	ft/ft

Worksheet for DITCH #5 - Trapezoidal Channel - North

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00520	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	2.00	ft
Discharge	19.60	ft³/s

Results

Normal Depth	1.05	ft
Flow Area	3.19	ft²
Wetted Perimeter	4.96	ft
Hydraulic Radius	0.64	ft
Top Width	4.09	ft
Critical Depth	1.18	ft
Critical Slope	0.00339	ft/ft
Velocity	6.14	ft/s
Velocity Head	0.59	ft
Specific Energy	1.63	ft
Froude Number	1.23	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.05	ft
Critical Depth	1.18	ft
Channel Slope	0.00520	ft/ft

Worksheet for DITCH #5 - Trapezoidal Channel - North

GVF Output Data

Critical Slope	0.00339	ft/ft

Worksheet for DITCH #6 - V-Ditch - North

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00500	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	2.00	ft
Discharge	6.50	ft³/s

Results

Normal Depth	0.57	ft
Flow Area	1.47	ft²
Wetted Perimeter	3.61	ft
Hydraulic Radius	0.41	ft
Top Width	3.14	ft
Critical Depth	0.62	ft
Critical Slope	0.00377	ft/ft
Velocity	4.43	ft/s
Velocity Head	0.31	ft
Specific Energy	0.88	ft
Froude Number	1.14	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.57	ft
Critical Depth	0.62	ft
Channel Slope	0.00500	ft/ft

Worksheet for DITCH #6 - V-Ditch - North

GVF Output Data

Critical Slope	0.00377	ft/ft

Worksheet for DITCH #7 - V-Ditch - North

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00500	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	2.00	ft
Discharge	1.80	ft³/s

Results

Normal Depth	0.27	ft
Flow Area	0.61	ft²
Wetted Perimeter	2.76	ft
Hydraulic Radius	0.22	ft
Top Width	2.54	ft
Critical Depth	0.28	ft
Critical Slope	0.00439	ft/ft
Velocity	2.95	ft/s
Velocity Head	0.14	ft
Specific Energy	0.40	ft
Froude Number	1.06	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.27	ft
Critical Depth	0.28	ft
Channel Slope	0.00500	ft/ft

Worksheet for DITCH #7 - V-Ditch - North

GVF Output Data

Critical Slope	0.00439	ft/ft

Worksheet for DITCH #8 - Trapezoidal Channel - West

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00520	ft/ft
Left Side Slope	1.00	ft/ft (H:V)
Right Side Slope	1.00	ft/ft (H:V)
Bottom Width	1.00	ft
Discharge	17.80	ft^3/s

Results

Normal Depth	1.28	ft
Flow Area	2.93	ft^2
Wetted Perimeter	4.63	ft
Hydraulic Radius	0.63	ft
Top Width	3.57	ft
Critical Depth	1.40	ft
Critical Slope	0.00366	ft/ft
Velocity	6.08	ft/s
Velocity Head	0.57	ft
Specific Energy	1.86	ft
Froude Number	1.18	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.28	ft
Critical Depth	1.40	ft
Channel Slope	0.00520	ft/ft

Worksheet for DITCH #8 - Trapezoidal Channel - West

GVF Output Data

Critical Slope	0.00366	ft/ft

APPENDIX F: STORM DRAIN WATER SURFACE PROFILE GRADIENT PROGRAM CALCULATIONS

APPENDIX F.1: LINE "A"

```
T1 SCE ALBERHILL 100-YEAR ANALYSIS                                              0
T2 FILENAME: LINEA
T3
SO   1000.0001175.900  1                          1175.900
R    1071.2701176.300  1      .013                              .000    .000 0
R    1134.1001176.653  1      .013                           -89.997    .000 0
R    1251.2601177.311  1      .013                              .000    .000 0
JX   1258.6701177.353  3  2   .013   65.600         1177.410         45.0         .000
R    1409.8001178.209  3      .013                              .000    .000 0
WE   1409.8001178.209  4      .250
SH   1409.8001178.209  4                          1178.209
CD   1  4   1    .000   3.500     .000  .000  .000   .00
CD   2  4   1    .000   3.000     .000  .000  .000   .00
CD   3  4   1    .000   3.000     .000  .000  .000   .00
CD   4  2   0    .000  10.000   18.000  .000  .000   .00
Q            57.355   .0
```

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3:18:24

SCE ALBERHILL 100-YEAR ANALYSIS

FILENAME: LINEA

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	1175.900	3.268	1179.168	122.96	13.15	2.69	1181.85	.00	3.27	1.74	3.500	.000	.00	1 .0
10.239	.0056					.0136	.14	3.27	1.00	3.50	.013	.00	.00	PIPE
1010.239	1175.958	3.500	1179.458	122.96	12.78	2.54	1181.99	.00	3.27	.00	3.500	.000	.00	1 .0
61.031	.0056					.0146	.89	3.50	.00	3.50	.013	.00	.00	PIPE
1071.270	1176.300	4.069	1180.369	122.96	12.78	2.54	1182.91	.00	3.27	.00	3.500	.000	.00	1 .0
62.830	.0056					.0149	.94	.00	.00	3.50	.013	.00	.00	PIPE
1134.100	1176.653	5.162	1181.815	122.96	12.78	2.54	1184.35	.00	3.27	.00	3.500	.000	.00	1 .0
117.160	.0056					.0149	1.75	5.16	.00	3.50	.013	.00	.00	PIPE
1251.260	1177.311	6.253	1183.564	122.96	12.78	2.54	1186.10	.00	3.27	.00	3.500	.000	.00	1 .0
JUNCT STR	.0057					.0112	.08	6.25	.00		.013	.00	.00	PIPE
1258.670	1177.353	8.808	1186.161	57.35	8.11	1.02	1187.18	.00	2.45	.00	3.000	.000	.00	1 .0
151.130	.0057					.0074	1.12	8.81	.00	3.00	.013	.00	.00	PIPE
1409.800	1178.209	9.069	1187.278	57.35	8.11	1.02	1188.30	.00	2.45	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE													
1409.800	1178.209	10.346	1188.555	57.35	.31	.00	1188.56	.00	.68	18.00	10.000	18.000	.00	0 .0

APPENDIX F.2: LATERAL A-1

```
T1 ALBERHILL STORM DRAIN                                                    0
T2 WSPG RUN FOR LINE A4
T3 FN: LINEA4.WSW
SO   1005.9001177.450  1                        1186.161
R    1012.8201177.503  1      .013                            .000    .000 0
R    1028.6001177.617  1      .013                          45.206    .000 0
R    1053.9801177.800  1      .013                            .000    .000 0
SH   1053.9801177.800  1                        1177.800
CD   1  4   1    .000   3.000     .000  .000  .000   .00
Q            65.600   .0
```

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 3:24:13

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE A4
FN: LINEA4.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1005.900	1177.450	8.711	1186.161	65.60	9.28	1.34	1187.50	.00	2.59	.00	3.000	.000	.00	1 .0
6.920	.0077					.0097	.07	8.71	.00	3.00	.013	.00	.00	PIPE
1012.820	1177.503	8.725	1186.228	65.60	9.28	1.34	1187.57	.00	2.59	.00	3.000	.000	.00	1 .0
15.780	.0072					.0097	.15	.00	.00	3.00	.013	.00	.00	PIPE
1028.600	1177.617	8.953	1186.570	65.60	9.28	1.34	1187.91	.00	2.59	.00	3.000	.000	.00	1 .0
25.380	.0072					.0097	.25	8.95	.00	3.00	.013	.00	.00	PIPE
1053.980	1177.800	9.016	1186.816	65.60	9.28	1.34	1188.15	.00	2.59	.00	3.000	.000	.00	1 .0

APPENDIX F.3: LINE "B"

```
T1 ALBERHILL STORM DRAIN                                                    0
T2 WSPG RUN FOR LINE B
T3 FN: LINEB.WSW
SO   1000.0001176.000  1                          1176.000
R    1022.6001176.171  1      .013                              .000    .000 0
R    1069.8601176.529  1      .013                            60.173    .000 0
R    1107.7001176.815  1      .013                              .000    .000 0
R    1300.9301178.278  1      .013                           -60.499    .000 0
R    1975.6701183.386  1      .013                              .000    .000 0
R    2045.7801183.917  1      .013                           -44.633    .000 0
R    2214.9801185.197  1      .013                              .000    .000 0
R    2232.4201185.329  1      .013                            22.205    .000 0
R    2340.1501186.145  1      .013                              .000    .000 0
R    2689.3601188.788  3      .013                              .000    .000 0
R    2741.7101189.185  3      .013                           -29.994    .000 0
R    2848.7501190.000  3      .013                              .000    .000 0
WE   2848.7501190.000  4      .250
SH   2848.7501190.000  4                          1190.000
CD   1  4   1    .000   3.500     .000  .000  .000   .00
CD   2  4   1    .000   3.000     .000  .000  .000   .00
CD   3  4   1    .000   3.000     .000  .000  .000   .00
CD   4  2   0    .000  10.000    5.000  .000  .000   .00
Q            71.867   .0
```

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-30-2011 Time: 9:10:42

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1176.000	2.414	1178.414	71.87	10.15	1.60	1180.02	.00	2.66	3.24	3.500	.000	.00	1 .0
22.600	.0076					.0076	.17	2.41	1.21	2.41	.013	.00	.00	PIPE
1022.600	1176.171	2.414	1178.585	71.87	10.15	1.60	1180.19	.23	2.66	3.24	3.500	.000	.00	1 .0
47.260	.0076					.0076	.36	2.64	1.21	2.41	.013	.00	.00	PIPE
1069.860	1176.529	2.415	1178.944	71.87	10.15	1.60	1180.54	.00	2.66	3.24	3.500	.000	.00	1 .0
37.840	.0076					.0076	.29	2.41	1.21	2.42	.013	.00	.00	PIPE
1107.700	1176.815	2.414	1179.229	71.87	10.16	1.60	1180.83	.06	2.66	3.24	3.500	.000	.00	1 .0
72.639	.0076					.0076	.55	2.47	1.21	2.41	.013	.00	.00	PIPE
1180.339	1177.365	2.414	1179.779	71.87	10.16	1.60	1181.38	.06	2.66	3.24	3.500	.000	.00	1 .0
120.591	.0076					.0076	.91	2.47	1.21	2.41	.013	.00	.00	PIPE
1300.930	1178.278	2.414	1180.692	71.87	10.15	1.60	1182.29	.00	2.66	3.24	3.500	.000	.00	1 .0
565.100	.0076					.0076	4.28	2.41	1.21	2.41	.013	.00	.00	PIPE
1866.030	1182.556	2.414	1184.970	71.87	10.15	1.60	1186.57	.00	2.66	3.24	3.500	.000	.00	1 .0
109.640	.0076					.0076	.83	2.41	1.21	2.41	.013	.00	.00	PIPE
1975.670	1183.386	2.414	1185.800	71.87	10.16	1.60	1187.40	.12	2.66	3.24	3.500	.000	.00	1 .0
70.110	.0076					.0076	.53	2.53	1.21	2.41	.013	.00	.00	PIPE
2045.780	1183.917	2.415	1186.332	71.87	10.15	1.60	1187.93	.00	2.66	3.24	3.500	.000	.00	1 .0
58.940	.0076					.0076	.45	2.41	1.21	2.41	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-30-2011 Time: 9:10:42

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2104.720	1184.363	2.415	1186.777	71.87	10.15	1.60	1188.38	.00	2.66	3.24	3.500	.000	.00	1 .0
110.260	.0076					.0075	.83	2.41	1.21	2.41	.013	.00	.00	PIPE
2214.980	1185.197	2.419	1187.616	71.87	10.13	1.59	1189.21	.23	2.66	3.23	3.500	.000	.00	1 .0
17.440	.0076					.0075	.13	2.65	1.21	2.41	.013	.00	.00	PIPE
2232.420	1185.329	2.421	1187.750	71.87	10.12	1.59	1189.34	.00	2.66	3.23	3.500	.000	.00	1 .0
29.571	.0076					.0075	.22	2.42	1.20	2.41	.013	.00	.00	PIPE
2261.991	1185.553	2.426	1187.979	71.87	10.10	1.58	1189.56	.00	2.66	3.23	3.500	.000	.00	1 .0
68.580	.0076					.0071	.48	2.43	1.20	2.41	.013	.00	.00	PIPE
2330.571	1186.073	2.535	1188.608	71.87	9.63	1.44	1190.05	.00	2.66	3.13	3.500	.000	.00	1 .0
9.579	.0076					.0063	.06	2.54	1.10	2.41	.013	.00	.00	PIPE
2340.150	1186.145	2.655	1188.800	71.87	9.18	1.31	1190.11	.00	2.66	3.00	3.500	.000	.00	1 .0
2340.150	1186.145	2.682	1188.827	71.87	10.78	1.80	1190.63	.00	2.68	1.85	3.000	.000	.00	1 .0
19.161	.0076					.0102	.20	2.68	1.00	3.00	.013	.00	.00	PIPE
2359.311	1186.290	2.897	1189.187	71.87	10.28	1.64	1190.83	.00	2.68	1.10	3.000	.000	.00	1 .0
22.525	.0076					.0106	.24	2.90	.72	3.00	.013	.00	.00	PIPE
2381.836	1186.461	3.000	1189.461	71.87	10.17	1.61	1191.07	.00	2.68	.00	3.000	.000	.00	1 .0
307.524	.0076					.0113	3.48	3.00	.00	3.00	.013	.00	.00	PIPE
2689.360	1188.788	4.243	1193.031	71.87	10.17	1.61	1194.64	.00	2.68	.00	3.000	.000	.00	1 .0
52.350	.0076					.0116	.61	.00	.00	3.00	.013	.00	.00	PIPE

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-30-2011 Time: 9:10:42

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B
FN: LINEB.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2741.710	1189.185	4.639	1193.824	71.87	10.17	1.61	1195.43	.00	2.68	.00	3.000	.000	.00	1 .0
107.040	.0076					.0116	1.24	4.64	.00	3.00	.013	.00	.00	PIPE
2848.750	1190.000	5.067	1195.067	71.87	10.17	1.61	1196.67	.00	2.68	.00	3.000	.000	.00	1 .0
WALL	ENTRANCE													
2848.750	1190.000	6.991	1196.991	71.87	2.06	.07	1197.06	.00	1.86	5.00	10.000	5.000	.00	0 .0

APPENDIX F.4: LATERAL B-2

```
T1 ALBERHILL STORM DRAIN                                                    0
T2 WSPG RUN FOR LINE B1
T3 FN: LINEB1.WSW
SO   1000.0001191.000  1                          1195.000
R    1237.9401194.500  1      .013                                .000    .000 0
WE   1237.9401194.500  2      .250
SH   1237.9401194.500  2                          1194.500
CD   1  4   1    .000   3.500     .000  .000  .000   .00
CD   2  2   0    .000   5.000    5.000  .000  .000   .00
Q            84.935   .0
```

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2: 1:30

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LINEB1.WSW

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	1191.000	4.000	1195.000	84.93	8.83 / 1.21 /	1196.21 /	.00 /	2.87 /	.00 /	3.500 /	.000 /	.00 /	1 .0
48.953	.0147				.0071	.35	4.00	.00	2.15	.013	.00	.00	PIPE
1048.953	1191.720	3.626	1195.346	84.93	8.83 / 1.21 /	1196.56 /	.00 /	2.87 /	.00 /	3.500 /	.000 /	.00 /	1 .0
HYDRAULIC JUMP													
1048.953	1191.720	2.193	1193.913	84.93	13.39 / 2.78 /	1196.70 /	.00 /	2.87 /	3.39 /	3.500 /	.000 /	.00 /	1 .0
99.009	.0147				.0131	1.30	2.19	1.72	2.15	.013	.00	.00	PIPE
1147.962	1193.177	2.285	1195.461	84.93	12.77 / 2.53 /	1197.99 /	.00 /	2.87 /	3.33 /	3.500 /	.000 /	.00 /	1 .0
42.714	.0147				.0116	.50	2.28	1.59	2.15	.013	.00	.00	PIPE
1190.676	1193.805	2.383	1196.188	84.93	12.17 / 2.30 /	1198.49 /	.00 /	2.87 /	3.26 /	3.500 /	.000 /	.00 /	1 .0
23.737	.0147				.0104	.25	2.38	1.47	2.15	.013	.00	.00	PIPE
1214.413	1194.154	2.489	1196.643	84.93	11.61 / 2.09 /	1198.73 /	.00 /	2.87 /	3.17 /	3.500 /	.000 /	.00 /	1 .0
13.842	.0147				.0092	.13	2.49	1.35	2.15	.013	.00	.00	PIPE
1228.255	1194.358	2.603	1196.961	84.93	11.07 / 1.90 /	1198.86 /	.00 /	2.87 /	3.06 /	3.500 /	.000 /	.00 /	1 .0
7.361	.0147				.0083	.06	2.60	1.23	2.15	.013	.00	.00	PIPE
1235.616	1194.466	2.729	1197.195	84.93	10.55 / 1.73 /	1198.92 /	.00 /	2.87 /	2.90 /	3.500 /	.000 /	.00 /	1 .0
2.324	.0147				.0075	.02	2.73	1.12	2.15	.013	.00	.00	PIPE
1237.940	1194.500	2.871	1197.370	84.93	10.06 / 1.57 /	1198.94 /	.00 /	2.87 /	2.69 /	3.500 /	.000 /	.00 /	1 .0
WALL	ENTRANCE												

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-29-2011 Time: 2: 1:30

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B1
FN: LINEB1.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1237.940	1194.500	5.347	1199.847	84.93	3.18	.16	1200.00	.00	2.08	5.00	5.000	5.000	.00	0 .0

APPENDIX F.5: LATERAL B-3

```
T1 ALBERHILL STORM DRAIN                                                    0
T2 WSPG RUN FOR LINE B2
T3 FN: LINEB3.WSW
SO   1000.0001200.000  1                          1203.000
R    1057.5001201.000  1      .013                                .000    .000 0
SH   1057.5001201.000  1                          1200.000
CD   1  4   1    .000   4.000     .000  .000  .000   .00
Q           147.800   .0
```

Program Package Serial Number: 1856

WATER SURFACE PROFILE LISTING Date:12-30-2011 Time: 9:12:26

ALBERHILL STORM DRAIN
WSPG RUN FOR LINE B2
FN: LINEB3.WSW

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	1200.000	2.991	1202.991	147.80	14.66	3.34	1206.33	.00	3.58	3.47	4.000	.000	.00	1 .0
14.361	.0174					.0125	.18	2.99	1.52	2.66	.013	.00	.00	PIPE
1014.361	1200.250	3.048	1203.298	147.80	14.38	3.21	1206.51	.00	3.58	3.41	4.000	.000	.00	1 .0
24.564	.0174					.0117	.29	3.05	1.46	2.66	.013	.00	.00	PIPE
1038.924	1200.677	3.200	1203.877	147.80	13.71	2.92	1206.80	.00	3.58	3.20	4.000	.000	.00	1 .0
13.774	.0174					.0106	.15	3.20	1.32	2.66	.013	.00	.00	PIPE
1052.699	1200.917	3.372	1204.288	147.80	13.08	2.65	1206.94	.00	3.58	2.91	4.000	.000	.00	1 .0
4.801	.0174					.0097	.05	3.37	1.17	2.66	.013	.00	.00	PIPE
1057.500	1201.000	3.577	1204.577	147.80	12.46	2.41	1206.99	.00	3.58	2.46	4.000	.000	.00	1 .0

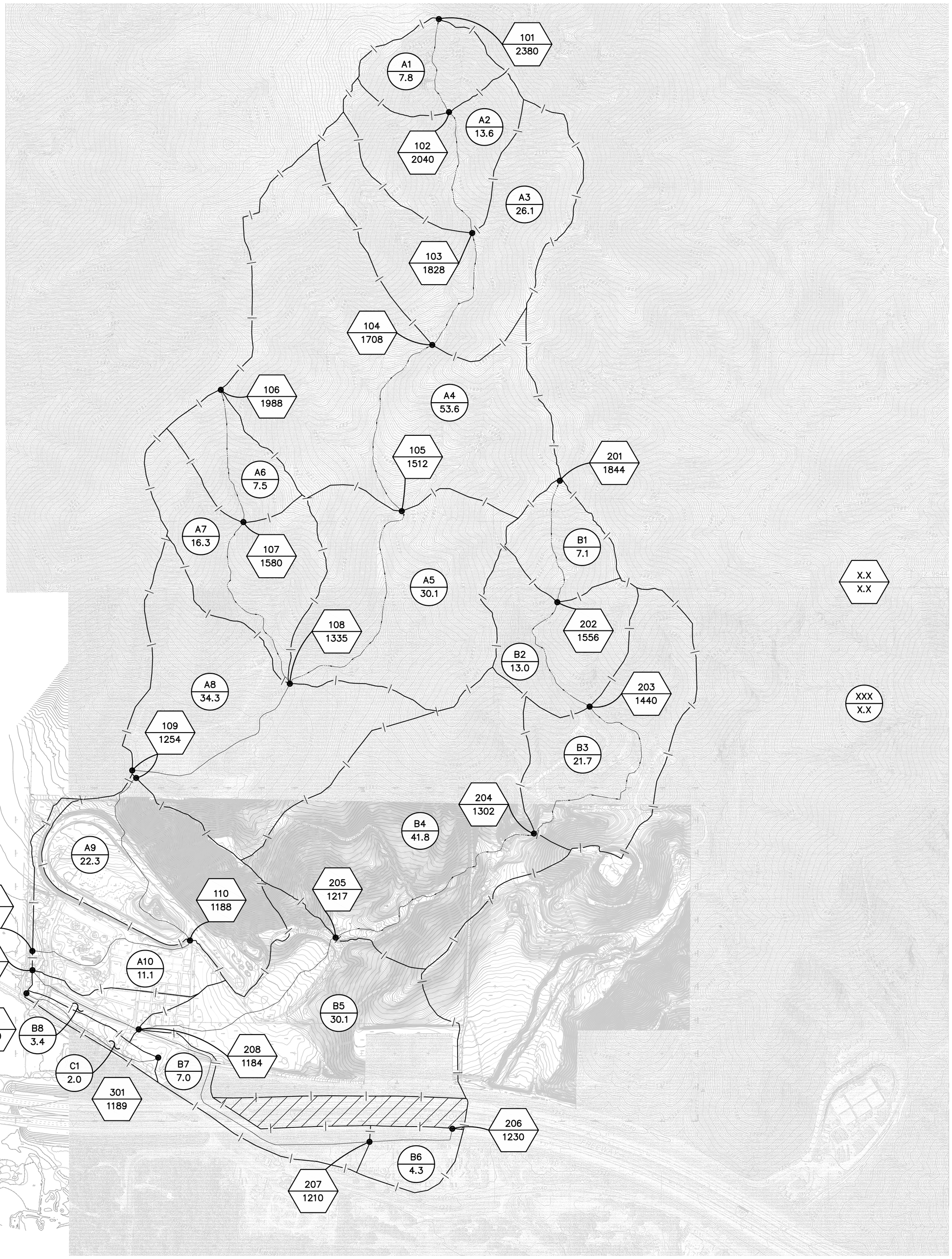
EXHIBITS

EXHIBIT A: EXISTING CONDITION RATIONAL METHOD HYDROLOGY MAP

SCE ALBERHILL SUBSTATION

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

POST-PROJECT CONDITION SITE HYDROLOGY MAP



LEGEND:

X.X / X.X	NODE/CONCENTRATION POINT / FLOWLINE ELEVATION
XXX / X.X	SUB AREA / ACRES
---◄---	FLOW PATH
—|—	WATERSHED BOUNDARY

N

GRAPHIC SCALE

300' 0 150' 300' 600'

1" = 300'

JLC Engineering & Consulting, Inc.

36263 CALLE DE LOBO
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

EXHIBIT "A"

SCE ALBERHILL

POST-PROJECT CONDITION SITE HYDROLOGY MAP

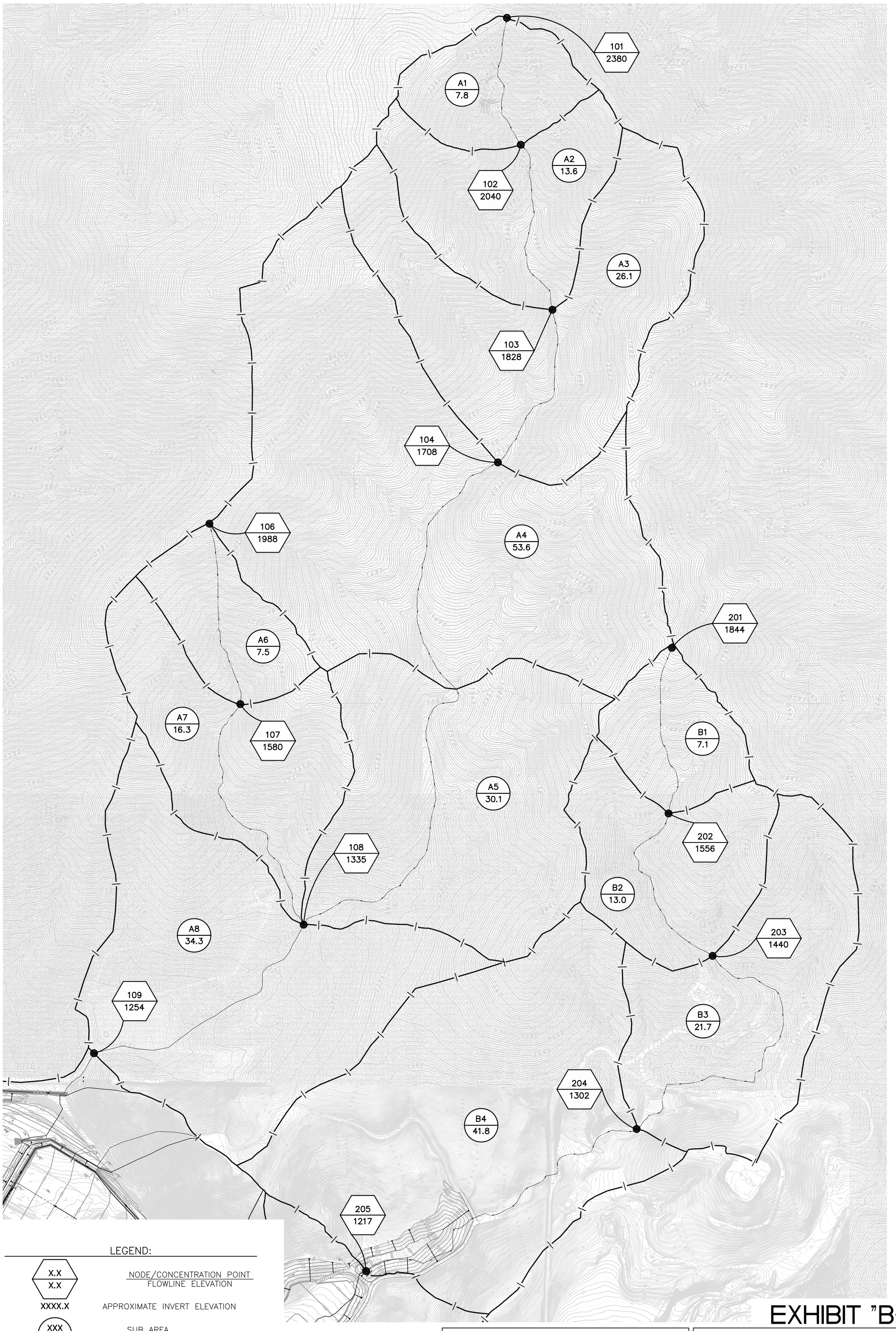
Drawing Name: O:\163.01.10\Tentative_Tract_Map\Engineering\Hydrology_Plan\Exhibits\Hydrology Map.dwg
Last Opened: Aug 23, 2011 – 10:48am by joe

EXHIBIT B: **POST-PROJECT CONDITION RATIONAL METHOD HYDROLOGY MAP**

SCE ALBERHILL SUBSTATION

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

POST-PROJECT CONDITION HYDROLOGY MAP



LEGEND:

X.X / X.X	NODE/CONCENTRATION POINT / FLOWLINE ELEVATION
XXXX.X	APPROXIMATE INVERT ELEVATION
XXX / X.X	SUB AREA / ACRES
	FLOW PATH
	WATERSHED BOUNDARY

GRAPHIC SCALE
200' 0 100' 200' 400'

N

EXHIBIT "B-1"

JLC Engineering & Consulting, Inc.
36263 CALLE DE LOBO
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

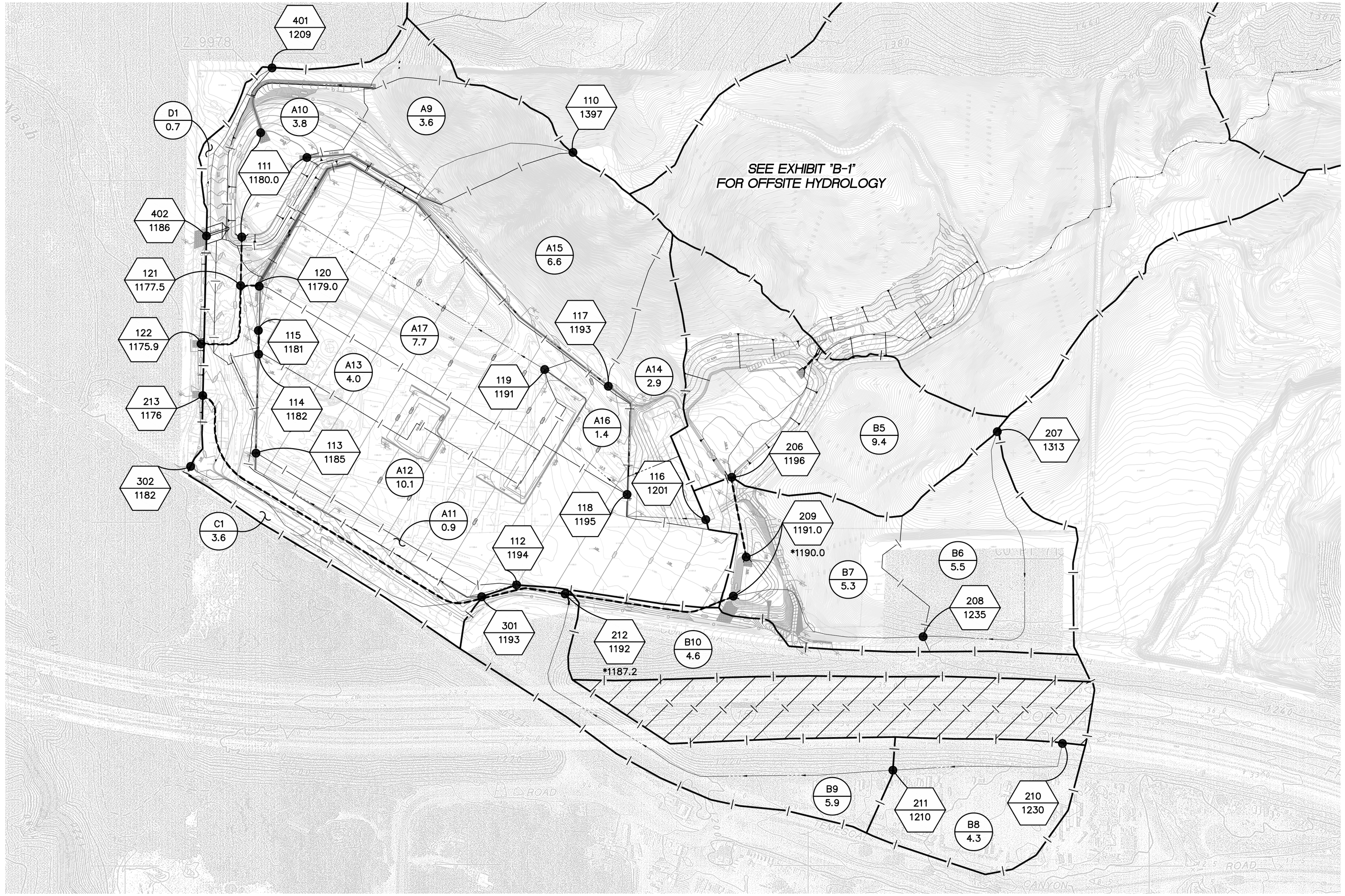
SCE ALBERHILL

POST-PROJECT CONDITION HYDROLOGY MAP

SCE ALBERHILL SUBSTATION

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

POST-PROJECT CONDITION HYDROLOGY MAP



LEGEND:

- X.X / X.X — NODE/CONCENTRATION POINT / FLOWLINE ELEVATION
- XXXX.X — APPROXIMATE INVERT ELEVATION
- XXX / X.X — SUB AREA / ACRES
- FLOW PATH
- WATERSHED BOUNDARY

N

GRAPHIC SCALE
150' 0 75' 150' 300'
1" = 150'

EXHIBIT "B-2"

JLC Engineering & Consulting, Inc.
36263 CALLE DE LOBO
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

SCE ALBERHILL

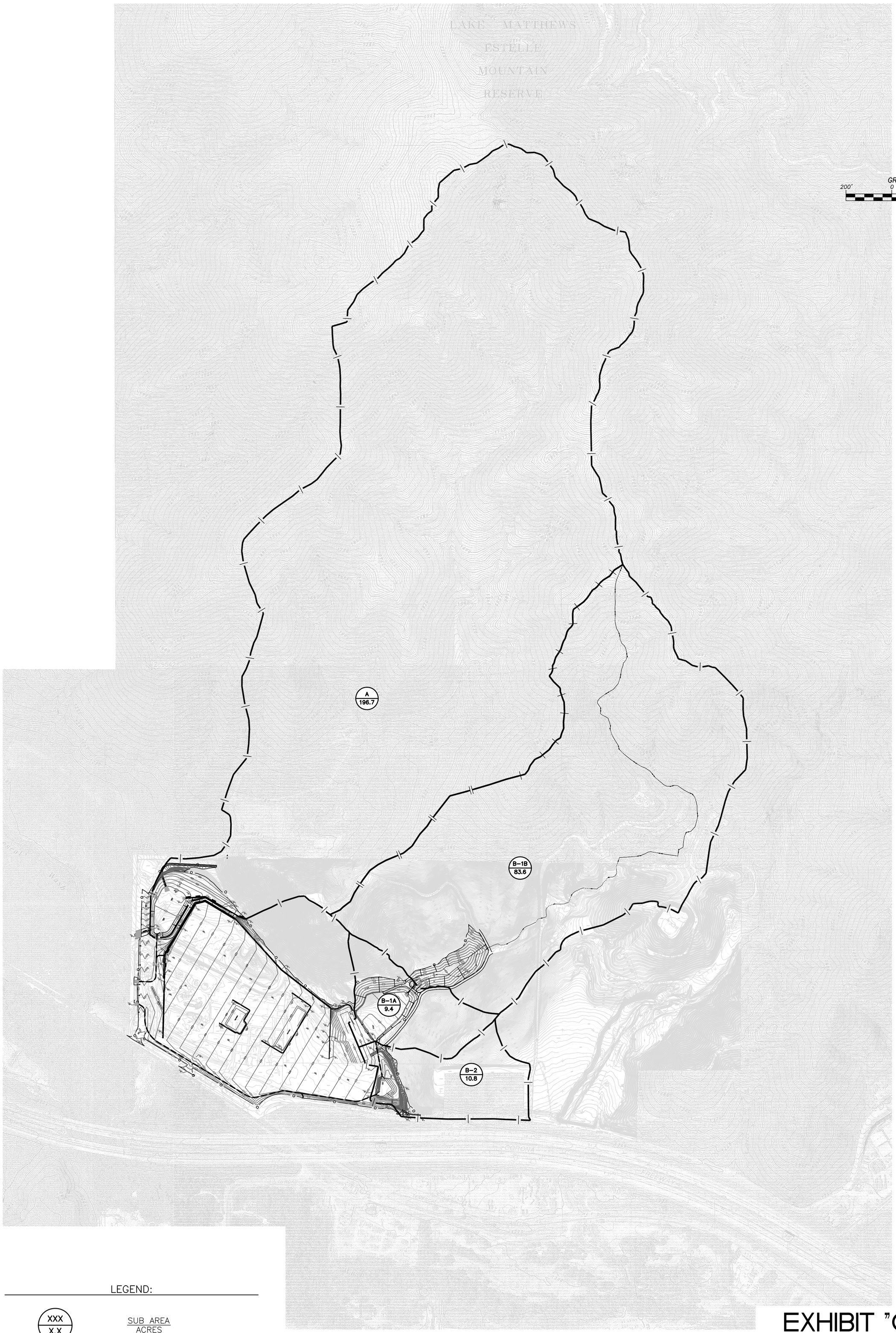
POST-PROJECT CONDITION HYDROLOGY MAP

EXHIBIT C: ONSITE BASIN UNIT HYDROGRAPH WATERSHED AREAS

SCE ALBERHILL SUBSTATION

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

POST-PROJECT UNIT HYDROGRAPH WATERSHED MAP



LEGEND:

XXX / X.X — SUB AREA / ACRES

——|——|—— WATERSHED BOUNDARY

EXHIBIT "C"

JLC Engineering & Consulting, Inc.
36263 CALLE DE LOBO
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PH. 951.304.9552 FAX 951.304.3568

SCE ALBERHILL

POST-PROJECT UNIT HYDROGRAPH WATERSHED

EXHIBIT D: DRAINAGE FACILITIES MAP

SCE ALBERHILL SUBSTATION

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

DRAINAGE FACILITIES MAP

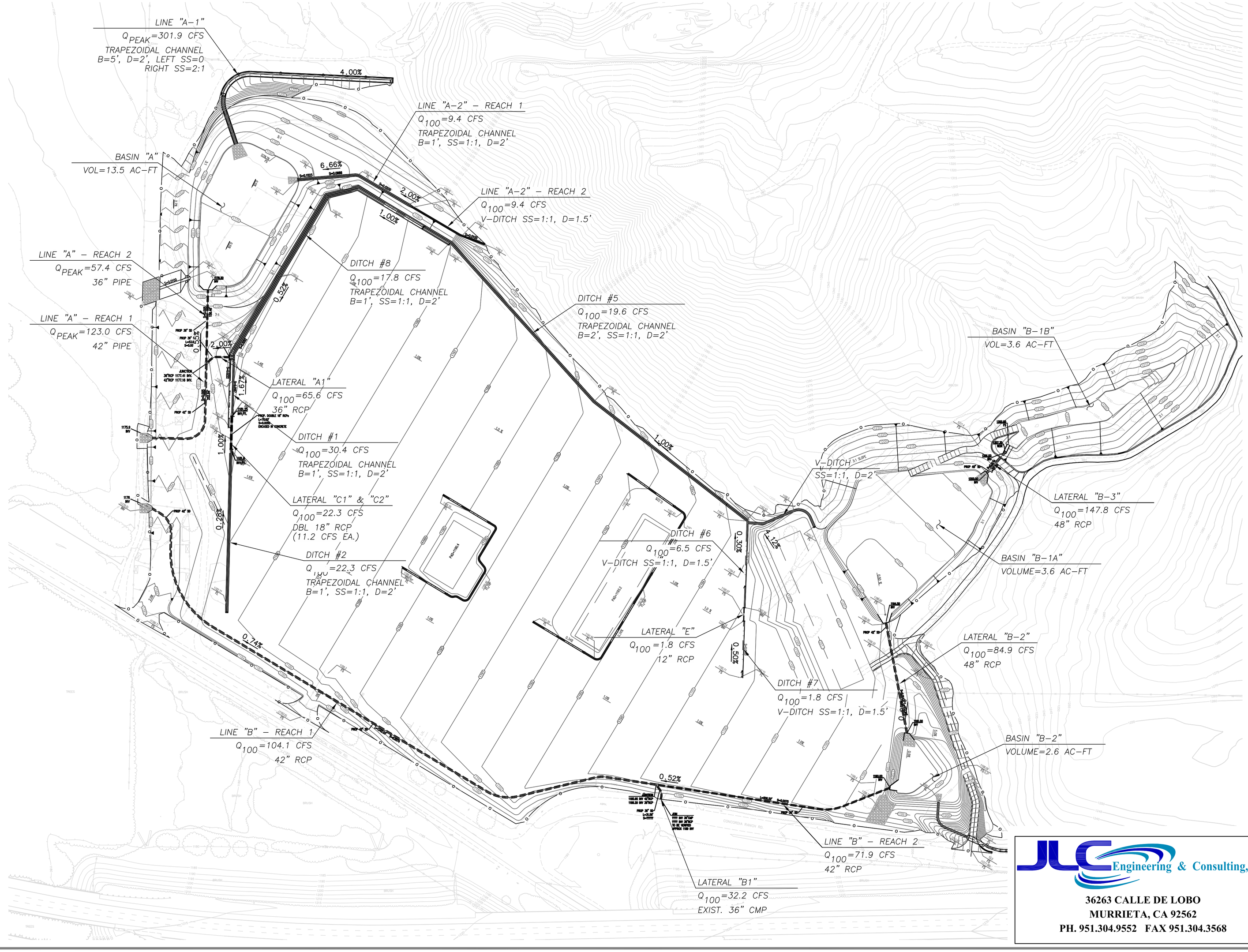

EXHIBIT "D"

SCE ALBERHILL

DRAINAGE FACILITIES MAP

JLC Engineering & Consulting, Inc.
36263 CALLE DE LOBO
MURRIETA, CA 92562
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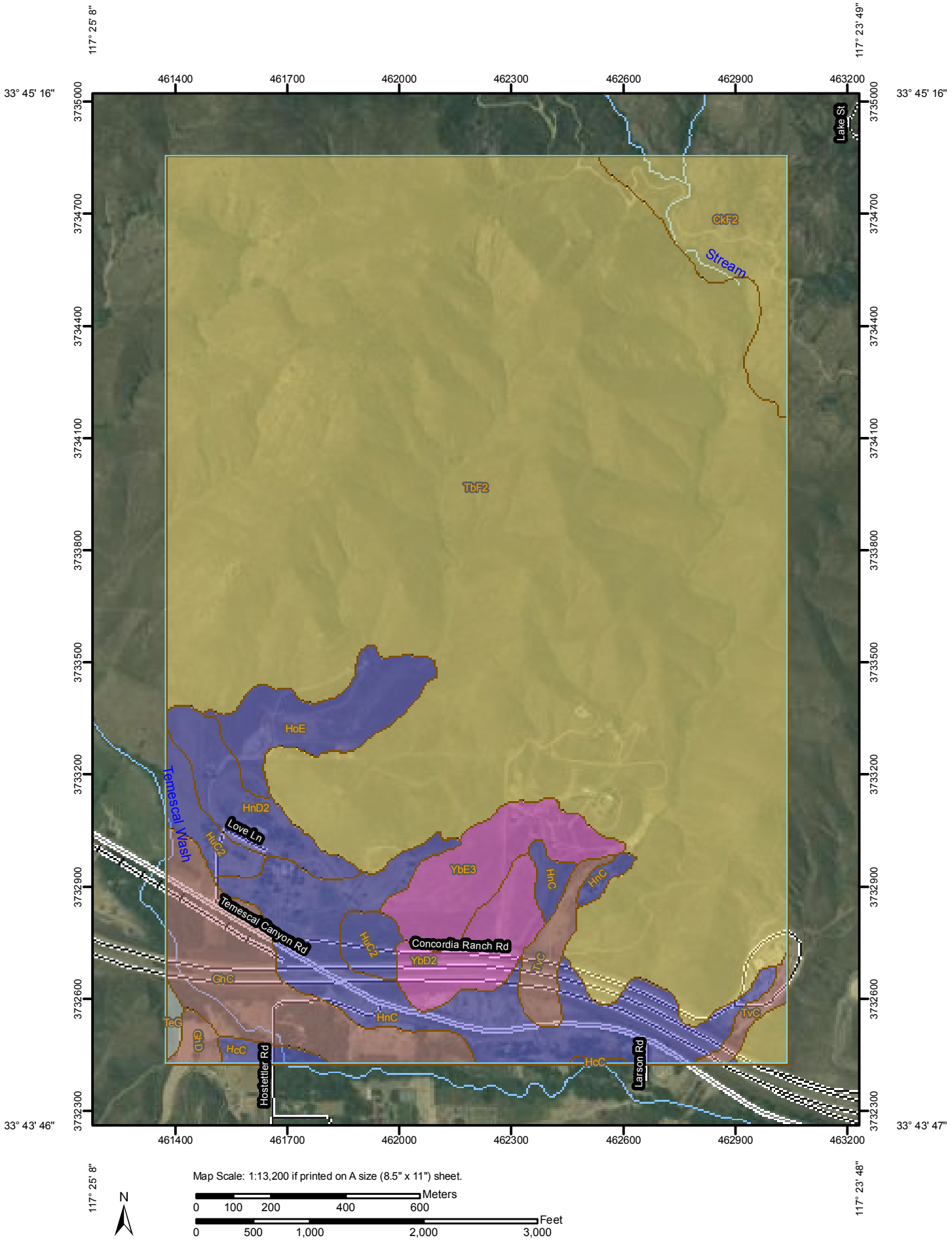
EXHIBIT E: HYDROLOGIC SOILS MAP


117° 25' 8"
117° 23' 49"
33° 45' 16"
33° 43' 46"
33° 43' 47"
117° 23' 48"
461400
461700
462000
462300
462600
462900
463200
3735000
3734700
3734400
3734100
3733800
3733500
3733200
3732900
3732600
3732300
Lake St
CkF2
Stream
TbF2
HoE
HnD2
HuC2
Love Ln
Temescal Wash
Temescal Canyon Rd
YbE3
HnC
Concordia Ranch Rd
YbD2
TvC
GhC
TeG
GhD
HcC
Hostettler Rd
Larson Rd
Map Scale: 1:13,200 if printed on A size (8.5" x 11") sheet.
N
Meters
0 100 200 400 600
Feet
0 500 1,000 2,000 3,000

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:13,200 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 5, Jan 3, 2008

Date(s) aerial images were photographed: 6/7/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

EXHIBIT F: EXISTING CONDITION LAND USE MAP

SCE ALBERHILL SUBSTATION

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

EXISTING CONDITION LANDUSE MAP

LEGEND:

OPEN SPACE

HORSE FARM/GRADED

RURAL RESIDENTIAL

N

GRAPHIC SCALE

300' 0 150' 300' 600'

1" = 300'

JLC Engineering & Consulting, Inc.

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EXHIBIT "F"

SCE ALBERHILL

EXISTING CONDITION
LAND USE MAP

Drawing Name: O:\163.01.10\Tentative_Tract_Map\Engineering\Hydrology_Plan\Exhibits\Existing Landuse Map.dwg
Last Opened: Aug 23, 2011 – 10:42am by jcarver

EXHIBIT G: RAINFALL MAPS

2 YEAR, 1 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 0.55

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

Notes:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973

RCFC & WCD

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

2-YEAR — 1-HOUR PRECIPITATION

APPROVED CHIEF ENGINEER R.C.F.C. NO. 8882
DATE

DRAWN BY R.R.S.

PLATE D-4.3

SHEET NO

DR NO

REVISED

2 YEAR, 3 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 1.00

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

Isohyetals based on NOAA Atlas
Volume XI - California, 1973

RCFC & WCD

RIVERSIDE COUNTY FLOOD CON
AND
WATER CONSERVATION DISTRI

2-YEAR — 3-HOUR
PRECIPITATION

DRAWN BY

2 YEAR, 6 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 1.40

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

RIVERSIDE COUNTY FLOOD CONT
AND
WATER CONSERVATION DISTRIC

2-YEAR — 6-HOUR
PRECIPITATION

APPROVED: _____ DATE _____
CHIEF ENGINEER R.C.F.C. & W.C.D.

DRAWN BY:

SHEET

2 YEAR, 24 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 2.50

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

NOTES:
1. Isohyetals from NOAA Atlas 2
Volume XI - California, 1973.

RCFC & WCD

RIVERSIDE COUNTY FLOOD CON
AND
WATER CONSERVATION DISTR

2-YEAR — 24-HOU
PRECIPITATION

DRAWN BY: R.A.S.

APPROVED

100 YEAR, 1 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 1.45

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

Notes:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973.

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100-YEAR — 1-HOUR PRECIPITATION

DRAWN BY: C.A.L. SHEET NO

100 YEAR, 3 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 2.50

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

NOTES:
Isohyetals based on NOAA Atlas 2
Volume XI - California, 1973

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

100-YEAR — 3-HOUR
PRECIPITATION

APPROVED

DRAWN BY

100 YEAR, 6 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 3.50

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

Isohyetals from NOAA Atlas 2, Volume XI - California, 1973

RCFC & WCD

Hydrology Manual

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100-YEAR — 6-HOUR PRECIPITATION

DRAWN BY R.A.L.

100 YEAR, 24 HOUR

ALBERHILL SUBSTATION
RAINFALL VALUE = 6.50

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

NOTES:
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.

RCFC & WCD

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100-YEAR — 24-HOUR PRECIPITATION

DRAWN BY

APPROVED CHIEF ENGINEER R.C.E. NO. 8885

EXHIBIT H: SLOPE OF INTENSITY DURATION CURVE

SLOPE INTENSITY CURVE

ALBERHILL SUBSTATION
SLOPE = 0.45

JLC Engineering & Consulting, Inc.

40040 COLISEUM WAY
MURRIETA, CA 92562
PH. 951.304.9552 FAX 951.304.3568

Notes:
1. Slope of Intensity-Duration Curve based on statistical analysis of automatic recording rain gage records

RCFC & WCD

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SLOPE OF INTENSITY DURATION CURVE

APPROVED | DRAWN BY R.L.S. | SHEET NO

EXHIBIT I: FIELD RECONNAISSANCE MAP

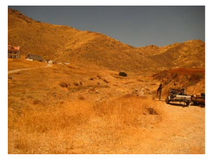
SCE ALBERHILL SUBSTATION

COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FIELD RECONAISSANCE MAP

#1 - EXISTING ROAD AT SHEET FLOW AREA NORTH OF PROJECT FACING NORTH EAST

#2 - BARRICADES AND HILLSIDE FACING SOUTH WEST



#5 - MAJOR FLOW PATH NORTH OF PROJECT FACING NORTH EAST

#7 - LOCATION OF FLOWS SPLITTING AND SHEET FLOW CONDITION NORTH OF PROJECT FACING NORTH

#8 - BARRICADES AND HILLSIDE NORTH OF PROJECT FACING SOUTH

#11 - CHANNEL EROSION NORTH OF PROJECT AT BARRICADES AND HILLSIDE FACING SOUTH

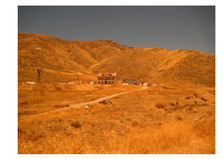
#13 - EXISTING ONSITE FLOW PATH CROSSING ONSITE DRIVEWAY FACING WEST

#14 - LOOKING UPSTREAM OF EXISTING ONSITE FLOW PATH CROSSING ONSITE DRIVEWAY FACING EAST

#17 - FLOW PATH TRIBUTARY TO EXISTING 36" CMP CROSSING CONCORDIA RANCH RD. FACING SOUTH

#3 - BARRICADES AND HILLSIDE FACING SOUTH WEST

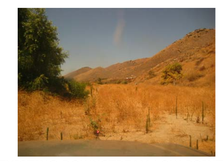
#4 - MAJOR FLOW PATH NORTH OF PROJECT FACING NORTH EAST



#6 - MAJOR FLOW PATH AND EXISTING HOMES NORTH OF PROJECT FACING NORTH

#9 - CHANNELIZATION CREATED BY HILLSIDE AND BARRICADES (5'W X 3'H APPROXIMATELY) FACING SOUTH

#10 - EXPOSED ROCK DUE TO EROSION AT BARRICADES AND HILLSIDE



#12 - EXISTING DOWNSTREAM LOW POINT WHERE WATER PONDS ON PROJECT SITE FACING NORTH WEST

#15 - DOWNSTREAM POINT FOR EXISTING 36" CMP CROSSING CONCORDIA RANCH RD. FACING NORTH WEST

#16 - EXISTING 36" CMP UPSTREAM CROSSING CONCORDIA RANCH RD. FACING NORTH

N

GRAPHIC SCALE

150' 0 75' 150' 300'

1" = 150'

EXHIBIT "I"

JLC Engineering & Consulting, Inc.

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SCE ALBERHILL

FIELD RECONAISSANCE MAP

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-001

To: ENERGY DIVISION
Prepared by: Jeff Miller
Title: Project Manager, TPD
Dated: 10/28/2009

Question 10: (1.10)

Project Description
Page 3-21

Page 3-21 states that environmental review would be deferred for evaluation of marshalling yards and material staging yards that would be used for the project. Adequate CEQA analysis of the significant environmental effects of the project requires the lead agency to consider the whole of an action, not simply its constituent parts. Provide a complete description of the marshalling yards and material staging yards that would be used for the project.

Response to Question 10:

As described in section 3.2.1.3 on page 3-21 of the Alberhill PEA, the primary marshalling yard and staging area will be the Alberhill Substation site. Additional marshalling and material staging yards will be located as needed at the existing substation sites: Valley , Skylark, Newcomb, Fogarty, Ivyglen. An additional staging area has been identified as approximately 0.75 miles north of Big Canyon Drive within the existing Valley-Serrano transmission line right of way. This site is located approximately one-quarter mile from the Proposed Project 500 kV segments and is approximately 0.17 acres unpaved on currently disturbed land (it is part of an existing access road). See the location in the attached map below.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/13/2012

Question 12.9.1.a:

There are discrepancies between the distances to receptors assumed in the Localized Significance Threshold (LST) analysis presented in the worksheets provided in response to Data Request 12.9, and the distances to the closest residential structures identified in proximity to the proposed Alberhill Substation site and 500-kV transmission line routes identified by E & E's GIS department. Provide the sources used to determine the distances to the closest receptors listed in Table 5 of the LST Analysis Worksheet included with Data Response 12.9.

Response to Question 12.9.1.a:

Google Earth was used to identify the distances to the closest receptors to the substation site and tower locations.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/13/2012

Question 12.9.1.b:

Provide figures that indicate the location of the receptors identified in Table 5 of the LST Analysis Worksheet at 93, 270, and 420 meters from components of the proposed project.

Response to Question 12.9.1.b:

The receptors used in the LST analysis for the substation and 500 kV transmission line are shown in the attached figure. Page 1 of the figure includes the residential receptor at 420 meters and the commercial receptor at 270 meters from the substation. Page 2 of the figure shows the residential receptor at 93 meters from the transmission tower.

1 attachment

Alberhill DR 9.6 Fig 1.pdf

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Wendy Worthy
Title: Biologist
Dated: 01/13/2012

Question 14.5:

Jurisdictional delineation reports were completed for SCE in 2010 and 2011 for the proposed Alberhill Substation site and 500-kV transmission lines. The reports identified a drainage that may be subject to United States Army Corps of Engineer jurisdiction. The drainage, identified as Aquatic Feature No. 1 on the attached figure, is a natural, unnamed tributary to Temescal Creek. Temescal Creek flows into the Santa Ana River, which flows into the Pacific Ocean. Aquatic Feature No. 1 has clearly defined bed and bank and ordinary high water marks. Due to the presence of bed and bank, it may also be subject to CDFG jurisdiction.

An access road proposed to extend to 500-kV Tower SA5 (see attached figure) would cross Aquatic Feature No. 1. We would like SCE to consider the feasibility of an alternative that would avoid crossing the aquatic feature. For example, it may be possible to reach 500-kV Tower SA5 by extending the access road from 500-kV Tower SA4.

Response to Question 14.5:

SCE evaluated ways in which impacts to regulated waters resulting from the Alberhill 500 kV access road could be reduced or avoided. Included in this evaluation was an alternative 500 kV access road crossing from SA3 (CPUC SA4) to SA4 (CPUC SA5), referred to as Alternative 1. Another alternative, Alternative 2, involved an existing old path above and parallel to the drainage. Refer to attached graphic (Figure 1).

SCE Environmental and Engineering staff along with wetland permitting consultants visited the two access road alternatives to determine if they would be viable alternatives to the Proposed Alternative, thus reducing the permit process for the Alberhill Project. The Alternative 1 access road would require crossing a jurisdictional drainage and would require a culvert similar to the one proposed for installation on the Proposed Alternative. The terrain surrounding Alternative 1 is steeper than the Proposed Alternative and it is likely that this alternative would involve a greater extent of earthwork and impacts higher than those resulting from the Proposed Alternative.

The Alternative 2 access has an existing dilapidated crossing, however, upon visiting it in the field, it was determined that for it to function safely, it would require that an entirely new crossing be constructed, and that it may actually require even more grading and installation of additional culverts due the presence of multiple smaller flows into the larger jurisdictional

drainage. As such, Alternative 2 appears to involve greater impacts to jurisdictional features, as well as upland habitat, than the Proposed Alternative.

Based on the high-level analysis in the field, it was determined that both Alternative 1 and 2 access roads would result in impacts to jurisdictional waters and would require permits from all three regulatory agencies (USACE, CDFG, RWQCB). On Dec 1, 2011, SCE Environmental staff took Jim Mace (USACE) in the field and showed him both the proposed crossing and the alternative crossing areas. Both areas were indicated to be USACE-jurisdictional. Impacts resulting from the Alternatives appear to be the same or greater, and because of the steepness of the terrain and the presence of multiple flows into the jurisdictional drainage, these alternative crossings would require a greater volume of earthwork and more culvert work. At this point, these Alternatives were dropped from further consideration because they resulted in the same level of permitting, the same or more extent of impacts, and would likely be more expensive in terms of design and volume of earth-moving.

Note that the 2009 and 2010 Jurisdictional delineations do not show these Alternatives because these areas were not included in the Alberhill Project's original delineation study area and a full Alternatives Analysis is not required for a Nationwide Permit #12 request. However, the regulated waters permit applications will demonstrate that avoidance and minimization of all waters, including the high-level field analysis of two Alternatives, was considered to the extent feasible.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-016

To: ENERGY DIVISION
Prepared by: Ilya Glinsky
Title: Project Manager
Dated: 01/13/2012

Question 7.38.1.e:

Would one or more lanes of a public roadway be closed, and if so, for how long?

Response to Question 7.38.1.e:

There are three roads that are used by the public that will be in the vicinity of construction activities associated with the reroute of the EVMWD agricultural water pipeline. These roads are Concordia Ranch Road, Temescal Canyon Road, and Love Lane.

Discussion of Concordia Ranch Road: The rerouted EVMWD agricultural water pipeline must cross Concordia Ranch Road near it's intersection with Temescal Canyon Road. This scope of work is expected to take approximately two calendar weeks to complete. During daylight working hours, Construction management intends to keep one lane open to enable the public to have ingress and egress from Concordia Ranch Road during the day. At night, Construction management intends to enable unrestricted ingress and egress with both lanes opened fully. Daily lane closures will be applied to one traffic direction until related construction activities are completed. Crews will then switch to the opposite side of the road and apply daily lane closures to the the other traffic direction for the balance of the scope of work.

Discussion of Temescal Canyon Road: The rerouted EVMWD agricultural water pipeline will not cross Temescal Canyon Road but instead, will run parallel to it. As such, it is not anticipated by Construction management that closures of either lanes of Temescal Canyon road shall be necessary for the installation of the EVMWD agricultural water pipeline.

Discussion of Love Lane: Construction management expects that work shall be staged such that public ingress and egress on Love Lane is not expected to be affected by lane closures. In the vicinity where the reroute of the EVMWD agricultural water pipeline is expected to cross Love Lane, Love Lane will be entirely relocated to the west. As such, Construction management shall be able to complete trenching activities on the proposed new crossing of Love Lane prior to redirection of traffic to that new route. This will keep the old route open for the duration of the construction.

Construction management shall be required to obtain construction permits from local agencies. It may be possible that the conditions of the permits place unanticipated conditions upon the plans that construction management expects to implement. As such, it is possible that the

closure summary as detailed may change.

During construction, it is possible that unforeseen subsurface obstructions or conditions may arise that may also affect the closure summary as detailed. As such, it is possible that the closure summary as detailed may change.

Construction management shall be in full compliance with applicable traffic control procedures at all times.

In all cases, it may be possible that single or bidirectional lane closures will be required for very short periods of time in order to reposition equipment and/or personnel for safe construction.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-016

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/13/2012

Question 7.73.b:

Identify the closest sensitive receptor to the proposed substation site. Indicate the distance between the closest sensitive receptor and substation perimeter wall as well as the type of receptor. Under the Riverside County General Plan, the following are considered sensitive receptors: residential uses, schools, hospitals, rest homes, long term care facilities, mental care facilities, libraries, passive recreation uses, and places of worship.

Response to Question 7.73.b:

The closest sensitive receptor to the proposed substation site is a residence, located approximately 420 meters from the substation perimeter wall.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-016

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/13/2012

Question 7.73.c:

Conduct a noise survey for the proposed substation site containing:

1. A set of daytime and nighttime background ambient noise measurements from the perimeter wall of the substation site and the closest sensitive receptor.

2. Predict substation operating noise contributions to background ambient noise levels at the substation perimeter wall and closest sensitive receptor.
   - Base predicted noise levels on the model of transformers to be installed and location of the transformers in the substation footprint.
   - Provide predicted noise levels with and without transformer cooling fans running.
   - If the transformer model and proposed layout of the substation have not yet been determined, provide the maximum noise contribution that two transformers with the proposed rating (560 MVA) would produce under the expected operational conditions (transformers operating simultaneously, with and without cooling fans).

Response to Question 7.73.c:

Please see the attached noise study.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-012

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 05/18/2011

Question 12.09:

Provide revised air quality calculations (Appendix H) consistent with revised PEA.

Response to Question 12.09:

Since the April 2011 Submittal, it has been determined that 80,000 cubic yards of imported soil would be needed during construction of the Alberhill Substation. SCE is in the process of selecting one of the two following options to obtain the needed soil: a) import 80,000 cubic yards of soil from a nearby quarry, or; b) grade approximately 5.2 acres of the area just south west of the proposed substation. The calculations of criteria pollutant and greenhouse gas emissions during construction of the Alberhill System Project have been revised using updated construction information; both scenarios would increase project emissions. The emission estimation calculation spreadsheets are attached.

Revised estimations of peak daily criteria pollutant emissions during construction are as follows:

	Import 80,000 CY	**5.2 Acre Borrow Site**
VOC	82.26 lb/day	85.58 lb/day
CO	338.42 lb/day	325.33 lb/day
NOx	626.41 lb/day	639.36 lb/day
SOx	8.73 lb/day	8.73 lb/day
PM10	410.16 lb/day	423.17 lb/day
PM2.5	62.39 lb/day	68.86 lb/day

The peak daily VOC emissions increased slightly from 78.70 lb/day, NOx emissions increased from 557.39 lb/day, SOx emissions slightly increase from 8.64 lb/day, CO emissions increased slightly from 332.7 lb/day, PM10 emissions increased slightly from 400.5 lb/day, and PM2.5 emissions increased slightly from 60.0 lb/day.

Peak daily VOC, NOx, PM10 and PM2.5 emissions are estimated to exceed the respective South Coast Air Quality Management District (SCAQMD) daily emission thresholds.

The localized significance thresholds (LST) analyses are the same as the previous analyses, and

no significant localized adverse impacts are expected to occur during construction.

Operational criteria pollutant emissions have not changed.

Total greenhouse gas emissions during construction increased slightly from 3,673 metric tons carbon dioxide equivalent (MT CO2e) to 3,944 (CO2e) for the import and 3,938 (CO2e) for the borrow site. Construction greenhouse gas emissions amortized over 30 years are 132 MT CO2e per year for each scenario. Annual operational greenhouse gas emissions have not changed and are estimated to be 3,430 MT CO2e per year. The estimated sum of amortized construction and annual operational greenhouse gas emissions is 3,553 MT CO2e per year, which is below the SCAQMD greenhouse gas significance threshold of 10,000 MT CO2e per year.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-013

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 07/20/2011

Question 12.10.1 Amended:

Indicate on maps each location where trenching or boring would occur outside the footprint of the Alberhill (proposed), Newcomb, and Skylark substations for telecommunications installations, and indicate the approximate length, width, and depth of trenching or boring.

Amendment:
Since the response to Data Request 12.10.1, SCE has identified new areas where trenching or boring would occur outside the footprint of the Alberhill, Newcomb, and Skylark substations for telecommunications installations. Please see the attachment for the revised trenching locations for telecommunications.

Rev. Updated Alberhill, Telecomm Trenching Locations.pdf

Response to Question 12.10.1 Amended:

Since the response to Data Request 12.10.1, SCE has identified new areas where trenching or boring would occur outside the footprint of the Alberhill, Newcomb, and Skylark substations for telecommunications installations. Please see the attachment for the revised trenching locations for telecommunications.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-014

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 08/22/2011

Question 14.2:

Review of the proposed Lee Lake GIS substation described in the Proponent's Environmental Assessment (PEA) for the Talega-Escondido/Valley-Serrano 500-kV Interconnect (TE/VS) Project is seen as capable of meeting the objectives of the proposed Alberhill System Project.

Describe the extent to which SCE currently uses, stocks, and maintains similar GIS equipment at the 500-kV and 115-kV levels as well as the impact that the addition of a GIS substation at Lee Lake may have on existing SCE systems. The latest TE/VS PEA can be downloaded from: http://www.cpuc.ca.gov/Environment/info/aspen/nevadahydro/talega_escondido_valley_serrano.htm

 The structures for the pending Valley–Ivyglen 115-kV subtransmission line will have an available second circuit from the proposed Alberhill Substation site southeast toward Elsinore Substation. How far north of the proposed Alberhill Substation site (toward Ivyglen Substation) will the pending Valley–Ivyglen 115-kV subtransmission line have an available second circuit?

 In comparison to the proposed Alberhill System Project 115-kV improvements, describe the changes, additions, and improvements to existing 115-kV systems that would be required to make output from a GIS substation at Lee Lake site useful in meeting projected demand in a reliable and flexible mann

Response to Question 14.2:

The equipment that SCE currently uses, stocks, and maintains for its gas-insulated switchyards (GIS) is very limited and site-specific. Typically this equipment is not interchangeable between switchyards; examples are interrupters and current transformers. There might be small, secondary equipment that can be in stock, such as rotor switches for the local control cabinets, but even so, this equipment is specific to the manufacturer of the GIS. The latest TE/VS PEA in the referenced web site implies that the GIS component of the proposed substation at the Lee Lake site would be provided by Siemens. SCE does not operate any Siemens GIS equipment.

The insulation media (e.g., gas-insulated or air-insulated) of a substation's switchyard would not have any significant impact on existing SCE systems.

The structures for the segment of the Valley-Ivyglen 115 kV Line project between the proposed

Alberhill Substation and the existing Ivyglen Substation are planned to only accommodate a single 115 kV circuit. The remaining segments will use structures capable of accommodating two 115 kV circuits.

The SCE 115 kV system changes, additions, and improvements (those considered outside of the substation) for Nevada Hydro's substation located at the Lee Lake site would include the following beyond that which is described in SCE's PEA for the Alberhill System Project.

The Lee Lake site is approximately 2 miles northwest of SCE's proposed Alberhill System Project site, thus SCE's proposed Alberhill-Skylark 115 kV line would be approximately two miles greater in length. The Alberhill-Skylark 115 kV line is planned to be installed as the second line on the double-circuit capable poles that would be installed as part of the Valley-Ivyglen 115 kV Line project. It is expected that needed changes, additions, and improvements (based on the CPUC's proposal that the Alberhill System Project does not occur and instead the 500/115 kV facilities would be located at the Lee Lake site), would be limited to extending what would have been Alberhill-Skylark 115 kV line the additional two miles from the Alberhill site to the Lee Lake site. As the Valley-Ivyglen 115 kV Line project includes installation of double-circuit capable poles only up to the Alberhill site, the two-mile segment of pole line between the Lee Lake site and the Alberhill site would need to be upgraded to accommodate the second circuit.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.g:

Update Table 3.1 (Substation Ground Surface Improvement Materials and Volumes) of the PEA to include the cut and fill data provided in response to Data Request 12.9.

Response to Question 12.9.2.g:

See the file entitled "Revised sections 3.1.1.10 and 3.1.1.11.docx" which is attached to Data Request 12.9.2.h and includes revised Table 3.1. Please note that the revised table includes not only updates to the cut and fill data, but also updates to its other entries.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.h:

Update Sections 3.1.1.10 (Substation Drainage) and 3.1.1.11 (Substation Site Ground Surface Improvements) of the PEA to include the cut and fill data provided in response to Data Request 12.9.

Response to Question 12.9.2.h:

See attached file entitled "Revised sections 3.1.1.11 and 3.1.1.11.docx" which provides the requested updates.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/13/2012

Question 12.9.3:

Provide new visual simulations showing the 5.2-acre borrow area after the proposed removal of 120,000 cubic yards of soil. See attached figure for reference to previous simulation showing the completed Alberhill Substation as viewed from Interstate 15, an Eligible State Scenic Highway.

Response to Question 12.9.3:

SCE is in the process of developing a visual simulation that will show the borrow area. SCE expects to provide the additional visual simulation by March 9, 2012.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.a:

Explain why the import soil is required.

Response to Question 12.9.2.a:

Upon further engineering of the proposed Alberhill Substation Site, SCE recognized the need for import soil. The import soil is required in order to maintain positive gravity flow for drainage purposes and to provide proper cover for underground pipes.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.b:

Provide the geotech report cited on Sheet C1.9 (Rough Grading Plan Borrow/Disposal Plan). Sheet C1.9 was included with SCE's response to Data Request 12.9.
- In addition, provide the results of all soil surveys completed for the proposed Alberhill Substation site and 5.2-acre borrow area. A soil survey would be required to determine to what extent stormwater would infiltrate soil or flow across the surface.

Response to Question 12.9.2.b:

The geotechnical information cited on sheet C1-9 is grading recommendations that were prepared by SCE's Geotechnical department and provided to the Civil department in a letter format via an internal email. SCE has not produced a written "Geotech report" for the Alberhill project. For clarification purposes Sheet C1-9 has been revised by replacing the term "Geotech report" with the term "Geotech recommendations" (see attached file entitled "Borrow Site Exhibit_20120216.pdf").

A geotechnical investigation of the borrow area is pending subject Commission's authorization to proceed with field activities for the project. When soil surveys are completed SCE will determine if and to what extent the borrow site can be used for the project. If the borrow site is selected as the source of additional soil, SCE will also determine to what extent stormwater would infiltrate soil or flow across the surface.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.c:

Sheet C1.9 lists several raw earthwork quantities. Confirm, that the following is correct:
- 91,000 cubic yards (cy) would be cut from the substation site, and 157,700 cy of fill would be required for the substation site. Hence, 66,700 cy of fill would be imported to the substation site. Due to subsidence, an additional 11,000 cy would be imported for a total of 77,700 cy of fill to the substation site.

Response to Question 12.9.2.c:

The earthwork quantities are confirmed based on the grading design and geotechnical recommendations at the time these quantities were estimated. The estimated earthwork quantities are subject to change if the grading design changes or new geotechnical information is provided that changes the geotechnical properties.

Please note that for the purpose of estimating the environmental impacts of the additional soil that is required and providing Data Response 12.9 SCE rounded the estimated 77,700 cubic yard volume of additional soil to 80,000 cubic yards (see also response to Data Request 12.9.2.d).

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.d:

Explain why Data Response 12.9 indicates that if the import option is chosen rather than use of the 5.2-acre borrow area, 80,000 cy of soil would be imported from a nearby quarry, but Sheet C1.9 and Sheet 1 of 2 (Borrow Site Exhibit) indicate that 120,000 cy would be excavated from the borrow area. If the 5.2-acre borrow area is accessed to obtain the fill, how would the excess 40,000 cy of soil be used?

Response to Question 12.9.2.d:

The Alberhill site needs approximately 77,700 cubic yards of additional soil. This soil will be obtained from either a nearby quarry or from the "borrow" site adjacent to the 34 acre substation site.

For the purpose of estimating the environmental impacts of each option and providing Data Response 12.9 SCE rounded the estimated 77,700 cubic yard volume of additional soil to 80,000 cubic yards.

The design of the borrow site indicates that the borrow site can provide approximately 120,000 cy of soil, subject to confirmation of the underlying assumptions by the pending geotechnical investigation. Not all of the 120,000 cy of soil that the borrow site can produce will be used by the project. The project will use approximately 77,700 cy, (or possibly 80,000 cy.) of soil.

In case the borrow site is selected as the source of the additional soil, if during excavation SCE discovers that the borrow site is not suitable to provide the entire volume of soil that is required for the project, SCE will have to import the balance of the soil from other sources.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.e:

SCE indicated in response to Data Request 1.22 (labeled SCE Question 22) that a detention basin would be constructed within the proposed substation walls to capture and retain surface flow within the enclosed facility. Surface flow would be gathered by gravity flow into concrete swales and directed to the basin. Percolation would dissipate water captured by the basin to reduce excess discharge from the proposed substation site.
- Indicate where the detention basin would be located on Sheet C1.9 or a similar diagram.
- Discuss the potential for runoff to be retained by areas excavated within the 5.2-acre borrow area.

Response to Question 12.9.2.e:

In response to Data Request 1.22 in October 2009 SCE indicated: "*The preliminary design concept also proposes a detention basin within the substation confines to capture and retain surface flow within the enclosed facility"* (emphasis added). At that time there were numerous design uncertainties and for this reason SCE refrained from showing the detention basin on Figure 3.1 of the PEA.

The detention basin is proposed outside the substation wall (east of Love Lane and west of the perimeter wall) as opposed to an area within the substation wall. This detention basin is designed to detain (catch and release) storm water and not to retain storm water. The purpose of this design is to closely meet the undeveloped storm water runoff conditions. The proposed detention area is shown in Exhibit D of the hydrology and hydraulic study (see attachment in response to data request 12.9.2.i). Please note that although the hydrology and hydraulic study is entitled "final" the design concepts of the study report are preliminary, subject to the findings of pending geotechnical investigations.

If the option of the borrow site is selected as the source of the additional soil, the grading and development of the borrow site will be integrated into the overall grading and runoff management of the project. The use of the borrow site has the potential to increase the runoff when the area is disturbed and graded. Therefore, a detention basin will be incorporated into the final design. (see attachment in response to data request 12.9.2.i). However, if the pending geotechnical investigation of the area indicates the possibility of shallow ground water, the potential for runoff to be retained by areas excavated within the 5.2-acre borrow area is decreased. It is imperative to collect additional soil data from the borrow area before a final

decision is made.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.f:

SCE indicated in response to Data Request 1.22 (labeled SCE Question 22) that surface runoff from the adjoining hills would be captured by a channel paralleling the substation's north wall. A surface flow energy dissipation field would be included to reduce the velocity of water captured by the external channel. Surface runoff from the south side of the substation site would be collected in a buried pipe and discharged from the property at the same location as would be discharged under conditions existing prior to construction of the proposed substation.
- Indicate where the external channel, buried pipe, and other substation drainage components would be located on Sheet C1.9 or a similar diagram.

Response to Question 12.9.2.f:

See the file entitled "Final Hydro Report-011712.pdf" which is attached to Data Request 12.9.2.i. The file provides the hydrology and hydraulics study that has been prepared to support the proposed drainage design for Alberhill substation and the 5.2-acre borrow area. The requested features are shown in Exhibit D of the report.

Please note that the requested futures are shown on a conceptual basis, subject to the findings of pending geotechnical investigation. Final development of the site may be substantially different from what is shown on Exhibit D of the report.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-015

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 01/13/2012

Question 12.9.2.i:

A water budget and/or analysis of stormwater runoff would be required for stormwater management and as a basis for design of the proposed detention basin, channel, underground pipes, and other drainage features. Provide the water budget or data used for stormwater runoff analyses for the proposed Alberhill Substation site and 5.2- acre borrow area.

Response to Question 12.9.2.i:

See attached file entitled "Final Hydro Report-011712.pdf" which provides the water budget and data used for stormwater runoff analyses for the proposed Alberhill substation and the 5.2-acre borrow area.

Please note that although the hydrology and hydraulic study is entitled "final" the design concepts of the study report are preliminary, subject to the findings of pending geotechnical investigations.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-016

To: ENERGY DIVISION
Prepared by: Allen Wilridge
Title: Planner 3/Estimator
Dated: 01/13/2012

Question 12.11:

a. Provide maps at a scale of 1 inch:400 feet or more detailed that show the locations where poles currently supporting each of the 115-kV line segments would be removed. Indicate (e.g., by using a key) what type of pole currently exists in each location. Number the poles on the map. Engineering maps or AutoCAD files showing street names, pole numbers, pole heights, and types of poles may be adequate.

b. Provide a table for the 115-kV lines with rows that show pole/structure number and columns that specify the type of pole currently in place and the type of pole that the existing pole with be replaced with (e.g., LWS, TPS, H-frame).

c. Specify, on the same maps, where staging areas, laydown areas, other work areas around pole removal sites, and pulling/tensioning/splicing sites would be located for the 115-kV lines.

d. On the same maps, indicate where guard structures would be used for the 115-kV lines.

Response to Question 12.11:

a) SCE's response to this request will be provided when the final engineered maps are completed. SCE is not able to determine which poles will be replaced until engineering of the new poles is completed.
b) SCE is not able to respond to this request until final engineering is completed.
c) Please see SCE's amended data request 12.7 sent by email 2/6/2012 for laydown yard locations.
d) SCE is not able to respond to this request until final engineering is completed.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-018

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 02/29/2012

Question 7.73.2:

a) Withdrawn.
b) Identify the closest sensitive receptor to the proposed substation site. Indicate the distance between the closest sensitive receptor and substation perimeter wall as well as the type of receptor. Under the Riverside County General Plan, the following are considered sensitive receptors: residential uses, schools, hospitals, rest homes, long term care facilities, mental care facilities, libraries, passive recreation uses, and places of worship.
c) Conduct a noise survey for the proposed substation site containing:
    1. A set of daytime and nighttime background ambient noise measurements from the perimeter wall of the substation site and the closest sensitive receptor.
    2. Predict substation operating noise contributions to background ambient noise levels at the substation perimeter wall and closest sensitive receptor.
        - Base predicted noise levels on the model of transformers to be installed and location of the transformers in the substation footprint.
        - Provide predicted noise levels with and without transformer cooling fans running.
        - If the transformer model and proposed layout of the substation have not yet been determined, provide the maximum noise contribution that two transformers with the proposed rating (560 MVA) would produce under the expected operational conditions (transformers operating simultaneously, with and without cooling fans).

Provide a set of daytime and nighttime background ambient noise measurements at the closest sensitive receptor to the proposed substation perimeter wall at the proposed substation site as requested in Data Request 7.73.1.

Response to Question 7.73.2:

Please see the attached noise study.

1 attachment

Alberhill Substation_Noise Study_ 03-16-12_Rev1.pdf

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-019

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 03/12/2012

Question 01:

Q.14.1

The response to Data Request 12.1.1 indicates that a third transformer (as a spare) is estimated to be required at the proposed Alberhill Substation between 2024 and 2029. When is it estimated that electrical demand on the Alberhill System would exceed 1120 MVA, the third transformer would become load serving, and a fourth transformer would be installed as a spare?

Discuss planning considerations and the feasibility of constructing a substation for an ultimate build out of two transformers and a spare at the proposed Alberhill Substation site.

Response to Question 01:

Planning activities for near-term planning horizons (e.g., 10-year) generally result in forecasts that have a higher degree of certainty than those based on much longer planning horizons (e.g., 20 to 30 years). To provide for the uncertainties inherent in a long-term forecast, it is best to evaluate based on a range of projected growth in electrical demand. For the purposes of answering this Data Request, a range of growth was reviewed from 2.5% on the low-end to 4% on the high-end. While the Electrical Needs Area of the project has demonstrated growth rates that were much higher than this range, this range seems reasonable for this evaluation.

Please reference SCE's previous response to Data Request 12.1.1 where it is explained that it is expected that in the range of 2024-2029, additional electrical demand (through the transfer of additional 115/12 kV distribution substations) would need to be transferred from the Valley South 115 kV System to the Alberhill 115 kV System. This additional electrical demand placed on the Alberhill 115 kV System, as well as annual growth, is what drives the dates below for when the loading would be expected to exceed 1,120 MVA.

- Beginning in 2015 (the planned Operating Date of the Alberhill System Project) and using 2.5% as the growth rate for the region, it is projected that the electrical demand of the Alberhill System would exceed 1,120 MVA by approximately the year 2050.

- Beginning in 2015 (the planned Operating Date of the Alberhill System Project) and using 4.0% as the growth rate for the region, it is projected that the electrical demand of the Alberhill System would exceed 1,120 MVA by approximately the year 2037.

At the time that the electrical demands of the Alberhill System would exceed 1,120 MVA, it would be necessary to place in-service a third load-serving transformer and to have a fourth transformer installed as a spare.

A modified Alberhill Substation, that would accommodate only two load-serving transformers and a spare transformer, could potentially result in a reduction in the required footprint of the substation of approximately 3%. This would primarily come from the expected reduction in the width of the substation that could result from 1 or 2 fewer 115 kV air-insulated switchrack positions. The width required for the transformers is not the determining factor of the size of the substation. For example, a substation with four transformers (three load-serving and one spare) does not require 33% more property than that of a substation with only three transformers (two load-serving and one spare).

It is significant to note that with the potential 3% reduction in the required footprint of the substation would be the corresponding 33% reduction in the ultimate load-serving capacity of the substation. As described above, there are many uncertainties in long-term forecasting. As an example, in the mid-1980s, it was projected that San Jacinto Valley region would approach approximately 1,000 MVA at ultimate build-out. SCE's Valley Substation was expected to be adequate to serve all of this electrical demand. In 2011, the peak electrical demand of the same area (which is now served by a Valley North 115 kV and Valley South 115 kV System) was in excess of 1,600 MVA.

It is not expected that an approximate 3% reduction in the required substation footprint would result in any substantial reduction in project costs associated with land acquisition nor initial construction costs of electrical facilities. This is due to the fact that it is highly unlikely that the property acquired would differ. In general, available properties of the minimum size required for the substation are not available in discrete incremental sizes allowing for acquisition of the exact size required. In the process of site selection, the available properties must meet certain criteria, such as minimum size and shape among others, and often the site selected is a "best-fit" selection that meets most of the criteria. The resulting property selected may be larger than the minimum size required for the substation if that particular property was the best available to meet most of the criteria.

Under the proposal to design a reduced capacity substation (at ultimate build-out), the initial project cost would likely not be any different than that of SCE's proposal. SCE proposes to construct only those facilities that are initially required. What SCE's proposal does provide however, that a reduced capacity substation does not, is that it would be capable of accommodating future capacity expansion should that become necessary. It is not expected that any need for future expansion in capacity would require additional substation expansion beyond which the site is already proposed to accommodate. In contrast, a reduced capacity substation would reach its capacity limitations earlier, thus necessitating the initiation of a future similar system project including a source substation and associated transmission and subtransmission line work.

When viewed from the perspective of project cost-to-capacity-provided ($/MVA of capacity)

and assuming that there would not be a significant cost reduction associated with the proposal for a reduced capacity substation, it is favorable to construct the SCE proposed project.

As mentioned above, because of the inherent uncertainty of long-term forecasting of the electrical needs of an area, and as illustrated by the example given that today's electrical demand requirements have significantly exceeded those that were projected 25 years ago, it is SCE's position that the Alberhill System Project as proposed is the best solution to address the immediate needs of the Electrical Needs Area as well as the long-term needs, while minimizing future new construction activities needed to accommodate growth in electrical demand.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-020

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: Regulatory Representative
Dated: 03/23/2012

Question 05:

Q.10.2.4

- Provide the results of USFS consultation for work to be completed at the Santiago Peak Communications site as part of the proposed project.

c. If the USFS requires surveys, the survey results may be requested as part of a subsequent data request. Visual simulations may also be requested.

Response to Question 05:

In an email dated March 19, 2012, Ashley Taylor of the Cleveland National Forest, stated that no new surveys were needed. See email below:

> Karen,
>
> No new NEPA, surveys, or permits are required for these changes. However, since the dish locations are changing, SCE must fly a 30-day Technical Data Form notice to all lease holders at Santiago Peak. This allows them the opportunity to comment on potential interference concerns. I've attached the Technical Data Form along with the address list for Santiago Peak.
>
> Thank you,
>
> *Ashley*
> Ashley Taylor
> Cleveland National Forest,
> Trabuco Ranger District
> 1147 E. Sixth St., Corona, CA 92879
> Voice (951) 736-1811 x3235 | Fax (951) 736-3002

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-020

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 03/23/2012

Question 01:

Q. 4.1.1

The CPUC finds that the proposed Alberhill Substation could be located outside the Substation Target Area but within the Electrical Needs Area (PEA Figure 1.1) and still reasonably satisfy most of the seven basic project objectives (PEA p. 1-13).

SCE's response to Data Request 4.1 states that an "Electrical Needs Area" is a subsection of a "System" or "Systems" that has been identified with electrical needs. SCE states that a "System" is a well-defined, already established portion of SCE's service territory. SCE further states that the proposed Alberhill System has a specific Electrical Needs Area. Therefore, the CPUC assumes that the Electrical Needs Area for the proposed project is a subset of and no larger than the proposed Alberhill 115-kV System service area.

Refine the Electrical Needs Area defined in PEA Figure 1.1 to be specific for the proposed Alberhill 115-kV System service area as defined in response to Data Requests 4.2 and 7.4. In addition, define the current Valley South 115-kV System service area (on PEA Figure 1.1 or similar), which the CPUC assumes is larger than the Electrical Needs Area to be served by the proposed Alberhill 115-kV System.

Response to Question 01:

As stated in SCE's response to Data Request 14.3 (submitted in January, 2012):

> "Good electrical system planning activities, to the extent possible, strive to locate an electrical source substation near the electrical demand. The approach is desirable because the benefits achieved include reduced losses, reduced voltage drop, and a higher likelihood of shorter length 115 kV lines in the future as they become necessary. SCE's proposed location for the Alberhill Substation site was chosen incorporating these design considerations. SCE's proposed substation location, as compared to the CPUC's proposed alternate location, is closer to the electrical demand being considered to be transferred to the new electrical system (satisfying the first two desired benefits listed) and also, as it is recognized that the most probable location for future growth in electrical demand to occur is along the Interstate 15 corridor, it also satisfies the third desired benefit."

While it may be possible that the site of the proposed Alberhill Substation could be located elsewhere within the Electrical Needs Area identified in SCE's Proponents Environmental Assessment (PEA), this would not result in the substation site that would provide the best solution to address the electrical needs of the area while also recognizing the importance of addressing other important concerns such as the environment, cost, and public impact. Looking only at one particular project objective (the addition of transmission substation transformer capacity to the area) independently and without consideration of the other project objectives, will generally result in an incomplete and inadequate siting analysis. To address the identified electrical system inadequacy, the siting process of the substation must also evaluate other considerations that include the availability of properties to meet the minimum requirements for the substation, proximity to the transmission source lines, proximity to the subtransmission lines, and the ability to reconfigure the existing system to transfer a sufficient number of distribution substations to the proposed new transmission substation.

The Alberhill System Project objectives include those which state that the project proposes to present the "best fit" solution for the meeting the current and future electrical needs of the area, increasing system operational flexibility and reliability, attempting to minimize environmental impacts, and to do the preceding in the most cost-effective manner. The achievement of these project objectives would generally include focused efforts to minimize new construction activities (new transmission sources lines and new subtransmission lines) and to maximize the use of existing electrical facilities.

An Electrical Needs Area (ENA) is defined as an area in which there is a need for a solution to solve an identified electrical system inadequacy of the existing facilities to serve the projected customer electrical demand. This identified inadequacy may be one of several different types depending on the level of the electrical system being evaluated. Typically, there are four levels for which electrical system planning is performed.

1. Distribution Substation
2. Subtransmission Source Lines
3. Transmission Substation
4. Transmission Source Lines

As an example, when analyzing the Distribution Substations of an area, it may be identified that the existing distribution substations that are in the area are not capable of providing for the projected capacity needs of the area. In this example, the ENA would be defined as that area served by those substations only and would generally include several specific distribution substations. As another example, when analyzing the Transmission Substations of an area, it may be identified that the existing transmission substation (serving as the source of all the downstream distribution substations) is not capable of providing the projected capacity needs of the area. In this example, the ENA would consist of the area served by the existing transmission substation.

The Alberhill System Project is representative of the latter. For this reason, SCE has indicated that the ENA of the Alberhill System Project is the entire area currently served by the Valley South 115 kV System. An Electrical Needs Area is not defined by a proposed project; rather the area in which the inadequacy is present defines it. A proposed project is a solution to an

inadequacy and most often is proposed to be located within the Electrical Needs Area.

In response to Data Request 4.1 part A, SCE states the following:

> "The specific Electrical Needs Area (ENA) for each of the identified projects are wholly contained within the existing Valley South 115 kV System. Each of the projects have a specific ENA.
>
> The Alberhill System Project (a project primarily to address the Valley South 500/115 kV transmission substation transformer overloads) ENA is wholly contained within the existing Valley South 115 kV System (i.e., the southern portion of the San Jacinto Region).
>
> The Fogarty Substation Project (a project to address the need for additional distribution substation capacity) ENA is the area currently served by the existing Elsinore and Dryden Substations and is wholly contained within the existing Valley South 115 kV System.
>
> The Valley-Ivyglen 115 kV Project (a project to address the need to meet criteria of two source lines into Ivyglen Substation and to address overload under N-1 conditions of the Valley-Elsinore-Ivyglen 115 kV line) ENA is the area currently served by the existing Ivyglen, Elsinore, Dryden, and Skylark Substations and is wholly contained within the existing Valley South 115 kV System.
>
> Since each project is being proposed to address separate and distinct electrical needs and the purpose of each project is independent of the others, the ENAs of each project are specific to each project."

As described, the proposed Alberhill System Project has an ENA that is wholly contained within the existing Valley South 115 kV System because it is one and the same. The Electrical Needs Areas of the other two projects are also wholly contained within the Valley South 115 kV System, however as those projects are proposed to solve different inadequacies of the electrical facilities in the area (namely Valley-Ivyglen 115 kV Line is a Subtransmission Source Line project and Fogarty Substation is a Distribution Substation project), their respective Electrical Needs Areas are not the entire Valley South 115 kV System, but rather a subset of it.

For these reasons, SCE chose the proposed site for the Alberhill Substation. The proposed site minimizes the construction of transmission and subtransmission lines and it does so in the most cost-effective manner while attempting to also minimize the environmental impacts.

The Alberhill System Project has an identified ENA, but there is no Alberhill System yet, therefore there is currently no Alberhill System ENA. Upon completion of the proposed Alberhill System Project, the Alberhill System service area would be created and would be defined by the area for which Alberhill Substation is the source transmission substation. This would be called the Alberhill System and at such a time in the future that the Alberhill System in determined to be inadequate to serve the electrical demand of its customers, an Alberhill System

ENA would be defined as part of a future project.

Based on the information above, SCE maintains that the ENA of the Alberhill System Project is the entire Valley South 115 kV System and is accurately presented in Figure 1.1 of the PEA.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-020

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 03/23/2012

Question 03:

Q.10.2.2

a. In PEA Appendix H, "Air Quality Calculations," do PEA Table 42 (Telecommunications Construction Tower Foundation), PEA Table 43 (Telecommunications Construction Tower Construction), PEA Table 44 (Telecommunications Construction Dish Installation), and PEA Table 45 (Telecommunications Construction Control Building) refer to construction at the proposed Alberhill Substation site or at the Santiago Peak communications site (DG 12.09 Tables 45, 46, 47, 48).

b. Does Table 45 refer to the proposed Alberhill Substation control building or a separate control building?

c. Does PEA Table 46 (Telecommunications Construction Overhead Communications Installation) refer to overhead telecommunications installations only on the proposed 115-kV line subtransmission segments? If Table 46 also refers to 500-kV line telecommunications installations, create a separate table for the 500-kV telecommunications work.

Response to Question 03:

a. Tables 45 through 48 (PEA Tables 42-45) refer to construction at the proposed Alberhill Substation. SCE has revised the air quality calculations to include the work at Santiago Peak; please see Table 51 of the attached revised air quality calculations.

b. Table 48 (PEA Table 45) refers to the proposed Alberhill Substation control building.

c. Yes, Table 49 (PEA Table 46) refers to overhead telecommunications installations along the 115-kV subtransmission line segments. SCE does not propose telecommunications installations along the 500 kV transmission line.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-020

To: ENERGY DIVISION
Prepared by: Johannes Bakker
Title: Telecommunications Engineer
Dated: 03/23/2012

Question 04:

Q.10.2.3

- A sheet of Santiago Peak communications tower installation options was provided by email on March 6, 2012 (see attached). Confirm that Option 0 (see attached) is currently proposed.

- To what extent is it expected that during final engineering Option 1 would be selected (see attached). Option 2? Option 3? Option 4?

- If Option 2 may be selected, confirm whether foundation work that would require excavation or grading would be required. Provide further information about the extent of excavation or grading that would be required, if any.

- If Options 3 or 4 may be selected, provide information about the extent of ground disturbance, construction methods, tower height, and SCE consultation with the U.S. Forest Service (USFS) regarding permitting processes and survey requirements. Indicate where permitting or survey requirements would differ between Options 3 and 4.

- If Option 4 may be selected, and work may not fit within the existing fence line, provide a map showing the Santiago Peak Communications Site boundary and indicate on the map where new tower components would be installed within the boundary and outside the boundary.

- The number of dish antennas to be installed or that could be installed appears to vary based on the option selected. The current proposal is to install only two new dishes on
- one existing communications tower at the Santiago Peak communications site. Explain why seven dishes are listed for Options 1, 2, and 3, ten dishes for Option 3 and 14 dishes for Option 4.

    b. How many new dishes would be installed as part of the proposed Alberhill System Project and how many new dishes could be installed as part of a future project after the construction of Options 0, 1, 2, 3, or 4?

Response to Question 04:

- Currently SCE proposes to implement option 0 – lowering two existing dishes and replacing cross members.

- Cumry Engineering, SCE's structural designer has prepared a final design for Option 0, and Global Tower Inc. has reviewed the design and provided a price quotation. Therefore the other options are no longer being considered.

- The extent of the work for Option 2 was not determined by a final design as the Option 0 design was sufficient. However, it is estimated that some kind of reinforcement or enlargement of the foundation would likely have been needed for this Option.

- The extent of the work for Options 3 and 4 was not determined by a final design as the Option 0 design was sufficient. However, it is estimated that for Option 3 an enlargement of the foundation would definitely have been needed. For Option 4 the existing foundation would have to be removed and a new large foundation would have to be constructed.

- As Option 0 proved to be sufficient SCE did not do a detailed design of the Option 4 foundation. SCE did not prepare any maps.

- The number of dishes column was included for the SCE management decision on what cost-benefit relationship there is in the various options. The number of antennas in this column for Option 0 should have read 8. The explanation is as follows: for the Alberhill Project, SCE would install 2 dishes in addition to the presently installed 5 dishes, for a total of 7 dishes. Option 0 would allow one more dish to be installed without overloading the tower. Options 1 and 2 would not allow any more dishes to be installed due to tower loading. Option 3 would allow 3 more dishes to be installed (for a total of 10). Option 4 would allow 7 more dishes to be installed (for a total of 14).

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-020

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 03/23/2012

Question 06:

Q.12.1.2

- For the Valley South 115-kV System, provide the recorded peak demand in megavolt amperes for 2011 and update the attached table through 2021.

Response to Question 06:

Please see the attachment titled "ValleySouth_load_table_2012-2021.pdf" which is has been updated to include the next 10 year planning cycle (2012-2021) and which includes the 2011 values (both recorded and adjusted) for SCE's Valley South 115 kV System.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-020

To: ENERGY DIVISION
Prepared by: Johannes Bakker
Title: Telecommunications Engineer
Dated: 03/23/2012

Question 02:

Q. 10.2.1

a. Confirm that the following statement is accurate and specify the length of service interruptions.

> a. Work on the Santiago Peak communications tower is expected to be completed on 12 days over the course of four weeks and would be scheduled depending on weather. Lowering of the two existing dish antennas and installation of the two new antennas would be performed during off-peak electrical demand periods because electrical service interruptions would occur. The interruptions in service could occur on each of the 12 days and last for up to [_____] hours each.

b. Describe the extent of electrical outages that would be expected and the approximate times of day and year that the outages are likeliest to occur.

c. Would work on the communications tower only occur during daylight hours?

Response to Question 02:

a. The statement is not accurate and there will be no electrical service interruptions. The Santiago Peak work plan for the telecommunications work is as follows: **Week 1**, communication circuit re-route work performed at Barre, Mira Loma and Valley substations, NOT at Santiago Peak, to temporarily move circuits away from the Santiago Peak site. The Project will NOT actually result in electrical outages, but circuit work has to be coordinated with SCE's Grid Control Center to allow outages on communications circuits. Some of the communications circuits are used for power line protection, and the Grid Control Center decides, based on electrical power flow and other conditions, if a reduce power line protection capability is acceptable. **Week 2, 3, 4, and 5**, drive up to the site in the morning, perform work on tower, drive back down at end of day. All as weather permits for a total of 12 days with allowance for windy or rainy days or road closures. **Week 6**, communication circuit re-route work performed at Barre, Mira Loma and Valley substations, NOT at Santiago Peak, to permanently restore circuits to the Santiago Peak site. The Project would coordinate with SCE's Grid Control Center to

allow us outages on communications circuits.

b. SCE's Project will not actually result in electrical outages, but circuit work has to be coordinated with SCE's Grid Control Center to allow outages on communications circuits. The timing would be chosen to be outside the summer time to have a better chance to be allowed communications circuit outages. SCE would also avoid the construction when there is enough rain to have road closures at Santiago Peak. For the actual tower work SCE will also have to avoid snow on the ground, rain, and wind.

c. SCE would not work on the tower at night.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Jeff Miller
Title: Project Manager
Dated: 03/30/2012

Question 01:

Q.5.4.1

a. PEA Appendix F specifies that one helicopter (e.g., a Hughes 500E) would be used for up to 6 hours per day for 2 days. Data Response 7.67 indicates that one or all of the 500-kV structures may require the use of helicopters in their construction. Other data responses indicate that only ground-based construction methods are likely to be used and that helicopters would not likely be required (e.g., Data Responses 5.4 and 9.4). For the purposes of the Alberhill System Project EIR, the CPUC assumes that helicopters would be used for the construction of some components of the proposed project. The concern is that helicopters may be used in proximity to residences, existing powerlines, or other structures, especially along the proposed 115-kV subtransmission line routes. If helicopters may be used for 115-kV subtransmission line construction, describe where, why, when, and how helicopters may be used. If helicopters may only be used for 500-kV transmission line construction or substation construction, please respond accordingly.

b. Data Response 12.17 provides a list of six staging areas, and Data Response 1.10 indicates that a staging area would be located near one of the proposed 500-kV towers near the Valley–Serrano 500-kV Transmission Line. The PEA indicates that the proposed Alberhill Substation site would be the primary staging area.

1. Specify which of these eight staging areas may be used for helicopter take offs and landings or for delivery by helicopter.
2. Specify which of the staging areas may be used for helicopter fueling.
3. Specify which of the staging areas would not be accessed by helicopter.

c. The PEA states that transmission and subtransmission lines are inspected at least once per year by driving and/or flying the line routes. The Serrano–Valley 500-kV Transmission Line is inspected by helicopter every other year. Describe why, where, and how helicopters may be used for other reasons or for other components of the proposed project during operations. If helicopters may only be used for maintenance of the 500-kV transmission lines and not the 115-kV subtransmission lines, respond accordingly.

d. In what ways could helicopters be used for installation of the telecommunications lines

along the proposed 500-kV and 115-kV routes.

Response to Question 01:

a: The use of helicopters for construction work associated with footings, assembly, and erection of the 115kV subtransmission line structures is not anticipated. If, during final engineering, it is determined that an access road cannot be constructed to 500kV tower site locations, a helicopter would be used in the construction of that structure. At this time, helicopters will be used for line stringing activities on all portions of the 500kV transmission line project and possibly on one segment of the 115kV subtransmission line project between Lost Road and Bundy Canyon Road.

b1: Helicopter take offs/landings would be conducted at the proposed Alberhill Substation site and the 500kV transmission primary and alternate material yard locations. During stringing activities, the helicopter will also need to take off/land adjacent to the pulling/tensioning locations along the transmission line routes.

b2: The proposed Alberhill Substation site and the 500kV transmission primary and alternate material yard locations may be used for helicopter refueling.

b3: The 115kV subtransmission line primary and alternate material yards would not be accessed by helicopter.

c: Helicopter usage for operations and maintenance activities would be limited to the 500kV transmission line. In the event of an emergency, or if a transmission line relays, helicopters may be used to patrol both 115kV and 500kV transmission lines to locate, identify, and access the situation in order to keep response/repair time to a minimum.

d: Telecommunication lines, as proposed, would be installed along the proposed 500kV and 115kV transmission line routes in the same manner as the conductor being installed. At this time, there are no telecommunication lines being installed along the proposed 500kV transmission line route.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Wendy Worthey
Title: Biologist
Dated: 03/30/2012

Question 02a:

Q. 12.7.3

a. The document titled, "Alberhill Substation Site, Recommended Best Management Practices, August 30, 2011," provided by email in response to Data Request 12.7.1 states that during demolition and weed abatement activities, the following best management practices "should" be implemented. Specific timeframes are listed among the biological BMPs that do not appear to apply. For example, biological monitoring was conducted even though weed abatement occurred after August 31st but prior to September 30th, and demolition occurred after September 30th even though one of the BMPs forbids this from occurring because of winter roosting bats.

    1. Specify which Best Management Practices (BMPs) identified in the document were implemented and which ones were not during September 2011 weed abatement and demolition activities and during December 2011 demolition activities.

    2. Specify which BMPs would be implemented for future demolition activities to be conducted if construction at the proposed substation site is approved.

Response to Question 02a:

The timeframe listed in the biological BMPs applies, in part, to nesting birds. The proposed timeframe provides only a general framework to use as guidance as biological conditions in the field change frequently. As such, biological monitoring was conducted to ensure there would be no impacts to any late nesting bird species. No nests were found; however, biological monitoring was not implemented only for nesting birds. SCE wanted to ensure that there were no impacts to other sensitive wildlife species potentially present at the proposed substation site. Biological monitors were allowed to stop work in the event of any non-compliance issues. There were no impacts to sensitive species or non-compliance issues.

With the exception of the Rock House, all buildings were demolished prior to September 30th. The Rock House demolition was delayed due to the SHPO concurrence pending at that time. Because of the delays and to comply with the County of Riverside Code Enforcement notices regarding safety, SCE considered proceeding with Rock House demolition only if winter

roosting bats were NOT occupying this structure. Before doing any demolition work, SCE consulted Stephanie Remington (qualified biologist with expertise in bat biology) about what could be done during this time period. She recommended a due diligence pre-demolition survey to inspect for bats. No bats were found in the Rock House. SCE provided the pre-demolition survey to the CPUC which also included the recommendation for additional biological monitoring to be implemented during the demo activities to *further* ensure that there would be no impacts to bats. A biological monitor was present during demolition of the Rock House and there were no biological issues resulting from the demolition.

1. Although "best" in terms of practice, the list of BMPs represents guidelines but with some degree of flexibility. All BMPs were implemented as appropriate and to the extent practicable with the ultimate goal being able to ensure that there would be no impacts to any sensitive plant or wildlife species. SCE was able to achieve this goal of "no biological impacts" as well as address County of Riverside Code Enforcement human safety concerns.

2. There are no further plans for demolition at the proposed substation site prior to commencement of substation construction. Upon commencement of construction, further demolition work will occur which will include, but not be limited to, removal of concrete slabs, landscaping elements (walls, foundations etc), below grade wiring, conduits etc.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: B. Paulson
Title: Real Property Project Manager
Dated: 03/30/2012

Question 02b:

Q. 12.7.3

b. Provide documentation that indicates weed abatement was ordered by the county agricultural commissioner or a state, county, or municipal fire department to support the statement that weed abatement activities conducted in September 2011 were exempt from SCAQMD Rule 403.

Response to Question 02b:

In June 2011, the County of Riverside Code Enforcement Office contacted SCE to inspect the proposed substation site. Due to the inability to demolish the structures, the property had been severely vandalized and was in disrepair. The property had been fenced, but due to its location, continued destruction and graffiti was a problem. The Code Enforcement Officer prepared the attached Notice of Violation for each structure and an SCE representative discussed the current status and restrictions of the proposed project. During this meeting the officer advised that the weed growth should be cleared away from the structures to prevent potential fire hazards. His violation for the structures included fire hazard, but he said the County Fire Department would be the Agency that could issue a fire hazard violation.

After this meeting with Code Enforcement, while SCE awaited approval for demolition of the structures, SCE contracted on-site security security services to protect the structures and attempt to prevent trespassing and additional vandalism. The on-site security officer advised SCE that they could not see the street from the structures they were patrolling, much less, across the entire site. They also advised SCE that this was a major safety factor and the weeds should be cleared around the areas they were requested to patrol.

Based on these two major issues, SCE consulted with the CPUC, and had the overgrown areas immediately around the structures cut. SCE had biologists perform surveys and were present on each day of the weed abatement. Weed abatement is exempt from the provisions of Rule 403 provided that mowing, cutting, or other similar process is used which maintains weed stubble at least three inches above the soil.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 03/30/2012

Question 02c:

Q. 12.7.3

c. Indicate whether an archaeological monitor was present during weed abatement and demolition activities conducted in September and December 2011. If a monitor was present, provide evidence.

Response to Question 02c:

Andrew Belcourt, archaeologist, gave a tailboard training for both the weed abatement and demolition activities. An archaeological monitor was not present during weed abatement or demolition activities because there was no ground disturbance.

SCE received a concurrence letter from the SHPO on November 10, 2011 for P-33-17572 (rock house). The SHPO concurred that this site is not significant under California Register of Historical Resources and this resource is not a historical resource. There was sufficient data collection during recording. P-33-17572 is an ineligible resource; therefore no further work was required.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-021

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 03/30/2012

Question 03:

Q.14.6

Estimate how many acres would be required to construct the proposed project with all open-air insulated switchgear.

Response to Question 03:

A substation with all open-air insulated switchgear would require a minimum parcel size of 40 acres of useable/flat land.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-022

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: Regulatory Representative
Dated: 04/04/2012

Question 01:

5.4.2 Helicopter

Provide the results of FAA consultation regarding helicopter use for the proposed project.

Response to Question 01:

Because the Alberhill construction may involve helicopter use in what is considered "congested air space," SCE may need to submit a "congested air plan" with the FAA, approximately 30 to 60 days before the proposed work will occur. If FAA consultation is required, SCE will provide the results of FAA consultation for helicopter use at that time. Prior to that time, any such FAA consultation would be premature.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-023

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 04/17/2012

Question 01:

Q.9.7.1

a. The CPUC estimates a leak rate of 0.5 percent per year from gas-insulated equipment. Confirm that all gas insulated equipment to be installed as part of the proposed project would meet or exceed this specification.

b. Describe SCE's reporting, monitoring, and reduction practices for SF6 emissions that would be applicable to the proposed project during construction and once operational (assume operational in 2015). Describe SCE's maintenance, repair, and replacement practices and resultant effects on SF6 leakage.

c. Confirm that SCE would report SF6 emissions from components of the proposed project as required by California Code of Regulations Title 17, Sections 95350 to 95359 for reducing SF6 emissions from gas insulated switchgear. Assuming that SCE would comply with Sections 95350 to 95359, explain how SF6 emissions specific to components of the proposed project would be accounted for and reported.

d. In addition to mandatory reporting requirements, clarify whether SCE would report SF6 emissions from components of the proposed project in voluntary climate change initiatives, such as the Climate Registry.

e. As of December 2011, SCE is listed as a member of the U.S. EPA's SF6 Emission Reduction Partnership for Electric Power Systems (EPA 2010 Annual Report on SF6 Emission Reduction Partnership). Confirm that the following partnership agreements would apply to construction, operation, and maintenance of the proposed Alberhill System Project: estimate current annual SF6 emissions; inventory emissions of SF6 annually using an emissions inventory protocol; establish a strategy for replacing older, leakier pieces of equipment; implement SF6 recovery and recycling; ensure that only knowledgeable personnel handle SF6; and submit annual progress reports

Response to Question 01:

a. This is confirmed. SCE only purchases and installs gas-insulated equipment with a manufacturer's certified 0.5 percent per year SF6 leak rate or less.

b. SCE reports its annual SF6 emissions from its Gas Insulated Switchgear (GIS) to the California Air Resources Board (CARB) according to Title 17. Once operational, gas insulated switchgear emissions associated with the Project and Alberhill Substation would be included in the annual SF6 inventory and reported to CARB.

SCE would only replace older equipment (gas insulated switchgear) with newer manufacturer certified equipment with 0.5 percent per year SF6 leak rate or less. Therefore, overall emissions of SF6 from equipment owned by SCE would decrease over time as equipment is replaced.

c. SCE reports its annual SF6 emissions from its Gas Insulated Switchgear (GIS) to CARB according to Title 17, 95350 to 95359 California Code Regulation (CCR). SCE estimates the SF6 emissions using the mass balance method for bottle inventory, and inventory of GIS that come in operation or retire. SCE also reports the inventory of all GIS, and SF6 bottle inventories. SCE also complies with the CCR 95352 Maximum Annual SF6 Emission Rate.

d. Because SCE is now required to report its SF_6 emissions to the state and federal governments, SCE will no longer participate in voluntary reporting programs for this specific purpose.

e. Pursuant to state and federal regulations, SCE will take the following actions: (1) using an emissions inventory protocol, calculating annual emissions from SCE-owned facilities (including the proposed Alberhill System Project); and (2) report emissions annually to the California Air Resources Board (CARB) and U.S. EPA. SCE calculates its emissions using the mass-balance method required by CARB and U.S. EPA.

SCE will continue its existing practices in the following areas: (1) replacing older, leakier equipment; and (2) recovering and recycling SF_6 gas. Generally, SF_6 gas is handled only by knowledgeable personnel.

U.S. EPA staff recently stated that companies subject to the new federal reporting regulations need not report emissions through the voluntary SF_6 Emission Reduction Partnership for Electric Power Systems. Therefore, SCE will no longer do so. *See* EPA Greenhouse Gas Reporting Program Update (slide No. 14), Apr. 18, 2012 (available at http://www.epa.gov/highgwp/electricpower-sf6/documents/conf12_EPA_ICF_update.pdf).

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-023

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 04/17/2012

Question 02:

Q. 14.6.1

If the proposed substation were constructed with all gas-insulated switchgear, how many additional pounds of SF6 would be required?

Response to Question 02:

The amount of SF6 required for the Alberhill Substation with all gas-insulated switchgear would be 65,000 pounds.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-024

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 05/11/2012

Question 01-07:

Q.12.7.3.2

1. Copy of the notice for weed abatement that SCE received from the fire department.
2. Date and time weed abatement occurred.
3. Where mowing occurred and acres mowed.
    a. Was mowing the only method of weed abatement employed?
4. Size of tractor, type of tires (i.e., rubber or tracked), type of mowing device, and summary of methods used for weed abatement
5. Types of resource monitors present during weed abatement
6. Monitoring and survey report(s)
    a. Areas surveyed, date(s) of survey(s), and species surveyed (e.g., special status plants, SKR, nesting birds, etc.)
    b. SKR monitoring results and/or pre-weed abatement sweeps
        i. The latest SKR survey that E & E has on file for the proposed substation site was completed in September 2011.
    c. Monitoring results for other species as applicable
7. BMPs followed
    a. Ex. Buffer zones established?
    b. Ex. Dust suppression (may not be required if weed abatement ordered by fire department)
    c. Ex. Vehicle and equipment fueling and maintenance

Response to Question 01-07:

1. Please see attachment.
2. Weed abatement occurred between 4/25/12 and 4/28/12 during normal business hours.
3. Approximately two acres along the front of parcels 391-160-021 and 391-160-022 were mowed. Please see paragraph 4, below regarding types of weed abatement employed.
4. The tractor used was 6 1/2 feet wide by 19 feet long with an attachment. The tractor had track tires with a blade attached to mow four inches above ground. In smaller areas, a weed-eater was used to cut the weeds four inches aboveground.
5. Environmental monitors were not present during weed abatement.
6. The area was previously covered by dense vegetation approximately 4 feet in height and did not encompass habitat suitable for SKR or BUOW. Past SKR and BUOW surveys at

the substation site confirm this. Areas within and surrounding the substation site that do encompass habitat suitable for sensitive species were provided previously to the CPUC as part of previous data requests for inclusion in the DEIR.

a. No pre-activity biological surveys were conducted.
b. No pre-activity biological surveys were conducted and no bio monitoring was implemented. The September 2011 survey was the last SKR survey conducted and the area in question had already been determined to be unsuitable for SKR presence. No further SKR surveys in this area will be conducted unless it is determined that the vegetation removal has now resulted in the creation of conditions suitable for the SKR presence.
c. No bio monitoring was implemented.

7. No BMPs typically associated with capital projects were implemented.
    a. See above
    b. Weed abatement was ordered by the fire department.
    c. See above.

1 attachment

Alberhill-Energy Division-SCE-024 Attachment - Weed Violation.TIF

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-025

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 06/27/2012

Question 01:

Q. 1.16.1

a. Exhibit A (page 1, bullet point 3, sub-bullet 2): Our records indicate that 115-kV Segments #3, #4, #5, and #7 total 10.5 miles (see attached) and not 8 miles.
b. Exhibit A (page 2, bullet point 1, sub-bullet 1): How would this alternative differ than the proposed 6.5-mile 115-kV route? Provide a map that identifies the alternative route.
c. Exhibit A (page 2, bullet point 1, sub-bullet 2): How would this alternative differ than the proposed 8-mile (10.5-mile, see data request #1, above) 115-kV route? Provide a map that identifies the alternative route.
d. Exhibit A (page 2, bullet point 1, sub-bullet 3): Does this refer to the 115-kV alternative that would be constructed along Byers Road? If not, provide a map that identifies the new alternative route.
e. Exhibit A (page 2): The PEA indicates that construction would take 23 months. Confirm whether the construction schedule has changed?

Response to Question 01:

a. This sub-bullet has been revised to 11 miles, see attachment; after reviewing survey data, the replacement of structures along the Ivyglen-Newcomb-Skylark and Elsinore-Skylark 115 kV subtransmission lines has increased from approximately 4.5 miles to approximately 5 miles.

b. This sub-bullet is not different from the proposed 6.5-mile 115 kV route.

c. With the exception of the intersection that the proposed 115 kV route turns north, this sub-bullet is not different from the proposed 115 kV route. The proposed 115 kV route turns north at the intersection of Bundy Canyon Drive and Murrieta Road, whereas the alternative 115 kV route turns north at the intersection of Bundy Canyon Road and Waldon Road.

d. Yes.

e. Confirmed; construction is anticipated to take approximately 28 months.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-025

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 06/27/2012

Question 02:

Q. 1.16.2

a. Exhibit A (page 2): Provide the complete take agreement submittal, including Exhibit B and all other exhibits, to the CPUC and E & E as soon as the documents are approved by the RCHCA.

Response to Question 02:

SCE will submit the final agreement to the CPUC once it has been presented to the RCHCA Board of Directors, which is anticipated to take place in September 2012.

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

Proposed SCE Alberhill Substation
Lake Elsinore, California

PREPARED FOR

Southern California Edison Company
Environmental Engineering
2131 Walnut Grove Avenue
Rosemead, CA 91770

PREPARED BY

Rubicon Engineering Corporation
20 Corporate Park, Suite 285
Irvine, California 92606

Project No. 1009.24

RUBICON
Engineering Corporation

RUBICON
Engineering Corporation

September 30, 2009 Project No. 1009.24

Ms. Phuong Tran
Environmental Engineer
SOUTHERN CALIFORNIA EDISON COMPANY
Environmental Engineering
2131 Walnut Grove Avenue
Rosemead, CA 91770

Phase I Environmental Site Assessment Report
Proposed SCE Alberhill Substation
Lake Elsinore, California

Dear Ms. Tran:

Enclosed is a copy of the Phase I Environmental Site Assessment Report for the subject land to be acquired by Southern California Edison Company in Lake Elsinore, California. If you have any questions regarding this report or require additional information, please do not hesitate to call.

Respectfully submitted,

RUBICON ENGINEERING CORPORATION

Mohsen Mehran, Ph.D.
Project Manager

P:\1009 SCE\1009.24 Lake Elsinore Alberhill Substation\Reports

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LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

AAI	All Appropriate Inquiries
AIRS	Aerometric Information Retrieval System
APN	Assessor Parcel Number
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BRS	Biennial Reporting System
CDL	Clandestine Drug Labs
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Index System
CESQG	Conditionally Exempt Small Quantity Generators
CFR	Code of Federal Regulations
CHMIRS	California Hazardous Material Incident Report System
CRE	Corporate Real Estate
DOD	Department of Defense
DOGGR	Division of Oil, Gas & Geothermal Resources
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EDR	Environmental Data Resources, Inc.
EMI	Emissions Inventory Data
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
EVMWD	Elsinore Valley Municipal Water District
FEMA	Federal Emergency Management Agency
FFIS	Federal Facilities Information System
FID	Facility Inventory Database
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FINDS	Facility Index System/Facility Registry System
FRDS	Federal Reporting Data System
FUDS	Formerly Used Defense Sites
FURS	Federal Underground Injection Control
HMIRS	Hazardous Materials Information Reporting System
HMMD	Hazardous Materials Management Division
ICIS	Integrated Compliance Information System
LDS	Land Disposal sites
LI	Light Industrial

LIST OF ABBREVIATIONS AND ACRONYMS (cont'd)

LQG	large quantity generator
LUCIS	Land Use Control Information System
LUST	Leaking Underground Storage Tank
MCS	Military Cleanup sites
MLTS	Material Licensing Tracking system
NFRAP	No Further Remedial Action Planned
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
ODI	Open Dump Inventory
OPS	Office of Pipeline Safety
OS-RUR	Open Space Rural
PADS	PCB Activity database System
PCB	poly-chlorinated biphenyl
PCS	Permit Compliance System
PEA	Preliminary Environmental Assessment
RAATS	RCRA Administrative Action Tracking System
RADINFO	Radiation Information Database
RCBSD	Riverside County Building & Safety Department
RCDEH	Riverside County Department of Environmental Health
RCRA	Resource Conservation and Recovery Act
ROD	Records of Decision
RR	Rural Residential
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SCE	Southern California Edison
SCRD	State Coalition for Remediation of Drycleaners
SQG	small quantity generator
SSTS	Section Seven Tracking Systems
SWAT	Solid Waste Assessment Test
SWEEPS	Statewide Environmental Evaluation and Planning System
SWIS	Solid Waste Information System
SWRCB	State Water Resources Control Board
TBA	Targeted Brownfields Assessment
TPCA	Toxic Pits Cleanup Act
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substance Control Act
TSD	treatment, storage and disposal
UMTRA	Uranium Mill Tailings Remedial Action
USGS	U.S. Geological Survey

LIST OF ABBREVIATIONS AND ACRONYMS (cont'd)

UST	underground storage tank
VCP	Voluntary Cleanup Program
WDS	Waste Discharge System
WIP	Well Investigation Program
WMUDS	Waste Management Unit Database System

EXECUTIVE SUMMARY

Southern California Edison Company (SCE) is considering acquiring approximately 124 acres of land (the site) located along the north side of Temescal Canyon Road and Concordia Ranch Road in Lake Elsinore, California to construct a new substation. Rubicon Engineering Corporation (Rubicon) has conducted a Phase I Environmental Site Assessment (ESA) on behalf of SCE to identify, to the extent feasible, recognized environmental conditions in connection with the site.

The scope of the Phase I ESA included review of physiographic information including regional geology and hydrogeology; review of site history and land use within the site vicinity; review of federal, state, tribal, and local government agency records; and site reconnaissance and interviews with the land owner and other personnel. Also, the biology review for the site is included in Appendix I.

Based on historical information available during this Phase I ESA, the site and vicinity appear to have been used for agricultural purpose dating back to at least 1938. Aerial photographs dated 1938 and 1953 shows that the site consisted of orchards, plowed fields, and numerous building structures. By 1967, most of orchards and building structures at the site had disappeared. A building inspection report dated 1974 indicates the existence of a barn at the site. According to the interview with Mr. Thomas Boyle, one of the site owners, the site was originally used for nut orchards as evidenced by the remaining nut trees in various places of the site. When Mr. Boyle purchased the house located on the western end of the site in 1980, the site was a residential ranch. He said that the site was a residential ranch from the 1950's to 1981, and it was renovated to a horse ranch in 1982. Correspondingly, numerous building permits were found from the Riverside County Building & Safety Department (RCBSD) since December 1981. A building permit dated December 29, 1981, indicated that a horse barn was under construction. Since then, the horse ranch has gone through several alterations and improvements over the years. SCE indicated, in user questionnaire, that the property was previously used for residential and rural ranch. A review of available user and owners questionnaires did not provide any significant information to identify recognized environmental conditions. There are no oil and gas wells located within a mile radius of the site.

Based on site reconnaissance, the site consisted of a residence, a horse ranch and undeveloped parcels of land. The horse ranch consisted of two residential dwellings, two garage buildings, a storage shed, a horse track, a horse barn, and numerous animal corrals. An aboveground water tank was observed on the western portion of the horse ranch along the Love Lane. An abandoned mobile home and large pieces of fiberglass was observed on the northwest corner of the horse ranch. Several 55-gallon drums containing animal feeds were observed in horse barns and corrals. Also, debris and dumped trash was observed on the side of a dirt road on the eastern portion of the site.

Based on records review and interviews, there are a 27" agriculture subsurface water line, four septic tanks and one water well at the site. The 27" agriculture subsurface water line is located

under APN 391-120-015, a property owned by EVMWD within the horse ranch. One of the four septic tanks is located in the front of Mr. Thomas Boyle's house (APN 391-120-003). The other three septic tanks are located in the horse ranch: the first septic tank is located by the mobile home, the second tank is located behind the residential building (the larger of two), and the third tank is located in front of the hay storage area. The water well is also located in the horse ranch next to the aboveground water tank.

Rubicon performed the Phase I ESA of the site according to the American Society for Testing and Materials (ASTM) E1527-05 and All Appropriate Inquiries (AAI) in conformance with the standards and practices set forth in the Code of Federal Regulations (CFR), Title 40, Part 312. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the site.

1.0 INTRODUCTION

This report documents a Phase I ESA for the SCE's proposed Alberhill Substation (the site) located along north side of Temescal Canyon Road and Concordia Ranch Road in Lake Elsinore, California. The site location map is presented in Figure 1. The site consists of ten (10) APNs. The APNs and acreage information are included in Appendix E. The site and vicinity map showing the adjacent properties is presented in Figure 2. Rubicon has conducted the Phase I ESA on behalf of SCE to identify, to the extent feasible, recognized environmental conditions in connection with the site. SCE is considering acquiring the site to construct a new substation.

1.1 APPROACH

The approach adopted by Rubicon for the Phase I ESA is consistent with the ASTM Standard E1527-05 entitled "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", and the 40 CFR, Part 312 titled "Standards and Practices for All Appropriate Inquiries; Final Rule", dated November 1, 2005. There were no exceptions to, or deletions from, the ASTM Practice E1527-05 during the preparation of this Phase I ESA. Rubicon's approach to the Phase I ESA included:

- Review of relevant background information such as the site location relative to major man-made and natural landmarks, surrounding land use, and regional geology/hydrogeology.

- Review of California Oil and Gas fields in the vicinity of the site.

- A compilation of site history and previous land use based on a review of chain of title records, historic aerial photographs dating back to the 1940's, historic topographic maps, available historic fire insurance maps, building permits, and city directories.

- Environmental lien search to identify environmental cleanup liens and other activities and use limitations, such as engineering and institutional controls.

- An assessment of the potential for the site to have been impacted by contaminants originating from off-site sources based on a review of federal, state, tribal, and local government agency records.

- An inspection of the site to identify recognized environmental conditions that may include indications of the improper handling, storage, or use of potentially hazardous materials. This task also includes interviews with property owners, tenants, and/or local agency personnel about hazardous materials handling and disposal procedures.

- An evaluation of the possible presence of hazardous materials at the site and/or in the subsurface environment beneath the site, with recommendations, if appropriate, for additional investigations or remediation.

1.2 LIMITATIONS

The Phase I ESA for the site was performed in accordance with current ASTM practices (ASTM, 2005). The resulting findings were based on the information available to Rubicon from the sources cited; however, Rubicon makes no warranty regarding the accuracy or completeness of the information available. This Phase I ESA excludes any evaluation of or with respect to asbestos, lead-based paint, radon, methane, lead in drinking water, endangered species, wetlands, geotechnical conditions or seismicity. Also, this report does not include evaluation of the potential impact of possible future activities on subsurface conditions or of undocumented activities on adjacent or nearby properties. Rubicon has conducted the Phase I ESA on behalf of SCE to help evaluate potential environmental liability associated with the acquisition of the site. SCE may rely upon the information provided in this Phase I ESA report for a period of 180 days from the date of issue. After 180 days, this Phase I ESA should be updated and, if appropriate, an addendum should be issued to extend the period during which this report can be relied upon. Rubicon will not be liable for any consequential damages arising from the use of this Phase I ESA Report for other than its intended purpose or from unauthorized use by third parties.

1.3 REPORT ORGANIZATION

The remainder of this Phase I ESA Report is organized into six sections. Section 2.0 documents the various sources of information utilized during the Phase I ESA. Section 3.0 describes the site and surrounding areas. Section 4.0 presents the site history. Section 5.0 provides a summary of the information collected from record reviews for the site and surrounding areas. Section 6.0 presents the findings of the site reconnaissance and Section 7.0 presents a summary of findings and conclusions. Supporting information is contained in figures, and appendices, all of which follow the text of this report. Appendix A presents selected historical topographic maps. Appendix B provides selected historical aerial photographs of the site. Appendix C contains the Environmental Data Resources (EDR) radius map report summarizing information available from a review of databases maintained by local, state, and federal government agencies. Appendix C also contains the EDR City Directory Abstract, Chain of Title Report, and EDR Environmental Lien Search Report. Appendix D contains historical building permits. Appendix E contains the site parcel information, site maps, and percolation investigation report. Appendix F contains Phase I ESA questionnaires completed by owners and the user. Photographs taken during the site visit are included in Appendix G. Appendix H contains the qualifications of the environmental professional conducting the Phase I ESA. Appendix I contains the biology review for the site.

2.0 SOURCES OF INFORMATION FOR PHASE I ESA

The sources of information, utilized in conducting the Phase I ESA, included historical topographic maps; historical aerial photographs; historical city directories; a walk-over survey of the site and adjoining properties; interviews and telephone conversations with current site owners; a review of records available at the site; a review of records available from selected local and state regulatory agencies; a review of databases maintained by local, state, and federal government agencies; and other records available from commercial sources.

2.1 TOPOGRAPHIC MAPS

Historical United States Geological Survey (USGS) topographic maps published between 1901 and 1997 were obtained from Environmental Data Resources, Inc. (EDR). The historical topographic maps, which have been scanned and annotated, are presented in Appendix A.

2.2 AERIAL PHOTOGRAPHS

To help understand the history of the site and past land use, historical aerial photographs published between 1938 and 2005 were obtained from EDR and reviewed. Copies of the aerial photographs are included in Appendix B in chronological order.

2.3 GOVERNMENT DATABASES

To document potential sources of contamination at or near the site, a government records search was conducted by EDR under contract to Rubicon. The search (EDR, September 10, 2009) included tribal, local, state, and federal records for the site and for other sites within ASTM standard radii of the facility. The records search is summarized in Section 5.0 and copies of EDR's reports are included in Appendix C. All of the databases searched by EDR had been updated within 90 days of the date the government version was made available.

2.4 FIRE INSURANCE MAPS

No Fire Insurance Maps are available for the area surrounding the site.

2.5 HISTORICAL BUILDING PERMIT REVIEW

Historical building permits from 1974 until 1988 were obtained from RCBSD and reviewed. The information is presented in Section 4.2, and copies of the permits are included in Appendix D.

2.6 HISTORICAL CITY DIRECTORY

Historical city directories for the site and surrounding areas from 1975 until 2007 were obtained from EDR and reviewed. The information is presented in Section 4.3, and a copy of the city directory report as received from EDR is included in Appendix C.

2.7 CHAIN OF TITLE SEARCH

A chain of title search was conducted by EDR for the site. The results of the search are presented in Section 4.4 and a copy of the EDR report is included in Appendix C.

2.8 ENVIRONMENTAL LIEN SEARCH

An environmental lien search was conducted by EDR for the site. The results of the search are presented in Section 4.5 and a copy of the EDR report is included in Appendix C.

2.9 INTERVIEWS

Five people were interviewed in person or via telephone during the Phase I ESA. Environmental questionnaires were also submitted to the site owners (Appendix F). The user questionnaire completed by the SCE is also included in Appendix F. The information obtained during the interviews is presented in Section 6.3.

2.10 WALK-OVER SURVEY OF THE SITE

Rubicon personnel conducted a walk-over survey of the site on August 31, 2009. Information obtained during the walk-over survey is referenced, as appropriate, throughout the remainder of this report. Photographs taken during the walk-over survey are presented in Appendix G.

2.11 INFORMATION FROM LOCAL AND STATE AGENCIES

Rubicon contacted the following agencies to obtain files for the site:

- Riverside County Office of Assessor
- Riverside County Building and Safety Department
- Riverside County Department of Environmental Health, Hazardous Material Management Division
- State Water Resources Control Board (SWRCB)
- Department of Toxic Substances Control (DTSC)

Information obtained from each of the above agencies is discussed in Section 5.2.

2.12 OTHER SOURCES

Rubicon utilized the worldwide web, and other internet-based services to research information about the site and surrounding areas. These sources are referenced, as appropriate, throughout the remainder of this report.

2.13 OIL AND GAS RECORDS

To assess the possible presence of oil and/or natural gas wells within or near the site, Rubicon reviewed information available from the Division of Oil, Gas, and Geothermal Resources (DOGGR), Department of the Interior Minerals Management Service. The available records indicate that there are no oil or gas wells within a one-mile radius of the site. A portion of the DOGGR Wildcat Map W1-4 for the site and vicinity is presented in Figure 3.

3.0 BACKGROUND INFORMATION

Background and regional information considered relevant to the subject ESA includes the site location, adjoining properties, the physiographic setting of the site, and regional geologic and hydrogeologic conditions.

3.1 SITE LOCATION AND DESCRIPTION

The site is an L-shaped area covering approximately 124 acres of land located along north side of Temescal Canyon Road and Concordia Ranch Road in Lake Elsinore, California (Figure 1). The site consists of ten (10) parcels. The site comprises a residence, a horse ranch, and undeveloped parcels of land (Figure 2). According to Riverside County Assessor's web records, the land use designations are combination of RR (Rural Residential), OS-RUR (Open Space Rural), and LI (Light Industrial).

3.2 ADJOINING PROPERTIES

NORTH

- The property to the north of the horse track is a trucking company. The rest of the property to the north is undeveloped.

EAST

- The property to the east is mostly undeveloped land with few residential homes.

SOUTH

- The property to the south is vacant land and Freeway 15.

WEST

- The property to the west of the site is vacant land.

3.3 TOPOGRAPHY

Based on a review of the USGS Alberhill Map (USGS, 1995), ground elevations across the project vary in elevation from approximately 1200 feet to 1600 feet above mean seal level (MSL). See Appendix A.

3.4 REGIONAL GEOLOGY

The higher elevations of the site are underlain by extrusive and volcaniclastic rocks of the Estelle Mountain Volcanics (Cretaceous). The lower elevations are composed of Quaternary Alluvium of the Temescal Wash-These sediments are composed of sands, gravels, silts, and some cobbles and boulders. Isolate bodies of Older Alluvium are present at the base of the slope.

3.5 REGIONAL HYDROGEOLOGY

The bulk of the rocks at the site (volcanics) are considered to be non-water bearing. Drainage within the small ravines on the upper elevations drains westerly and southwesterly into Temescal Wash. The stream flow (some portions on the surface, some in the subsurface) within Temescal Wash flows northwesterly toward Corona and the Santa Ana River.

3.6 FLOODPLAIN INFORMATION

EDR searched the Federal Emergency Management Agency (FEMA) electronic database for floodplain information for the site. According to EDR's report, the site does not fall within the 100-year or 500- year flood zone.

4.0 SITE HISTORY

The site history integrates information available from the sources outlined in Section 2.0, particularly the historical aerial photographs, historical topographic maps, historical building permits, and interviews.

4.1 HISTORICAL AERIAL PHOTOGRAPHS, SANBORN AND TOPOGRAPHIC MAPS

Seven historical USGS topographic quadrangle maps from 1901 to 1997 were obtained and reviewed. Eight aerial photographs (flown between 1938 and 2005) of the site and the surrounding region were also reviewed. Sanborn Maps were not available for the area surrounding the site. The historical topographic maps and aerial photographs are presented in Appendices A and B, respectively. Pertinent features observed on the maps and aerial photographs are summarized in chronological order, as follows:

1901: The 1901 topographic map shows much of the region to be undeveloped. The map shows a road that seems like Temescal Canyon Road, and random building structure along the road. The Alberhill Coal Mine is located a few miles southeast of the site.

1938: The 1938 aerial photograph shows that the site and the adjoining property to the west comprise plowed fields and orchards. Several building structures are visible at the site. Adjoining properties to the north, east, and south of the site seem to be undeveloped.

1953: The 1953 aerial photograph shows no changes at the site from the 1938 aerial photograph. Adjoining properties to the south of the site is developed and comprise several building structures and plowed fields. No significant changes are identified in the adjoining properties.

1954: The 1954 topographic map shows several building structures at the site. Temescal Canyon Road and a rail road track are identified along the south side of site. A ceramic factory is located about a mile southeast of the site.

1967: The 1967 aerial photograph shows another major road was constructed south of the site. Most of the orchards and building structures have disappeared, and new buildings structures are present at the site. No significant changes are identified in the adjoining properties.

1973: The 1973 topographic map resembles 1967 aerial photograph.

1980: The 1980 aerial photograph shows Concordia Canyon Road along the south side of the site, and Freeway 15 to the south. Also, several building structures are identified on the north

side of Concordia Canyon Road. No significant changes are identified in the adjoining properties.

1982: The 1982 topographic map resembles 1980 aerial photograph.

1988: The 1988 topographic map shows a horse track has been constructed at the site. The site also comprises 4 square shape structures and 2 long rectangular shape structures.

1990: The 1990 aerial photograph almost resembles 1988 topographic map. The photograph shows more rectangular shape structures and more dirt roads at the site. A building structure is identified on the adjoining property to the east.

1994: The 1994 aerial photograph show no significant changes from the 1990 aerial photograph.

1997: The 1997 topographic map shows a pond inside the horse track at the site.

2002: The 2002 aerial photograph shows several building structures have been constructed inside the horse track. A portion of adjoining property to the north has been graded, and several building structures are present.

2005: The 2005 aerial photograph shows no significant changes at the site from the 2002 aerial photograph. Adjoining property to the north has more graded land with more structures.

4.2 HISTORICAL BUILDING PERMIT REVIEW

Rubicon reviewed available building permits from the Riverside County Building & Safety Department (RCBSD) for historical information. Permits of interest are summarized below, and hard copies of permits are included in Appendix D.

Permit Type & Number	Date	Permit Description
Inspection Report, Permit #247040	June 7, 1974	Inspection to convert barn to feed store. Report comment: not feasible to convert barn to F-2 occupancy.
Building Permit Permit #013056	December 29, 1981	Construct Agricultural Building. Final Date: January 28, 1982. Plot plan indicates that the horse barn was under construction.
Building Permit Permit #005830	January 7, 1982	Mobil Home Installation. Final Date: January 8, 1982.
Building Permit Permit #24190	March 29, 1982	Detached Restroom to Ranch. Final Date: May 13, 1982. Attached plot plan in the permit shows a possible septic tank by the restroom.

Permit Type, Number & Date	Date	Permit Description
Building Permit Permit #30878	July 12, 1982	Install Wood Fence. Final Date: July 20, 1982.
Building Permit Permit #130239	October 26, 1983	Construct a 30-Stall Horse Barn. Final Date: January 12, 1984.
Building Permit Permit #134315	January 9, 1984	Retaining Wall Val 4. Final Date: October 3, 1984.
Building Permit Permit #401821	December 30, 1987	1440 Square Foot Barn. Final Date: May 5, 1988.
Building Permit Permit #418464	March 10, 1988	Mobile Home Site Preparation, 550 sq. ft. – System Design: 10 x 50 2 B.R. Mobile; 750 gal. septic tank; 225 sq.ft. bottom area of trenches, min.; 1 line, 75' x 36", min.; 1 ft. rock beneath drain lines. Final Date of Sewage Disposal: June 22, 1988
Building Permit Permit #418700	March 17, 1988	Mobile Home Installation, 550 sq. ft. Final Date: June 22, 1988.
Building Permit Permit #418703	March 17, 1988	Agricultural Barn 41 x 74. Final May 23, 1988.

4.3 CITY DIRECTORIES

EDR's historical city directory search revealed following information:

- 14116 Temescal Canyon Road (On Site):

Year	Uses	Source
1991	Harris Ranch	Haines Criss-Cross Directory

- 14299 Temescal Canyon Road (Off Site)

Year	Uses	Source
2007	Ca Landscaping Rock Candee William Enterprises Inc Temescal Canyon Rockery	Haines Criss-Cross Directory
2000	Ca Landscaping Rock Candee William Enterprises Inc Temescal Canyon Rockery	Haines Criss-Cross Directory
1995	No Return	Haines Criss-Cross Directory
1991	Acosta Bldg Materials	Haines Criss-Cross Directory

4.4 CHAIN OF TITLE SEARCH

Rubicon requested a chain of title search report for the ten parcels of the site that includes information of historical transfers of titles. Below is the summary of deed/ownership information:

Date	Document Type	Grantor	Grantee	APN	Instrument Number
4/6/1961	Grant Deed	Edward S. Shattuck and Mary J Shattuck, husband and wife	Edward S. Shattuck S Shattuck and Mary Jane Shattuck, husband and wife as C/P	391-160-022-2	30147
8/30/1971	Probate	Estate of Edward S. Shattuck	Eleanor J. Shattuck, ET AL Trustees	391-160-22	97938
7/2/1980	Grant Deed	Virginia Gardner, a widow	Thomas Joseph Boyle and Bridget Rheta Boyle, husband and wife, as joint tenants	391-120-003	160645
3/23/1981	Grant Deed	Donald A. Prenger and Evelyn A. Prenger	Jose Quintana and Maria Del Socorro Yanez	391-120-016, 391-120-002	53001
2/6/1984	Correction Grant Deed	William M. Smith and Elaine K. Smith, husband and wife	Jose Quintana, a married man as his sole and separate property as to an undivided ½ interest and Fernando Esquivel a married man as his sole and separate property as to an undivided ½ interest	391-120-26	34407
2/15/1984	Quitclaim Deed	Maria Quintana, wife of the Grantee	Jose Quintana, a married man as his sole and separate property	391-120-26	34402
2/15/1984	Quitclaim Deed	Blanca Esquivel, wife of the Grantee	Fernando Esquivel, a married man as his sole and separate property	391-120-26	34409

2/15/1984	Grant Deed	Fernando Esquivel	Jose Quintana, a married man as his sole and separate property	391-120-26	43688
2/17/1984	Warranty Deed	Jose Quintana and Maria Yanez Quintana, husband and wife	Russell Harris and M. Brook Harris, husband and wife C/P	391-120-002, 391-120-016, 391-120-022, 391-120-024, 391-120-026	43689
6/5/1985	Grant Deed	William M. Smith and Elaine K. Smith, husband and wife C/P	William K. Smith and Elaine K. Smith, Co-Trustee under Declaration of Trust Dated 6-5-85	391-120-023, 391-160-021	138376
8/1/1989	Warranty Deed	N/A	EVMWD	391-120-015	
8/16/1989	Quit Claim Deed	The Anden Group, a California limited partnership	Russell Harris and M. Brook Harris, husband and wife C/P	391-120-002, 391-120-016, 391-120-022, 391-120-024, 391-120-026	340776
3/22/199.	Grant Deed	Russell Harris and M. Brook Harris, husband and wife	Sundance Music Corporation, a California Corporation	391-120-002, 391-120-016, 391-120-022, 391-120-024, 391-120-026	109430
8/15/1996	Trustee's Deed upon Sale	T.D. Service Company, Trustee	Centra Mortgage Holdings, Ltd.	391-120-002, 391-120-016, 391-120-022, 391-120-024, 391-120-026	314961
12/4/1996	Quit Claim Deed	Russell Harris and M. Brook Harris, Husband and wife	Centra Mortgage Holdings, Ltd.	391-120-002, 391-120-016, 391-120-022, 391-120-024, 391-120-026	458724
6/9/1997	Grant Deed	Centra Mortgage Holdings, Ltd.	Angela Cornelio, an unmarried woman	391-120-002, 391-120-016, 391-120-022, 391-120-024, 391-120-026	1999-329940

7/13/1999	Grant Deed	Angela Cornelio, a Single woman	Angeles Cornelio Keller as Trustee of the Angela Cornelio Living Trust, UDT 7/13/1999	391-120-002, 391-120-016, 391-120-022, 391-120-024, 391-120-026	1999-329940
4/2/2003	Grant Deed	Angela Cornelio Zavala, a unmarried woman, known as "The Angela Cornelio Zavala Revocable Family Living Trust r & t 11911"	Angeles Cornelio Keller, sole Trustee under the Angela Cornelio Living Trust, dated July 13, 1990	391-120-026, 391-120-016	2003-462124

4.5 ENVIRONMENTAL LIEN SEARCH

Rubicon requested an environmental lien search report for the site that includes a search of available land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls. No environmental liens or other activity and use limitations were found.

5.0 RECORDS REVIEW

As part of the Phase I ESA, Rubicon subcontracted a search of government databases for the site and vicinity to EDR, as discussed in Section 2.0. Local agencies were contacted to conduct a review of files related to the site or adjacent properties. The findings from the reviews are discussed below.

5.1 SUMMARY OF FEDERAL, STATE, TRIBAL AND LOCAL AGENCY DATABASE RECORDS

Under subcontract to Rubicon, on September 10, 2009, EDR conducted a search of government records to document potential sources of contamination at or in the vicinity of the site. EDR's search included federal, state, local, tribal, and EDR proprietary records for the site and for facilities within varying radii of the site. Results of the EDR database reviews, including site names, addresses, and figures showing identified property locations, are compiled in the EDR reports. The EDR reports are presented in Appendix C.

5.1.1 Federal Government Records

A listing of federal government records searched, along with the search radius and description of each listing is presented below. No facilities were identified in the records searched.

- NPL (1.0 mile): The NPL database is a subset of the CERCLIS database and identifies more than 1,200 sites for priority cleanup under the Superfund Program. The NPL database contains no records pertaining to NPL facilities (active, proposed, or delisted) within 1.0 mile of the site.

- NPL Liens (target property): Federal Superfund Liens. Under the authority granted to the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property 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. The site was not listed in this database.

- CERCLIS (0.5 miles): The Comprehensive Environmental Response, Compensation, and Liability Index System (CERCLIS) database contains data on potential hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and private persons pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLIS database also contains sites that are either proposed for inclusion on, or currently on the NPL, and sites that are in the screening and assessment phase for possible inclusion on the NPL. No facilities within 0.5 miles of the site were listed in this database.

- CERC-NFRAP (0.5 miles): This database lists former CERCLIS sites for which no further remedial action is planned; hence, NFRAP. No facilities within 0.5 miles of the site were listed in this database.

- CORRACTS (1.0 mile): Identifies hazardous waste handlers with Resource Conservation and Recovery Act (RCRA) corrective action activity. No facilities within 1.0 mile of the site were listed in this database.

- RCRIS (0.25 miles): The Resource Conservation and Recovery Information System includes selective information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. This includes treatment, storage or disposal (TSD) facilities within 0.25 miles of the site, large-quantity generators (LQG), small-quantity generators (SQG), and conditionally exempt small quantity generators within 0.25 miles of the site. No facilities within 0.25 miles of the site were listed in this database.

- US ENG CONTROLS (0.5 miles): This database includes 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 affect human health. No facilities within 0.5 miles of the site were listed in this database.

- US INST CONTROL (0.5 miles): This database is a listing of sites with institutional controls in place. This may include administrative measures such as ground water 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. No facilities within 0.5 miles of the site were listed in this database.

- ERNS (target property): The Emergency Response and Notification System database records and stores information on reported releases of oil and hazardous substances. The site was not listed in this database.

- DOD (1.0 mile): This database consists of federally owned 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. No facilities within 1.0 mile of the site were listed in this database.

- FUDS (1.0 mile): The listing includes locations of formerly used defense sites where the U.S. Army Corps of Engineers is actively working or will take necessary cleanup actions. There are no FUDS facilities within 1.0 mile of the site.

- US BROWNFIELDS (0.5 miles): Included in the listing are brownfields properties addressed by Targeted Brownfields Assessments (TBA). The TBA program is designed to help states, tribes, and municipalities minimize the uncertainties of contamination often associated with brownfields. EPA provides funding and/or technical assistance for environmental assessments to promote cleanup and redevelopment of brownfields. There are no US BROWNFIELDS facilities within 0.5 miles of the site.

- CONSENT (1 mile): The CONSENT database lists major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites and is released periodically by U.S. District Courts after settlements by parties to litigation matters. No facilities within 1.0 mile of the site were listed in this database.

- ROD (1.0 mile): Record of Decision documents mandate a permanent remedy at an NPL site and contain technical and health information to aid in the cleanup. The ROD database contains no records for facilities within 1.0 mile of the site.

- UMTRA (0.5 miles): 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 sand-like material (mine tailings) remained after uranium had been extracted from the ore. In 1978, twenty four inactive uranium mill tailing sites in various states were targeted for cleanup by the Department of Energy. No facilities within 0.5 miles of the site were listed in this database.

- ODI (0.5 miles): The Open Dump Inventory is a listing of disposal facilities that do not comply with one or more of the Part 257 or Part 258 Subtitle D criteria maintained by the EPA. There are no ODI facilities within 0.5 miles of the site.

- TRIS (target property): The Toxic Chemical-Release Inventory System identifies facilities that release toxic chemicals to the air, water, and/or land in reportable quantities under the Superfund Amendments and Reauthorization Act (SARA), Title III, Section 313. The site was not listed in the TRIS database.

- TSCA (target property): The Toxic Substances Control Act identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substances Inventory list. The site was not listed in the TSCA database.

- FTTS (target property): The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/Toxic Substance Control Act (TSCA) Tracking System tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA, and the Emergency Planning and Community Right-to-

Know Act (EPCRA). A HIST FTTS database contains historical FTTS listings since some EPA regions are closing out records. The site was not listed in the current or historical FTTS databases.

- SSTS (target property): The Federal Insecticide, Fungicide, and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the EPA 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. The site was not listed in the SSTS database.

- ICIS (target property): The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program and the unique needs of the National Pollutant Discharge Elimination System program. The site was not listed in the ICIS database.

- DOT OPS (target property): This database tracks incident and accident data related to the Department of Transportation, Office of Pipeline Safety. The site was not listed in the DOT OPS database.

- RADINFO (target property): The Radiation Information Database (RADINFO) contains information about facilities that are regulated by EPA. The site was not listed in the RADINFO database.

- LUCIS (0.5 miles): The Land Use Control Information System (LUCIS) database contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties. There are no LUCIS facilities within 0.5 miles of the site.

- US CDL (target property): This database contains a list of clandestine drug lab locations as maintained by the United States Department of Justice. The site was not listed in the CDL database.

- PADS (target property): The polychlorinated biphenyl (PCB) Activity Database System identifies generators, transporters, commercial storage facilities and/or brokers, and disposers of PCBs who are required to notify EPA of such activities. The site was not listed in the PADS database.

- MLTS (target property): The Material Licensing Tracking System is maintained by the Nuclear Regulatory Commission (NRC) and lists sites that store or use radioactive materials subject to NRC licensing requirements. The site was not listed in the MLTS database.

- MINES (0.25 miles): Master index file of mines is maintained by the Department of Labor, Mine Safety and Health Administration. The records indicate there are no MINES facilities within 0.25 miles of the site.

- FINDS (target property): The Facility Index System contains both facility information and "pointers" to other sources that contain more detail. These include RCRIS, PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), CERCLIS, DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activitiy Data System). The site was not listed in the FINDS database.

- RAATS (target property): The Resource Conservation and Recovery Act (RCRA) Administrative Action Tracking System database contains records based on enforcement actions under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. The site was not listed in the RAATS database.

5.1.2 State and Local Government Records

A listing of state and local government records searched, along with the search radius and description of each listing is presented below. No facilities were identified in the records.

- HIST CAL-SITES (1.0 mile): Includes confirmed and potential hazardous substance release sites. DTSC's Annual Work Plan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup. The CAL-SITES database is no longer updated by DTSC as it has been replaced by ENVIROSTOR. The HIST CAL-SITES database contains no records for facilities within 1.0 mile of the site.

- CA BOND EXP PLAN (1.0 mile): The 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. The CA BOND EXP PLAN database contains no records for facilities within 1.0 mile of the site.

- SCH (0.25 miles): This database 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 Cal Sites category depending on the level of threat to public health and safety or the environment they pose. There are no SCH facilities within 0.25 miles of the site.

- TOXIC PITS (1.0 mile): Toxic Pits Cleanup Act Sites identifies sites suspected of containing hazardous substances where cleanup has not yet been completed. There are no TOXIC PITS facilities within 1.0 mile of the site.

- ENVIROSTOR (1.0 mile): The DTSC's Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies 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 HIST CAL-SITES, 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. No facilities within 1.0 mile of the site were listed in this database.

- SWF/LF State Landfill (0.5 miles): SWF/LF (SWIS) records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites. No facilities within 0.5 miles of the site were listed in this database.

- CA WDS (target property): This database contains records pertaining to sites that have been issued "Waste Discharge Requirements" for discharges of waste to waters of the state. The site was not listed in the CA WDS database.

- WMUDS/SWAT (0.5 miles): The Waste Management Unit Database System is used by the SWRCB 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. The records indicate there are no WMUDS/ SWAT facilities within 0.5 miles of the site.

- CORTESE (1.0 mile): Identifies hazardous waste and substance sites. The database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with underground storage tanks (USTs) having a reportable release, and all solid waste disposal facilities from which there is known migration. No facilities within 1.0 mile of the site were listed in this database.

- SWRCY (0.5 miles): This database includes a listing of recycling facilities in California. There are no SWRCY facilities within 0.5 miles of the site.

- LUST (0.5 miles): Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking UST incidents. No facilities within 0.5 miles of the site were listed in this database.

- CA-FID (0.25 miles): The California Facility Database. This database contains active and inactive UST locations from the SWRCB. There are no CA-FID facilities within 0.25 miles of the site.

- CA SLIC (0.5 miles): The California Spills, Leaks, Investigation & Cleanup (SLIC) records are maintained by the SWRCB and pertain to "active toxic site investigations." No sites within 0.5 miles of the site were listed in this database.

- UST (0.25 miles): USTs are regulated under Subtitle I of RCRA and must be registered with the SWRCB. No facilities within 0.25 miles of the site were listed in this database.

- DEBRIS REGION 9 (0.5 miles): 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. The site was not listed in this database.

- HAULERS (target property): Registered Waste Tire Haulers Listing. A listing of registered waste tire haulers. The site was not listed in this database.

- HIST UST (0.25 miles): The Hazardous Substance Storage Container Database is a historical listing of UST sites. No facilities within 0.25 miles of the site were listed in this database.

- AST (0.25 miles): This database lists facilities at which aboveground petroleum storage tank facilities are located. There are no AST facilities within 0.25 miles of the site.

- SWEEPS UST (0.25 miles): Statewide environmental evaluation and planning system. This UST listing was updated and maintained by a company contracted by the SWRCB in the early 1980s. The listing is no longer updated or maintained. The local agency (RCDEH) is the contact for more information on a site on the SWEEPS list. No facilities within 0.25 miles of the site were listed in this database.

- HMIRS (target property): Hazardous Materials Information Reporting System. Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT. The site was not listed in this database.

- CHMIRS (target property): The California Hazardous Material Incident Reporting System contains information on reported hazardous material incidents (accidental releases or spills). The site was not listed in this database.

- LDS (target property): Land Disposal Sites Listing. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. The site was not listed in this database.

- MCS (target property): 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. The site was not listed in this database.

- RCRA-NonGen (0.25 miles): 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. No facilities within 0.5 miles of the site were listed in this database.

- NPDES (target property): National Pollutant Discharge Elimination System Permits Listing. A listing of NPDES permits, including storm water. The site was not listed in this database.

- NOTIFY 65 (1.0 mile): Proposition 65 Notification Records contain notices about any release that could impact drinking water and thereby expose the public to a potential health risk. No facilities within 1.0 mile of the site were listed in this database.

- DEED (0.5 miles): A list of deed restrictions is maintained by the DTSC to protect the public from unsafe exposures to hazardous substances and wastes. The records indicate that there are no DEED facilities within 0.5 miles of the site.

- VCP (0.5 miles): This database contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have requested that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs under the voluntary cleanup program (VCP). The records indicate that there are no VCP facilities within 0.5 miles of the site.

- DRYCLEANERS (0.25 miles): This database contains a list of dry cleaning-related facilities that have EPA identification numbers. No sites within 0.25 miles of the site were listed in this database.

- WIP (0.25 miles): This database contains the Well Investigation Program case list. The records indicate there are no WIP facilities within 0.25 miles of the site.

- CDL (target property): This database includes a listing of clandestine drug lab locations as maintained by the DTSC. The site was not listed in this database.

- RESPONSE (1.0 mile): This database 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. The records indicate that there are no RESPONSE facilities within 1.0 mile of the site.

- HAZNET (target property): The HAZNET database identifies hazardous waste generators and hazardous waste treatment, storage, and disposal facilities in the state of California based on extraction of data from hazardous waste manifests received each year by DTSC. The site was not listed in the HAZNET database.

- EMI (target property): The California Air Resources Board maintains a database of toxics and criteria pollutant emissions data. The site was not listed in the EMI database.

- SCRD DRYCLEANERS (0.5 miles): 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. No sites within 0.5 miles of the site were listed in this database.

5.1.3 Tribal Records

A listing of tribal records searched, along with the search radius and description of each listing is presented below. No facilities were identified in the records.

- INDIAN RESERV (1.0 mile): This database includes Indian administered lands of the United States that have any area equal to or greater than 640 acres. The records indicate there are no INDIAN RESERV facilities within 1 mile of the site.

- INDIAN LUST (0.5 miles): This database includes leaky underground storage tank sites located on Indian land. The records indicate there are no INDIAN LUST facilities within 0.5 miles of the site.

- INDIAN UST (0.25 miles): This database includes a listing of USTs located on Indian land. The records indicate there are no INDIAN UST facilities within 0.25 miles of the site.

- INDIAN ODI (0.5 miles): Report on the status of Open Dumps on Indian lands. Location of open dumps on Indian land. The records indicate there are no Indian ODI facilities within 0.5 miles of the site.

5.1.4 EDR Proprietary Records

EDR's proprietary records include listings of manufactured gas plants, gas stations, and dry cleaners. Manufactured gas plants were searched within a 1.0 mile radius of the site while gas stations and dry cleaners were searched within a 0.25 miles radius of the site. According to the records, none of these types of facilities were found within their respective search radii from the site.

5.1.5 Orphan Sites

EDR's radius map report identified 6 unmapped facilities due to inadequate address information. These facilities are referred to as orphan sites by EDR. Rubicon reviewed the site reports and conducted research via the internet to assist in identifying the site location and nature of the database listing. The research showed that the closest site was located approximately 2 miles from the site.

5.2 AGENCY RECORDS

In addition to the government records, Rubicon reviewed electronic records available from the SWRCB GeoTracker website and DTSC Envirostor website. The review showed that a facility with a LUST case was identified near the site. The name of the facility is Humble Transport Company at 22300 Temescal Canyon Road in Corona, California. The LUST case at this facility was open on July 18, 1986 and closed on August 22, 1986. The potential contaminant of concern was diesel. The LUST case was open for a short time, and soil was the only potential media affected; therefore, it does not appear that this facility would adversely affect the subsurface conditions at the site. No other facilities were found.

Rubicon contacted Riverside County Environmental Health Department, Hazardous materials management Division, for any records of chemical releases/violations and aboveground/ underground storage tanks at the site. No records were found.

Rubicon reviewed available building permits from the RCBSD to find out if any building or occupancy permits were issued to the subject property that may indicate information regarding the presence of underground storage tanks, hazardous material storage/use and/or spills on the subject site. Building permits indicated the possible existence of two septic tanks at the horse ranch. One septic tank was located by the mobile home, near the northwest corner of the race track and the other septic tank by a house in the horse ranch. Also, a permit application for a

subsurface sewage disposal system, under building permit #418464, indicated that a well was the water source.

5.3 USER PROVIDED INFORMATION

SCE provided Rubicon with the property information including parcel detail information, parcel maps, a permit application, dated March 8, 1988, for a subsurface sewage disposal system, and Percolation Investigation Report (PIR), dated February 27, 1988, performed by American/Pacific Soils Lab, Inc. (AM/PAC). The permit application was to a 750 gallon septic tank and 75 feet leach line for a new 2-bedroom mobile home. The user provided information is included in Appendix F. Below is a summary of the PIR performed by AM/PAC for leach line system.

> The proposed project was to develop leach line system as part of a septic tank for a new 2-bedroom caretaker mobile (10 x 50) on the northwestern corner of Harris Ranch at 14114 Old Temescal Road, Corona. The mobile site was located in large horse ranch. No other systems or wells were located in the mobile area. No detrimental features were noted in northwest portion of the property. Exploratory boring were drilled to a depth of 15 feet, and no groundwater was encountered. The report concluded that there was sufficient area on each lot in question to support an individual sewage system that will meet the codes and standards of the riverside county health department at that time. Also, the groundwater table will not encroach within the allowable limits set forth by county and state requirements at that time. The site plot plan shows a horse barn, a horse track, and a pond inside the horse track. Environmental soil sampling was not performed during the investigation.

SCE also provided Rubicon with the limited record search assessment report for the site (Appendix E). Below is a summary of the report.

> On July 17, 2009, SCE Environmental Engineering (EE) has performed a limited records search assessment for the site. The assessed records included flood zone map from FEMA website, DOGGR website, Environmental FirstSearch Area Report, SWRCB Geotracker Website, and DTSC Envirostor website. The available public records did not show any potential environmental issues that would preclude SCE from using the site for its future substation.

5.4 GROUND WATER PRODUCTION WELLS

The following federal and state databases were searched for water well information:

- Federal USGS Well Information (EDR search)
- FRDS Public Water Supply System Information (EDR search)
- State Database Well Information (EDR search)
- USGS Historical Topographic Maps

According to the EDR report (Appendix C), there is no public drinking water wells located within a 1.0 mile radius of the site.

6.0 SITE RECONNAISSANCE

The purpose of the site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with the site. The site and adjoining properties were visually observed on August 31, 2009, by Mr. Peter Lee of Rubicon. The specific objective of the reconnaissance was to note visual or olfactory evidence of recognized environmental conditions. Additionally, reconnaissance of adjoining properties was performed to identify land use and associated potential recognized environmental conditions. Figure 2 presents the site and developments in close proximity. Site photographs are included in Appendix G.

6.1 SITE OBSERVATIONS

The site is an L-shaped area covering approximately 124 acres of land located along north side of Temescal Canyon Road and Concordia Ranch Road in Lake Elsinore, California (Figure 1). The site consists of ten (10) APNs. APN 391-120-003 is a residence located on the western end of the site; APNs 391-120-002, 016, 022, 024 and a portion of 026 are mostly a horse ranch occupying western portion of the site; and the rest of the APNs are mostly undeveloped land.

The horse ranch consists of two residential dwellings, two garage buildings, a storage shed, a horse track, a horse barn, and numerous animal corrals. An aboveground water tank was observed on the western portion of the horse ranch along the Love Lane. An abandoned mobile home and large pieces of fiberglass was observed on the northwestern corner of the horse ranch. Several 55-gallon drums containing animal feeds were observed in horse barns and corrals. Also, debris and dumped trash was observed on the side of a dirt road at the eastern portion of the site. Photographs taken at the site are included in Appendix G.

Based on records review and interviews, there are a 27” agriculture subsurface water line, four septic tanks and one water well at the site. The 27” agriculture subsurface water line is located under APN 391-120-015, a property owned by EVMWD within the horse ranch. One of the four septic tanks is located in the front of Mr. Thomas Boyle’s house (APN 391-120-003). The other three septic tanks are located in the horse ranch: the first septic tank is located by the mobile home, the second tank is located behind the residential building (the larger of two), and the third tank is located in front of the hay storage area. The water well is also located in the horse ranch next to the aboveground water tank.

6.2 ADJOINING PROPERTIES

Adjoining properties were visually examined from public access right-of-ways to make a cursory assessment of the current land use and its potential for recognized environmental conditions which may have impacted the site. Reconnaissance of adjoining properties was performed by viewing land use from legal boundaries or by walking around the adjoining properties that were legally accessible. A trucking company is located north of the horse ranch. With the exception

of the trucking company, most of the properties surrounding the site are undeveloped. There were no recognized environmental conditions observed at the adjoining properties.

6.3 INTERVIEWS

Interviews were conducted to obtain information on the history and current conditions of the site and adjacent areas in order to evaluate the potential presence of recognized environmental conditions. Results of the interviews are summarized below.

Mr. Thomas Boyle, one of the owners of the site, was interviewed in person on August 31, 2009. Mr. Boyle indicated that he purchased the house (APN 391-120-003) in 1980, when the site was a residential ranch. He said that the site was a residential ranch from the 1950's to 1981, and it was renovated to a horse ranch in 1982. He also believes that the land was originally used for nut orchards as evidenced by the remaining nut trees in various places of the site.

Mr. Thomas Boyle was interviewed again via telephone on September 28, 2009. Mr. Boyle indicated that, when he bought the house in 1980, he installed a 1500-gallon septic tank for the house in the front yard. He also said that another septic tank is located by the mobile home in the northwestern corner of the horse ranch.

Mr. Almando Flores, one of residents in the horse ranch, was interviewed in person on August 31, 2009. Mr. Flores indicated that there is no hazardous material/waste or underground storage tanks in the horse ranch.

Mr. Francisco Flores, the manager of the horse ranch, was interview via telephone on September 30, 2009. Mr. Flores indicated that there are three septic tanks and one water well in the horse ranch. The first septic tank is located by the mobile home, the second tank is located behind the residential building, and the third tank is located in front of the hay storage area. He said the water well is located next to the aboveground water tank.

Mr. Brett Paulson of SCE's Corporate Real Estate was interviewed in person on August 31, 2009. Mr. Paulson indicated that there is a subsurface water line along parcel number 391-120-015, a property owned EVMWD within the horse ranch. He also said that there are two septic tanks and one water well at the site.

Ms. Suzanne Cauffiel, a records technician at Riverside County Department of Environmental Health (RCDEH), Hazardous Materials Management Division (HMMD), was interviewed via telephone on September 22, 2009. According to Ms. Cauffiel, no records of hazardous material/violation or aboveground/underground storage tanks were found for 14016 & 14116 Temescal Canyon Road.

Owners Questionnaires were completed by Angeles C. Keeler Trustee (owner of APNs 391-120-002, 016, 022, 024 and 026), William M. Smith Trustee (owner of APN 391-120-023 & 391-160-021), and Mr. Thomas Boyle (owner of APN 391-120-003). Rubicon reviewed the

questionnaires and did not find any significant information to identify recognized environmental conditions. Copies of owner questionnaires are included in Appendix E.

The user questionnaire was completed by SCE. SCE indicated that the property was used for residential and rural ranch. Rubicon did not find any significant information to identify recognized environmental conditions. A copy of user questionnaire is included in Appendix E.

7.0 FINDINGS AND CONCLUSIONS

Based on historical information available during this Phase I ESA, the site and vicinity appear to have been used for agricultural purpose dating back to at least 1938. Aerial photographs dated 1938 and 1953 shows that the site consisted of orchards, plowed fields, and numerous building structures. By 1967, most of orchards and building structures at the site had disappeared. A building inspection report dated 1974 indicates the existence of a barn at the site. According to the interview with Mr. Thomas Boyle, one of the site owners, the site was originally used for nut orchards as evidenced by the remaining nut trees in various places of the site. When Mr. Boyle purchased the house located on the western end of the site in 1980, the site was a residential ranch. He said that the site was a residential ranch from the 1950's to 1981, and it was renovated to a horse ranch in 1982. Correspondingly, numerous building permits were found from the Riverside County Building & Safety Department (RCBSD) since December 1981. A building permit dated December 29, 1981, indicated that a horse barn was under construction. Since then, the horse ranch went through several alterations and improvements over the years. SCE indicated, in user questionnaire, that the property was previously used for residential and rural ranch. A review of available user and owners questionnaires did not provide any significant information to identify recognized environmental conditions. There are no oil and gas wells located within a mile radius of the site.

Based on site reconnaissance, the site consisted of a residence, a horse ranch and undeveloped parcels of land. The horse ranch consisted of two residential dwellings, two garage buildings, a storage shed, a horse track, a horse barn, and numerous animal corrals. An aboveground water tank was observed on the western portion of the horse ranch along the Love Lane. An abandoned mobile home and large pieces of fiberglass was observed on the northwest corner of the horse ranch. Several 55-gallon drums containing animal feeds were observed in horse barns and corrals. Also, debris and dumped trash was observed on the side of a dirt road on the eastern portion of the site.

Based on records review and interviews, there are a 27" agriculture subsurface water line, four septic tanks and one water well at the site. The 27" agriculture subsurface water line is located under APN 391-120-015, a property owned by EVMWD within the horse ranch. One of the four septic tanks is located in the front of Mr. Thomas Boyle's house (APN 391-120-003). The other three septic tanks are located in the horse ranch: the first septic tank is located by the mobile home, the second tank is located behind the residential building (the larger of two), and the third tank is located in front of the hay storage area. The water well is also located in the horse ranch next to the aboveground water tank.

Data gaps identified during the preparation of this Phase I ESA include unreturned owners questionnaires. However, historical information obtained from topographic maps, aerial photographs, and interviews provide adequate information related to the site's historical use. It is the opinion of the Environmental Professional that this data gap does not affect the findings of this Phase I ESA.

Rubicon Engineering Corporation has performed the Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM E1527-05 of the site. Any exceptions to, or deletions from, this practice are described in Section 1.1 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the property.

Rubicon declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental professional as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Mohsen Mehran, Ph.D.	Peter Lee	Amir Matin, PG, CHg, CEG
Project Manager	Staff Engineer	Senior Geologist

REFERENCES

American Society for Testing and Materials, 2005, "Standard practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM E 1527-05.

EDR, September 10, 2009, "The EDR Radius Map with Geocheck, 14116 Temescal Canyon Road, Lake Elsinore, CA 92530, Inquiry Number: 2587181.8s."

EDR, September 10, 2009, "The EDR-City Directory Abstract, 14116 Temescal Canyon Road, Lake Elsinore, CA 92530, Inquiry Number: 2587181.12."

EDR, September 10, 2009, "The EDR-Sanborn® Map Report, 14116 Temescal Canyon Road, Lake Elsinore, CA 92530, Inquiry Number: 2587181.9."

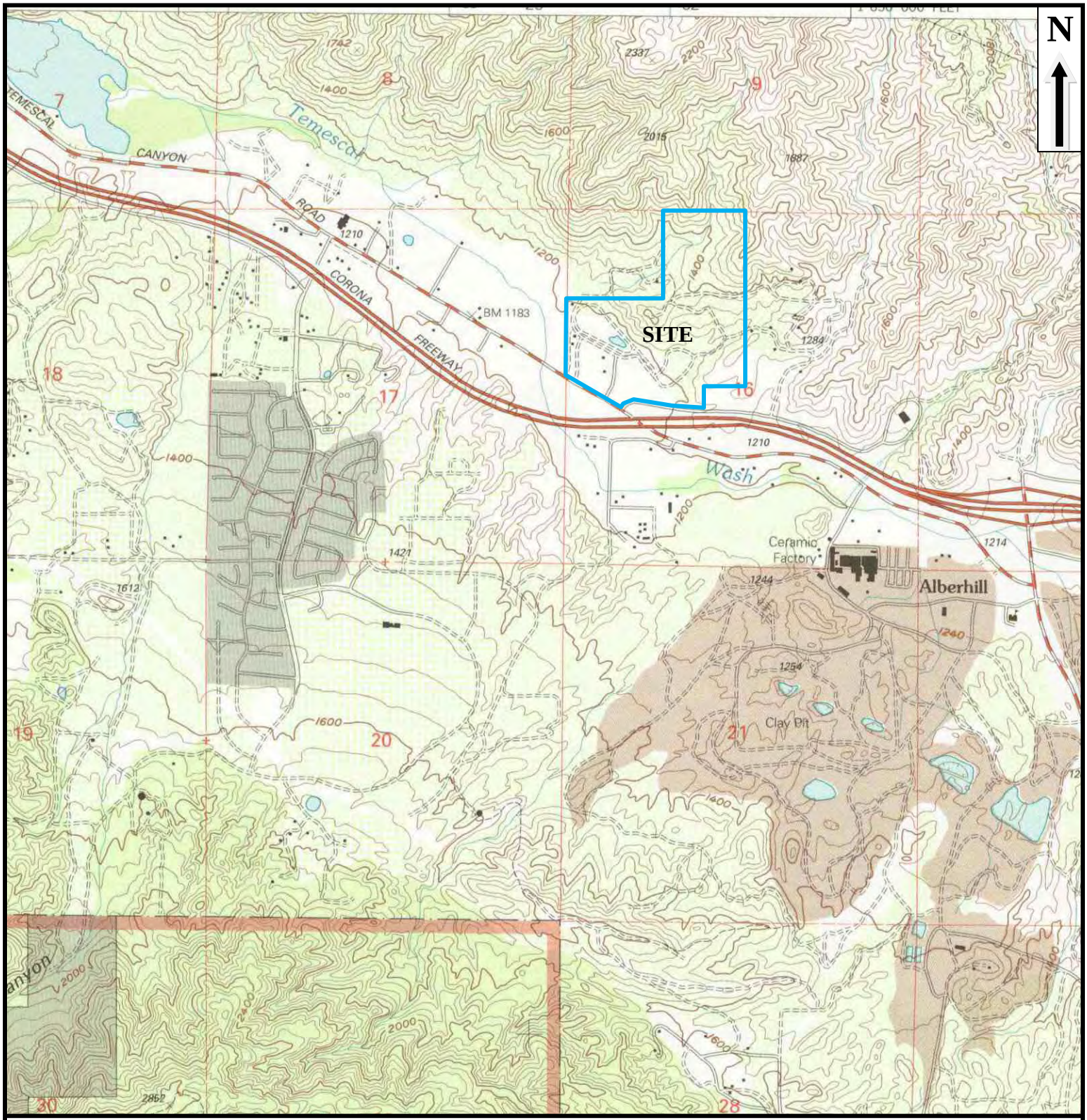
EDR, September 10, 2009, "The EDR Historical Topographic Map Report, 14116 Temescal Canyon Road, Lake Elsinore, CA 92530, Inquiry Number: 2587181.10."

EDR, September 10, 2009, "The EDR Aerial Photo Decade Package, 14116 Temescal Canyon Road, Lake Elsinore, CA 92530, Inquiry Number: 2587181.11."

Yahoo, 2009, http://maps.yahoo.com/

U.S.EPA, November 1, 2005, Code of Federal Regulations, Title 40, Part 312 "Standards and Practices for All Appropriate Inquiries; Final Rule".

Figures



Reference: EDR Topographic Map
Target Quad
Name: Alberhill
Map Year: 1997
Series: 7.5
Scale 1:24000
Lat/Long: 33.7361 / 117.415

SITE BOUNDARY

Figure 1
Site Location Map

Proposed Alberhill Substation
Lake Elsinore, California

RUBICON
Engineering Corporation

SITE BOUNDARY

HORSE RANCH

Septic Tanks

Water Well

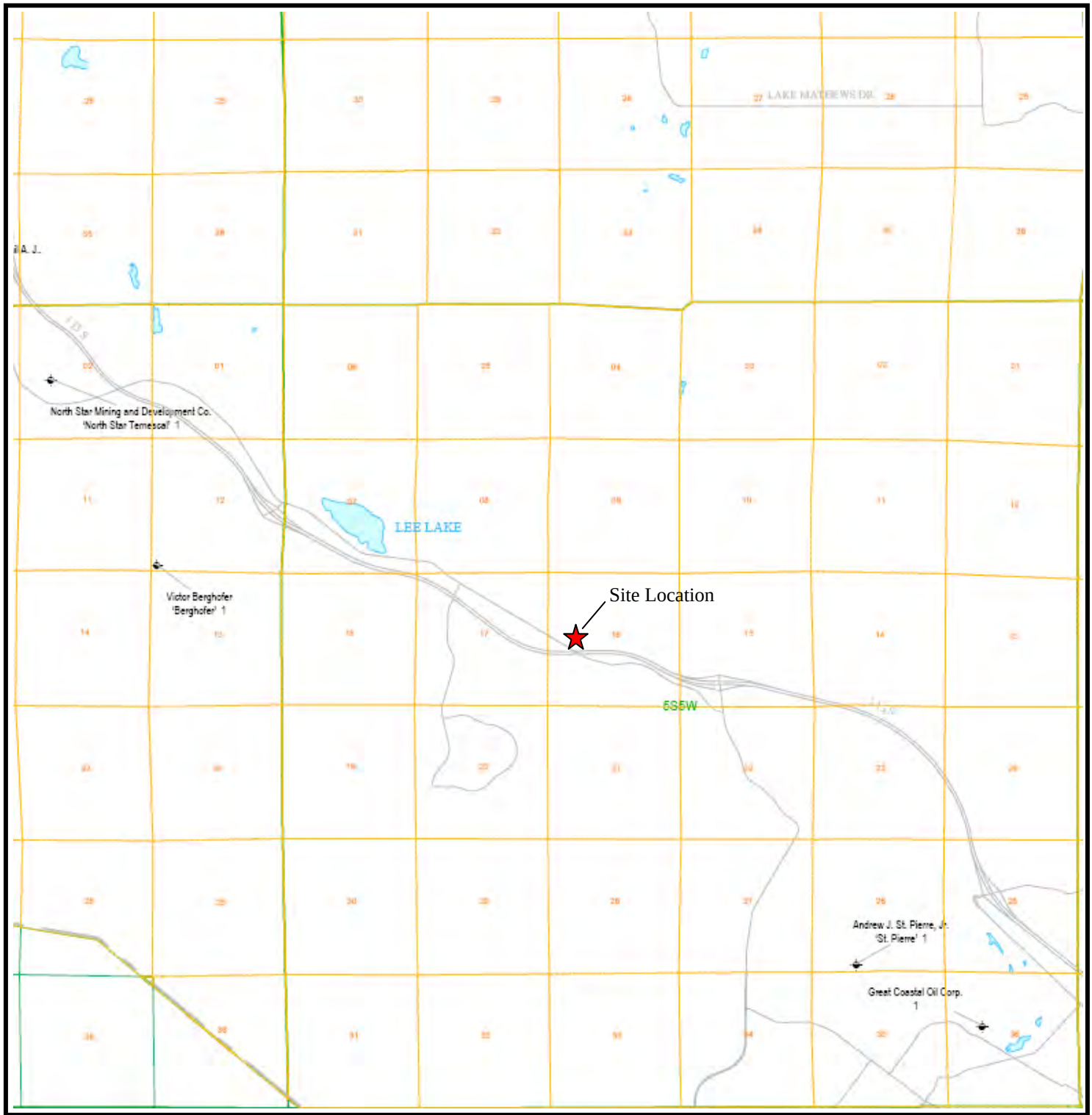
Reference: Yahoo Map
Not to Scale

N

Figure 2
Site and Vicinity Map

Proposed Alberhill Substation
Lake Elsinore, California

RUBICON
Engineering Corporation



0 1 2 Miles

Approximate Scale

N

Figure 3
DOGGR Map

Proposed Alberhill Substation
Lake Elsinore, California

REFERENCE:
DIVISION OF OIL AND GAS AND GEOTHERMAL RESOURCES WEBSITE
ftp://ftp.consrv.ca.gov/pub/oil/maps/dist1/w1-4/Mapw1-4.pdf
WILDCAT MAP W1-4

RUBICON
Engineering Corporation

Appendix A

Historical Topographic Maps

Proposed Alberhill Substation
14116 Temescal Canyon Rd.
Lake Elsinore, CA 92530

Inquiry Number: 2587181.10
September 11, 2009

The EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

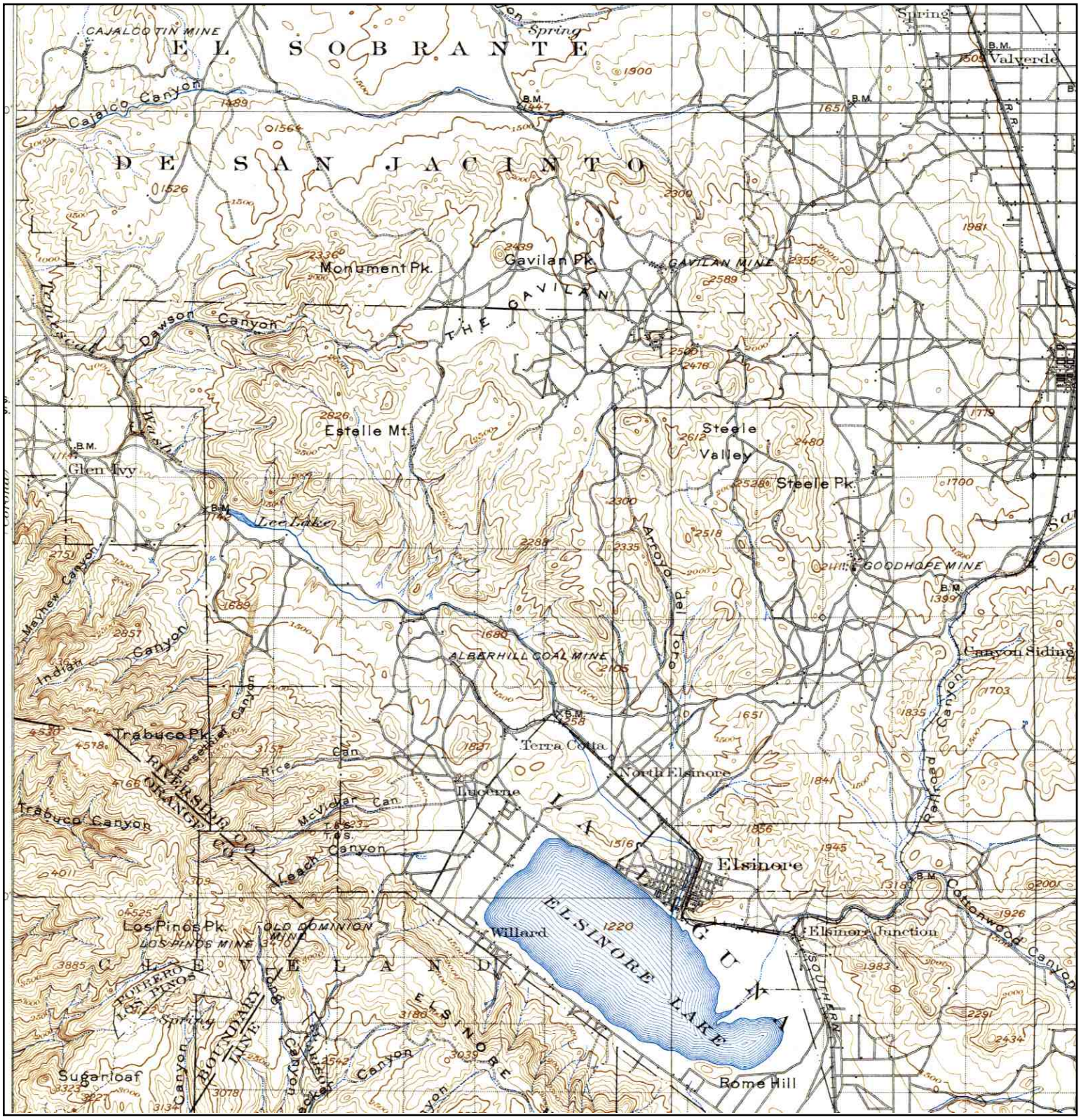
440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



N	TARGET QUAD NAME: ELSINORE MAP YEAR: 1901 SERIES: 30 SCALE: 1:125000	SITE NAME: Proposed Alberhill Substation ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore, CA 92530 LAT/LONG: 33.7361 / 117.415	CLIENT: Rubicon Engineering Corporation CONTACT: Peter Lee INQUIRY#: 2587181.10 RESEARCH DATE: 09/11/2009

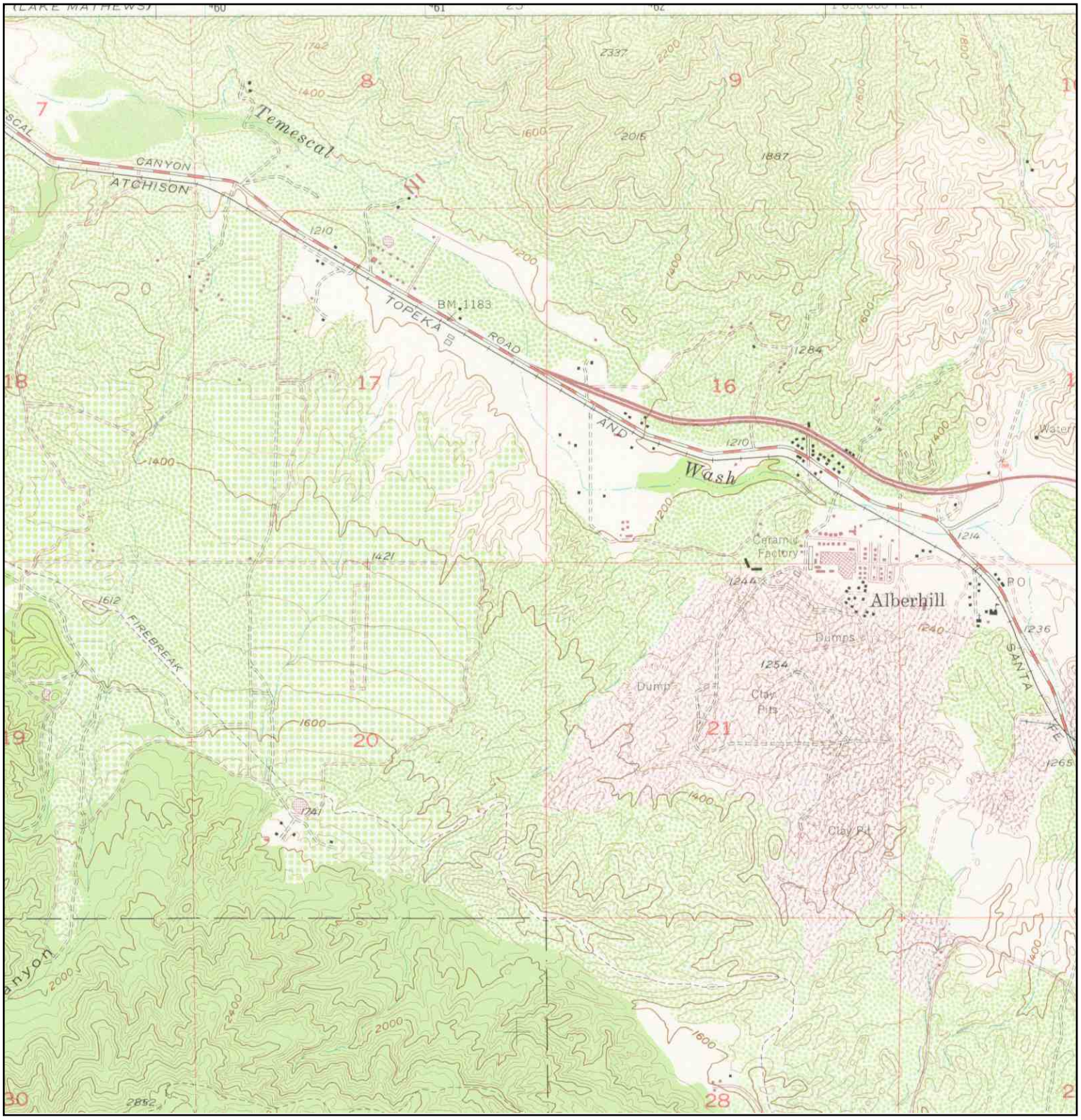
Historical Topographic Map

N	TARGET QUAD NAME: SOUTHERN CA SHEET 1 MAP YEAR: 1901 SERIES: 60 SCALE: 1:250000	SITE NAME: Proposed Alberhill Substation ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore, CA 92530 LAT/LONG: 33.7361 / 117.415	CLIENT: Rubicon Engineering Corporation CONTACT: Peter Lee INQUIRY#: 2587181.10 RESEARCH DATE: 09/11/2009

Historical Topographic Map

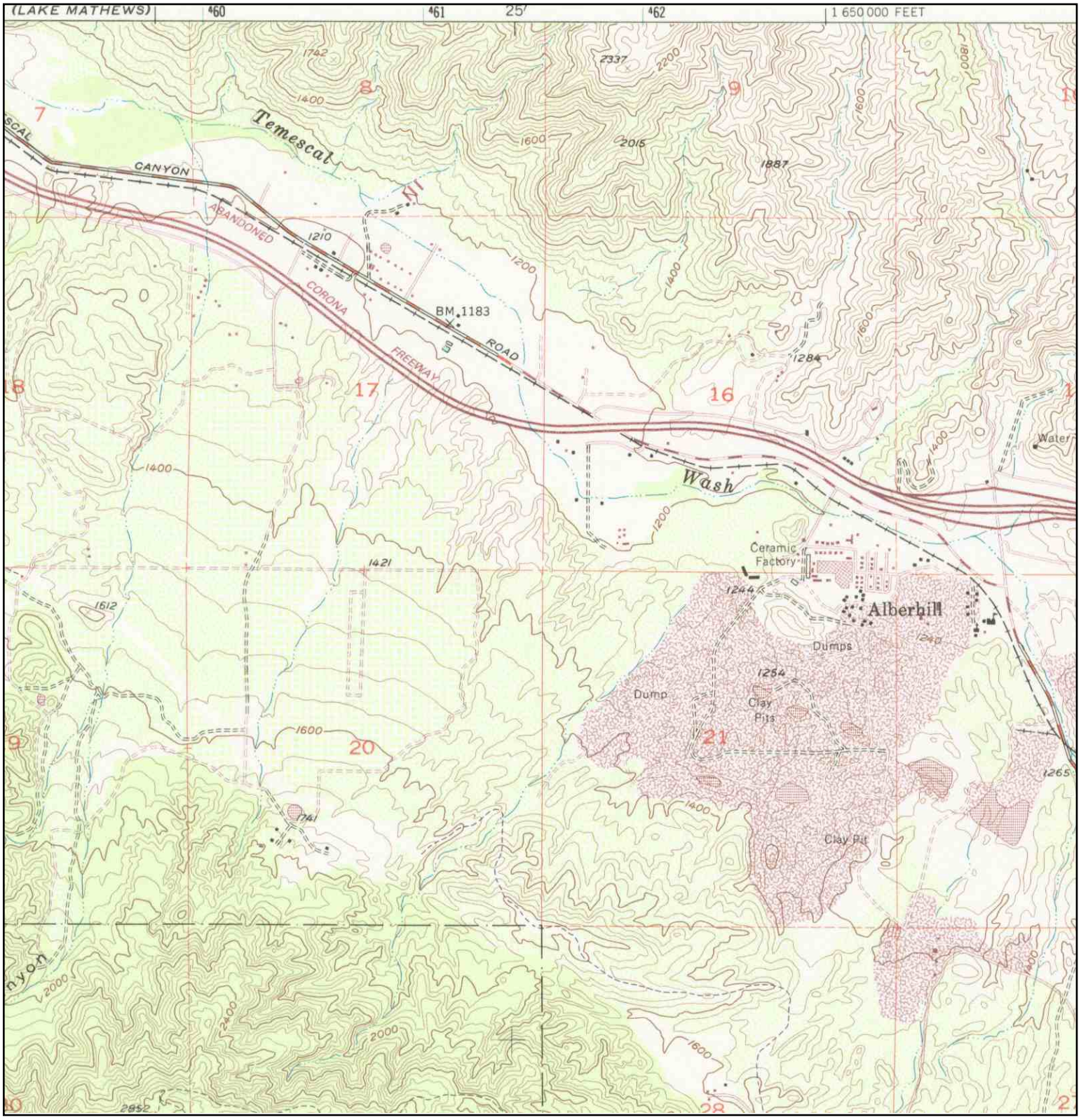
N	TARGET QUAD NAME: ALBERHILL MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Proposed Alberhill Substation ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore, CA 92530 LAT/LONG: 33.7361 / 117.415	CLIENT: Rubicon Engineering Corporation CONTACT: Peter Lee INQUIRY#: 2587181.10 RESEARCH DATE: 09/11/2009

Historical Topographic Map



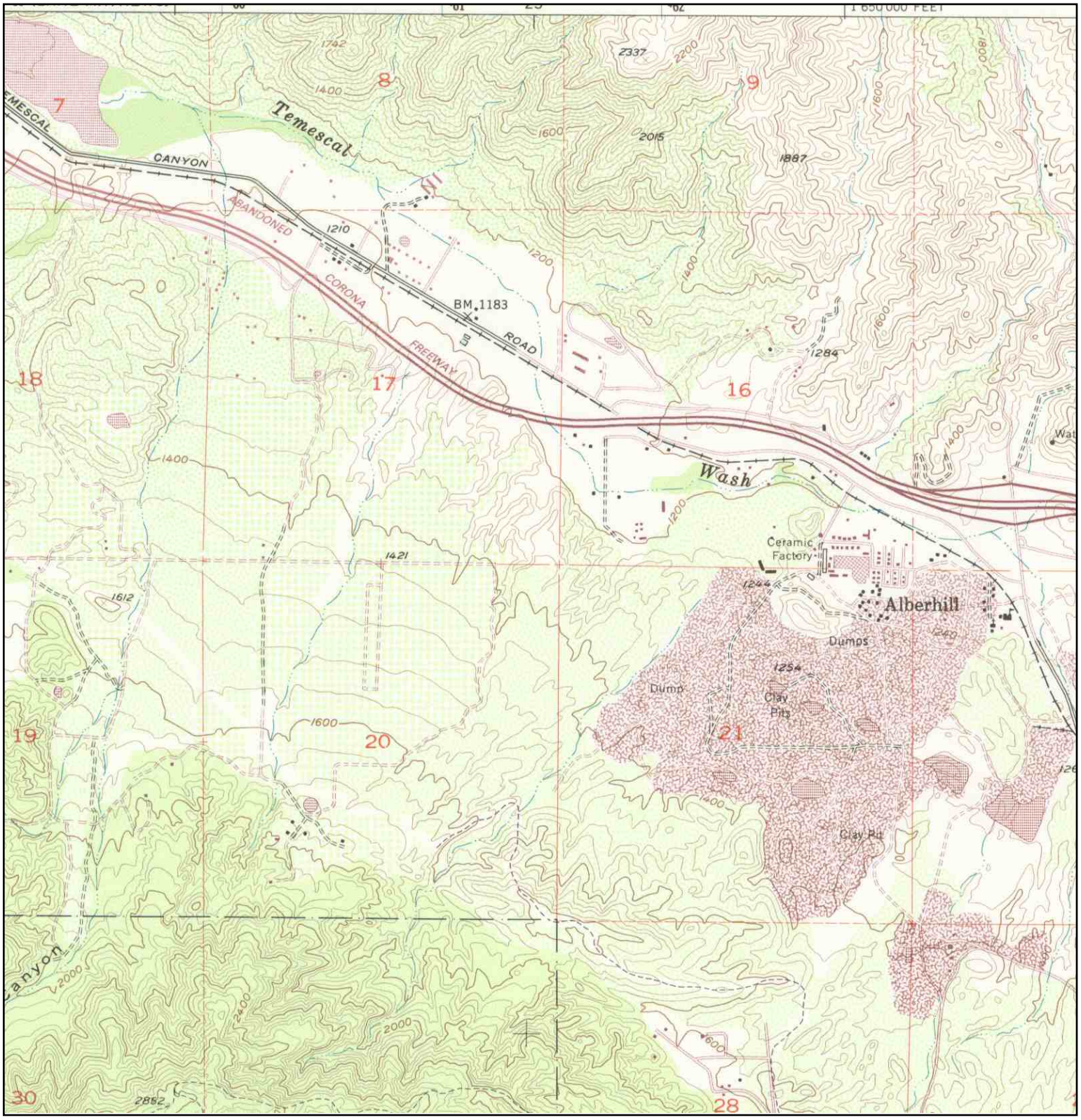
N	TARGET QUAD NAME: ALBERHILL MAP YEAR: 1973 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Proposed Alberhill Substation ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore, CA 92530 LAT/LONG: 33.7361 / 117.415	CLIENT: Rubicon Engineering Corporation CONTACT: Peter Lee INQUIRY#: 2587181.10 RESEARCH DATE: 09/11/2009

Historical Topographic Map



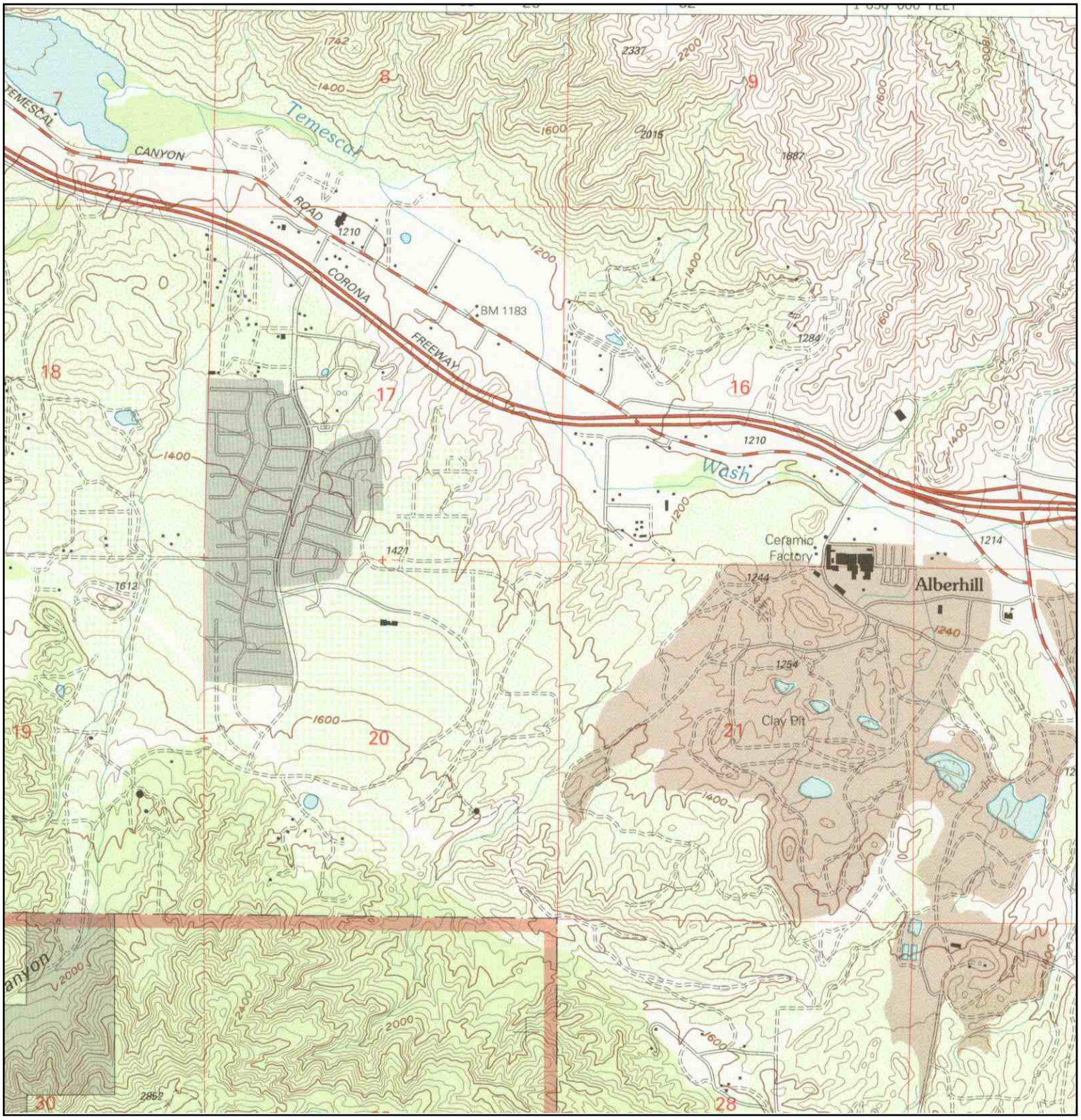
N	TARGET QUAD NAME: ALBERHILL MAP YEAR: 1982 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Proposed Alberhill Substation ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore, CA 92530 LAT/LONG: 33.7361 / 117.415	CLIENT: Rubicon Engineering Corporation CONTACT: Peter Lee INQUIRY#: 2587181.10 RESEARCH DATE: 09/11/2009

Historical Topographic Map



N	TARGET QUAD NAME: ALBERHILL MAP YEAR: 1988 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Proposed Alberhill Substation ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore, CA 92530 LAT/LONG: 33.7361 / 117.415	CLIENT: Rubicon Engineering Corporation CONTACT: Peter Lee INQUIRY#: 2587181.10 RESEARCH DATE: 09/11/2009

Historical Topographic Map



N	TARGET QUAD NAME: ALBERHILL MAP YEAR: 1997 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Proposed Alberhill Substation ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore, CA 92530 LAT/LONG: 33.7361 / 117.415	CLIENT: Rubicon Engineering Corporation CONTACT: Peter Lee INQUIRY#: 2587181.10 RESEARCH DATE: 09/11/2009

Appendix B

Historical Aerial Photographs

Proposed Alberhill Substation
14116 Temescal Canyon Rd.
Lake Elsinore, CA 92530

Inquiry Number: 2587181.11
September 14, 2009

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography September 14, 2009

Target Property:

14116 Temescal Canyon Rd.

Lake Elsinore, CA 92530

Year	***Scale***	***Details***	***Source***
1938	Aerial Photograph. Scale: 1"=555'	Flight Year: 1938	Laval
1953	Aerial Photograph. Scale: 1"=555'	Flight Year: 1953	Pacific Air
1967	Aerial Photograph. Scale: 1"=555'	Flight Year: 1967	Western
1980	Aerial Photograph. Scale: 1"=600'	Flight Year: 1980	AMI
1990	Aerial Photograph. Scale: 1"=666'	Flight Year: 1990	USGS
1994	Aerial Photograph. Scale: 1"=666'	Flight Year: 1994	USGS
2002	Aerial Photograph. Scale: 1"=666'	Flight Year: 2002	USGS
2005	Aerial Photograph. 1" = 604'	Flight Year: 2005	EDR


INQUIRY #: 2587181.11
YEAR: 1938
= 555'
N


INQUIRY #: 2587181.11
YEAR: 1953
= 555'
N


INQUIRY #: 2587181.11
YEAR: 1967
= 555'
N


INQUIRY #: 2587181.11
YEAR: 1980
= 600'
N


INQUIRY #: 2587181.11
YEAR: 1990
= 666'
N


INQUIRY #: 2587181.11
YEAR: 1994
= 666'
N


INQUIRY #: 2587181.11
YEAR: 2002
= 666'
N


INQUIRY #: 2587181.11
YEAR: 2005
= 604'
N

Appendix C

EDR Reports

RUBICON
Engineering Corporation

Proposed Alberhill Substation
14116 Temescal Canyon Rd.
Lake Elsinore, CA 92530

Inquiry Number: 2587181.8s
September 10, 2009

The EDR Radius Map™ Report with GeoCheck®

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440 Wheelers Farms Road
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Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

14116 TEMESCAL CANYON RD.
LAKE ELSINORE, CA 92530

COORDINATES

Latitude (North):	33.736100 - 33° 44' 10.0''
Longitude (West):	117.415100 - 117° 24' 54.4''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	461547.3
UTM Y (Meters):	3732779.8
Elevation:	1183 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	33117-F4 ALBERHILL, CA
Most Recent Revision:	1988
North Map:	33117-G4 LAKE MATHEWS, CA
Most Recent Revision:	1988

AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year:	2005
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL---------- National Priority List

EXECUTIVE SUMMARY

Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System

Federal 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 - Transporters, 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

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ---------- EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

LUST ---------- Geotracker's Leaking Underground Fuel Tank Report
SLIC ---------- Statewide SLIC Cases
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

EXECUTIVE SUMMARY

State and tribal registered storage tank lists

UST ---------- Active UST Facilities
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

VCP ---------- Voluntary Cleanup Program Properties
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
WMUDS/SWAT ---------- Waste Management Unit Database
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---------- Clandestine Drug Labs
HIST Cal-Sites ---------- Historical Calsites Database
SCH ---------- School Property Evaluation Program
Toxic Pits ---------- Toxic Pits Cleanup Act Sites
CDL ---------- Clandestine Drug Labs
US HIST CDL ---------- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ---------- Facility Inventory Database
HIST UST ---------- Hazardous Substance Storage Container Database
SWEEPS UST ---------- SWEEPS UST Listing

Local Land Records

LIENS 2 ---------- CERCLA Lien Information
LUCIS ---------- Land Use Control Information System
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

Other Ascertainable Records

RCRA-NonGen RCRA - Non Generators
DOT OPS Incident and Accident Data
DOD Department of Defense Sites
FUDS Formerly Used Defense Sites
CONSENT Superfund (CERCLA) Consent Decrees
ROD Records Of Decision
UMTRA Uranium Mill Tailings Sites
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
CA BOND EXP. PLAN Bond Expenditure Plan
NPDES NPDES Permits Listing
CA WDS Waste Discharge System
Cortese "Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE Hazardous Waste & Substance Site List
Notify 65 Proposition 65 Records
DRYCLEANERS Cleaner Facilities
WIP Well Investigation Program Case List
HAZNET Facility and Manifest Data
EMI Emissions Inventory Data
INDIAN RESERV Indian Reservations
SCRD DRYCLEANERS State Coalition for Remediation of Drycleaners Listing
PCB TRANSFORMER PCB Transformer Registration Database

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants EDR Proprietary Manufactured Gas Plants
EDR Historical Auto Stations EDR Proprietary Historic Gas Stations
EDR Historical Cleaners EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

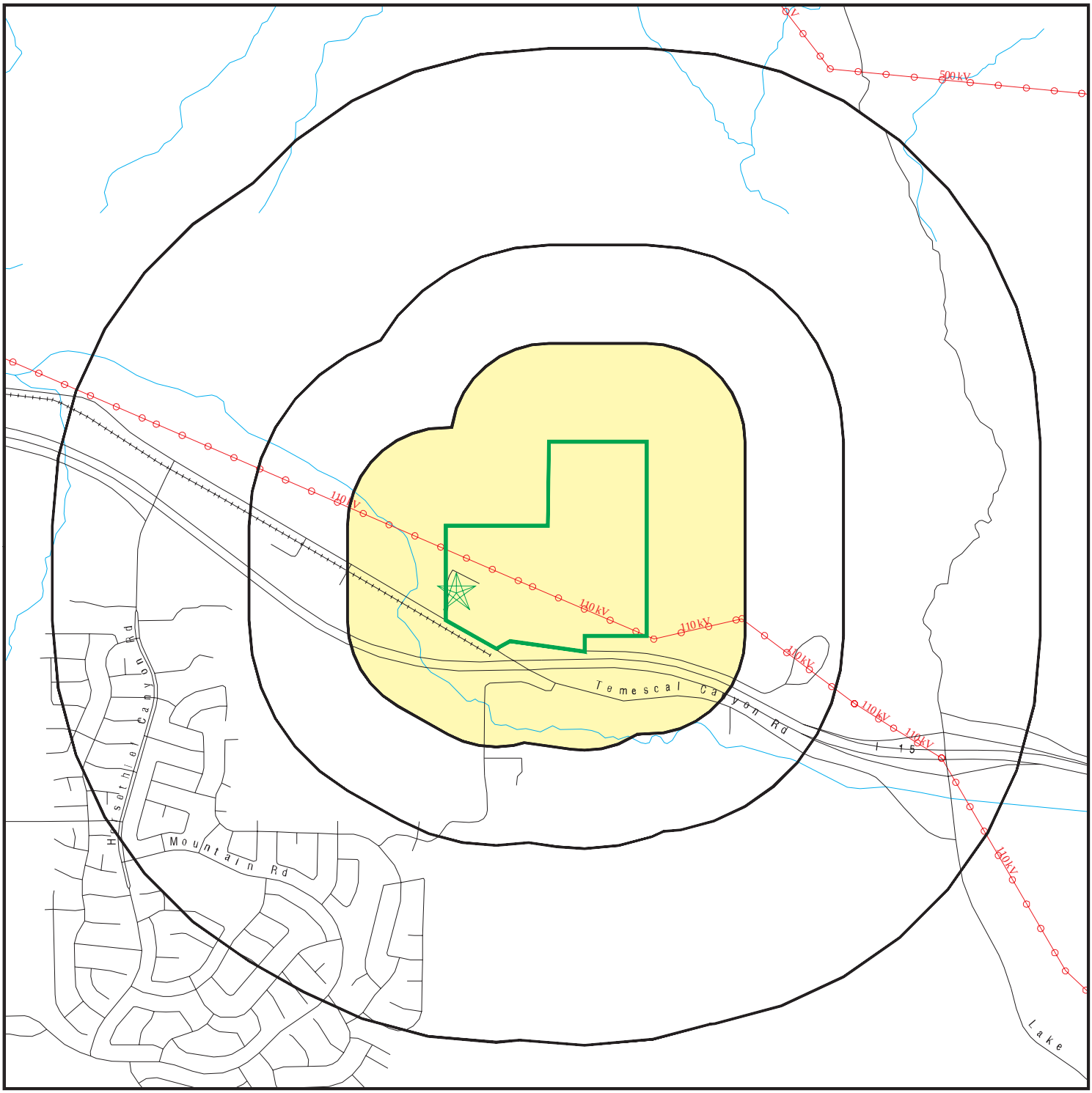
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
TRACT NO 28214 1 ALBERHILL RANCH L	NPDES
ALBERHILL RIDGE	NPDES
ALBERHILL RNCH TRACT MAP 28214	NPDES
LOS PINOS CONSERVATION CAMP	UST
PROPOSED SUMMERLY SCHOOL SITE	SCH, ENVIROSTOR
ALBERHILL RANCH ELEMENTARY SCHOOL	SCH, ENVIROSTOR

OVERVIEW MAP - 2587181.8s



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

Power transmission lines

Oil & Gas pipelines

100-year flood zone

500-year flood zone

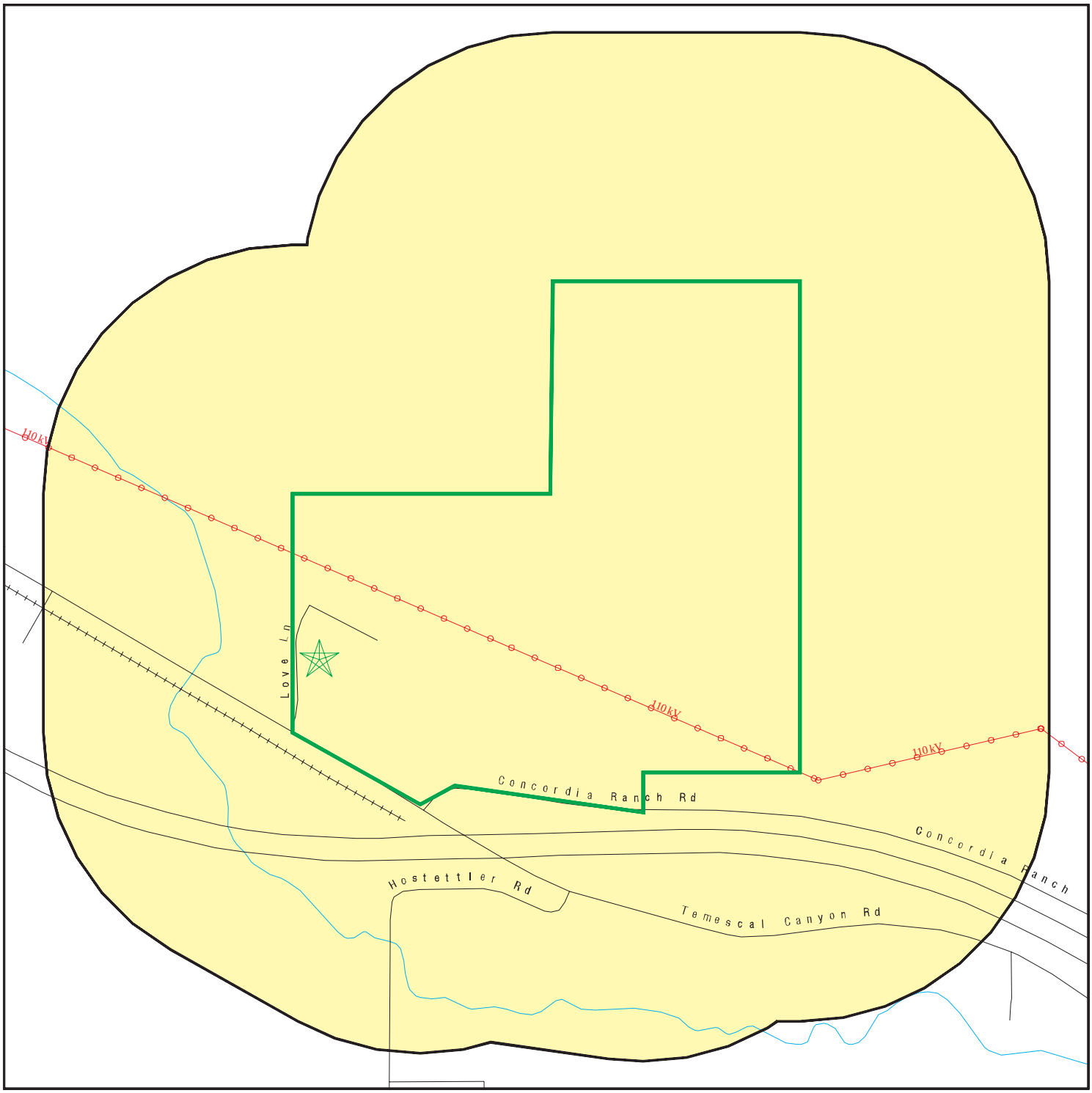
Areas of Concern

N

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:	Proposed Alberhill Substation	CLIENT:	Rubicon Engineering Corporation
ADDRESS:	14116 Temescal Canyon Rd. Lake Elsinore CA 92530	CONTACT:	Peter Lee
LAT/LONG:	33.7361 / 117.4151	INQUIRY #:	2587181.8s
		DATE:	September 10, 2009 5:38 pm

DETAIL MAP - 2587181.8s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Proposed Alberhill Substation	CLIENT: Rubicon Engineering Corporation
ADDRESS: 14116 Temescal Canyon Rd. Lake Elsinore CA 92530	CONTACT: Peter Lee
LAT/LONG: 33.7361 / 117.4151	INQUIRY #: 2587181.8s
	DATE: September 10, 2009 5:38 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 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 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
Federal ERNS list								
ERNS		TP	NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE		1.000	0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR		1.000	0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF		0.500	0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST		0.500	0	0	0	NR	NR	0
SLIC		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
State and tribal registered storage tank lists								
UST		0.250	0	0	NR	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP		0.500	0	0	0	NR	NR	0
INDIAN VCP		0.500	0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
SWRCY		0.500	0	0	0	NR	NR	0
HAULERS		TP	NR	NR	NR	NR	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL		TP	NR	NR	NR	NR	NR	0
HIST Cal-Sites		1.000	0	0	0	0	NR	0
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
US HIST CDL		TP	NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	0	NR	NR	NR	0
SWEEPS UST		0.250	0	0	NR	NR	NR	0
Local Land Records								
LIENS 2		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	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
MCS		TP	NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
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
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
CA BOND EXP. PLAN		1.000	0	0	0	0	NR	0
NPDES		TP	NR	NR	NR	NR	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
Cortese		0.500	0	0	0	NR	NR	0
HIST CORTESE		0.500	0	0	0	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
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
PCB TRANSFORMER		TP	NR	NR	NR	NR	NR	0

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants	1.000	0	0	0	0	NR	0
EDR Historical Auto Stations	0.250	0	0	NR	NR	NR	0
EDR Historical Cleaners	0.250	0	0	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LAKE ELSINORE	S109422420	PROPOSED SUMMERLY SCHOOL SITE	NE CORNER OF DIAMOND DRIVE / S	92530	SCH, ENVIROSTOR
LAKE ELSINORE	S109462642	TRACT NO 28214 1 ALBERHILL RANCH L	NEC LAKE ST / MOUNTAIN ST	92530	NPDES
LAKE ELSINORE	S109435650	ALBERHILL RIDGE	NEC LAKE ST / FUTURE NICHOLS	92530	NPDES
LAKE ELSINORE	S108054400	ALBERHILL RANCH ELEMENTARY SCHOOL	NICHOLS ROAD/LAKE STREET	92530	SCH, ENVIROSTOR
LAKE ELSINORE	S109435651	ALBERHILL RNCH TRACT MAP 28214	WEST OF 15 FREEWAY / SW OF N	92530	NPDES
LAKE ELSINORE	U004050576	LOS PINOS CONSERVATION CAMP	32951 ORTEGA HWY	92530	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: 02/02/2009
Date Data Arrived at EDR: 02/12/2009
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 46

Source: EPA
Telephone: N/A
Last EDR Contact: 09/10/2009
Next Scheduled EDR Contact: 10/26/2009
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: 04/23/2009
Date Data Arrived at EDR: 04/28/2009
Date Made Active in Reports: 05/19/2009
Number of Days to Update: 21

Source: EPA
Telephone: N/A
Last EDR Contact: 09/10/2009
Next Scheduled EDR Contact: 10/26/2009
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: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 02/02/2009
Date Data Arrived at EDR: 02/12/2009
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 46

Source: EPA
Telephone: N/A
Last EDR Contact: 09/10/2009
Next Scheduled EDR Contact: 10/26/2009
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: 01/09/2009
Date Data Arrived at EDR: 01/30/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 101

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/10/2009
Next Scheduled EDR Contact: 10/12/2009
Data Release Frequency: Quarterly

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: 12/03/2007
Date Data Arrived at EDR: 12/06/2007
Date Made Active in Reports: 02/20/2008
Number of Days to Update: 76

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/09/2009
Next Scheduled EDR Contact: 12/14/2009
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: 03/25/2009
Date Data Arrived at EDR: 04/02/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 39

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Transporters, 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: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/02/2009
Next Scheduled EDR Contact: 10/19/2009
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: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/02/2009
Next Scheduled EDR Contact: 10/19/2009
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: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/02/2009
Next Scheduled EDR Contact: 10/19/2009
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: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/02/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/31/2009
Date Data Arrived at EDR: 04/22/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
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: 03/31/2009
Date Data Arrived at EDR: 04/22/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 01/30/2009
Date Made Active in Reports: 05/19/2009
Number of Days to Update: 109

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 08/26/2009
Next Scheduled EDR Contact: 10/19/2009
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: 05/27/2009
Date Data Arrived at EDR: 05/27/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 19

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
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: 05/27/2009
Date Data Arrived at EDR: 05/27/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 19

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
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: 07/29/2009
Date Data Arrived at EDR: 07/31/2009
Date Made Active in Reports: 08/20/2009
Number of Days to Update: 20

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 09/04/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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: 07/13/2009
Next Scheduled EDR Contact: 10/12/2009
Data Release Frequency: No Update Planned

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: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
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: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 07/06/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Quarterly

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: 08/10/2009
Next Scheduled EDR Contact: 11/09/2009
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: 06/22/2009
Next Scheduled EDR Contact: 09/21/2009
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: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Quarterly

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: 08/03/2009
Next Scheduled EDR Contact: 11/02/2009
Data Release Frequency: Varies

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: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/09/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 14

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 07/09/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Quarterly

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/09/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 14

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 07/09/2009
Next Scheduled EDR Contact: 10/05/2009
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: 08/17/2009
Next Scheduled EDR Contact: 11/16/2008
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: 07/06/2009
Next Scheduled EDR Contact: 10/05/2009
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: 08/10/2009
Next Scheduled EDR Contact: 11/09/2009
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: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
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: 06/28/2009
Next Scheduled EDR Contact: 09/28/2009
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: 06/28/2009
Next Scheduled EDR Contact: 09/28/2009
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: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
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: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 06/28/2009
Next Scheduled EDR Contact: 09/28/2009
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: 08/26/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: 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: 12/15/2008
Date Data Arrived at EDR: 12/16/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 90

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 03/24/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 28

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/21/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 06/04/2009
Date Data Arrived at EDR: 06/05/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 12
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 06/01/2009
Date Data Arrived at EDR: 06/03/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 14
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 02/24/2009
Date Data Arrived at EDR: 03/03/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 63
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/20/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 9
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/09/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 15
Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 07/09/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 02/01/2009
Date Data Arrived at EDR: 06/10/2009
Date Made Active in Reports: 07/20/2009
Number of Days to Update: 40
Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 07/27/2009
Next Scheduled EDR Contact: 10/26/2009
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: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 02/24/2009
Date Data Arrived at EDR: 03/03/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 09/08/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 10/16/2008
Number of Days to Update: 27

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/20/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 9

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 04/01/2008
Date Data Arrived at EDR: 12/30/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 76

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/21/2009
Next Scheduled EDR Contact: 11/16/2009
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: 06/01/2009
Date Data Arrived at EDR: 06/03/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 14

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 06/04/2009
Date Data Arrived at EDR: 06/05/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 12

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 12/15/2008
Date Data Arrived at EDR: 12/16/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 90

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

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: 04/02/2008
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 1
Telephone: 617-918-1102
Last EDR Contact: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
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: 05/27/2009
Date Data Arrived at EDR: 05/27/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 19

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 10/01/2008
Date Data Arrived at EDR: 11/14/2008
Date Made Active in Reports: 12/23/2008
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 07/14/2009
Next Scheduled EDR Contact: 10/12/2009
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: 03/25/2008
Date Data Arrived at EDR: 04/17/2008
Date Made Active in Reports: 05/15/2008
Number of Days to Update: 28

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 07/13/2009
Next Scheduled EDR Contact: 09/21/2009
Data Release Frequency: Varies

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Quarterly

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 07/06/2009
Date Data Arrived at EDR: 07/24/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 10

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 07/09/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/28/2009
Date Data Arrived at EDR: 05/29/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 17
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 09/08/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/26/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 10/31/2008
Date Made Active in Reports: 12/23/2008
Number of Days to Update: 53
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/26/2009
Next Scheduled EDR Contact: 06/22/2009
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: 05/27/2009
Date Data Arrived at EDR: 05/27/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 19
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2009
Date Data Arrived at EDR: 07/23/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 11

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 06/22/2009
Date Data Arrived at EDR: 06/22/2009
Date Made Active in Reports: 07/20/2009
Number of Days to Update: 28

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 06/21/2009
Next Scheduled EDR Contact: 09/21/2009
Data Release Frequency: Varies

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: 05/29/2009
Date Data Arrived at EDR: 06/03/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 09/08/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/13/2009
Date Data Arrived at EDR: 08/14/2009
Date Made Active in Reports: 08/20/2009
Number of Days to Update: 6

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/03/2009
Next Scheduled EDR Contact: 11/02/2009
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/29/2009
Date Data Arrived at EDR: 07/01/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 22

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/30/2009
Next Scheduled EDR Contact: 09/28/2009
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: 03/31/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 43

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/16/2009
Next Scheduled EDR Contact: 10/12/2009
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: 12/31/2007
Date Data Arrived at EDR: 05/09/2008
Date Made Active in Reports: 06/20/2008
Number of Days to Update: 42

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 08/18/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/09/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 14

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 07/09/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 07/07/2009
Date Data Arrived at EDR: 07/09/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 14

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 07/09/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 11/12/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 118

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/02/2009
Next Scheduled EDR Contact: 10/19/2009
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: 05/14/2008
Date Data Arrived at EDR: 05/28/2008
Date Made Active in Reports: 08/08/2008
Number of Days to Update: 72

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
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: 703-692-8801
Last EDR Contact: 05/08/2009
Next Scheduled EDR Contact: 08/03/2009
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 09/05/2008
Date Made Active in Reports: 09/23/2008
Number of Days to Update: 18

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 07/01/2009
Next Scheduled EDR Contact: 09/28/2009
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: 01/27/2009
Date Data Arrived at EDR: 04/23/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 18

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/23/2009
Date Data Arrived at EDR: 04/28/2009
Date Made Active in Reports: 05/19/2009
Number of Days to Update: 21

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/10/2009
Next Scheduled EDR Contact: 09/28/2009
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: 01/05/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 05/08/2009
Number of Days to Update: 1

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 06/15/2009
Next Scheduled EDR Contact: 09/14/2009
Data Release Frequency: Varies

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: 02/19/2009
Date Data Arrived at EDR: 03/24/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 42

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/23/2009
Next Scheduled EDR Contact: 09/21/2009
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: 12/31/2007
Date Data Arrived at EDR: 04/09/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 06/16/2009
Next Scheduled EDR Contact: 09/14/2009
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: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 07/14/2009
Next Scheduled EDR Contact: 10/12/2009
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: 09/10/2009
Next Scheduled EDR Contact: 12/14/2009
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: 09/10/2009
Next Scheduled EDR Contact: 12/14/2009
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: 12/31/2006
Date Data Arrived at EDR: 03/14/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/14/2009
Next Scheduled EDR Contact: 10/12/2009
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: 03/20/2009
Date Data Arrived at EDR: 03/20/2009
Date Made Active in Reports: 05/05/2009
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/13/2009
Next Scheduled EDR Contact: 10/12/2009
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: 02/26/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 9

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 08/05/2009
Next Scheduled EDR Contact: 11/02/2009
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: 04/02/2009
Date Data Arrived at EDR: 04/24/2009
Date Made Active in Reports: 05/19/2009
Number of Days to Update: 25

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
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: 04/28/2009
Date Data Arrived at EDR: 04/29/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/28/2009
Next Scheduled EDR Contact: 10/26/2009
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: 04/28/2009
Date Data Arrived at EDR: 05/01/2009
Date Made Active in Reports: 05/19/2009
Number of Days to Update: 18

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

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: 12/31/2007
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 05/22/2009
Number of Days to Update: 92

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/09/2009
Next Scheduled EDR Contact: 12/07/2009
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

CA 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: 06/15/2009
Next Scheduled EDR Contact: 09/14/2009
Data Release Frequency: Quarterly

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 08/13/2009
Date Data Arrived at EDR: 08/14/2009
Date Made Active in Reports: 08/20/2009
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 09/04/2009
Next Scheduled EDR Contact: 12/07/2009
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). This listing is no longer updated by the state agency.

Date of Government Version: 07/21/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 07/21/2009
Next Scheduled EDR Contact: 10/19/2009
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].

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

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

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: 07/13/2009
Next Scheduled EDR Contact: 10/12/2009
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: 07/21/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
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: 07/21/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 02/17/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 50

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 05/08/2009
Next Scheduled EDR Contact: 08/03/2009
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: 12/31/2007
Date Data Arrived at EDR: 07/14/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 9

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 07/14/2009
Next Scheduled EDR Contact: 10/12/2009
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: 05/08/2009
Next Scheduled EDR Contact: 08/03/2009
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: 04/13/2009
Date Data Arrived at EDR: 04/14/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 09/08/2009
Next Scheduled EDR Contact: 11/09/2009
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: 05/08/2009
Next Scheduled EDR Contact: 08/03/2009
Data Release Frequency: N/A

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/21/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: 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 Historical Auto Stations: EDR Proprietary 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.

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 Historical Cleaners: EDR Proprietary 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.

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

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/20/2009
Date Data Arrived at EDR: 07/20/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 14

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/20/2009
Date Data Arrived at EDR: 07/20/2009
Date Made Active in Reports: 07/31/2009
Number of Days to Update: 11

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/27/2009
Date Data Arrived at EDR: 05/28/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 18

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/26/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Semi-Annually

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: 07/21/2009
Date Data Arrived at EDR: 07/23/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 11

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 08/03/2009
Next Scheduled EDR Contact: 11/02/2009
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 06/15/2009
Date Data Arrived at EDR: 06/15/2009
Date Made Active in Reports: 07/20/2009
Number of Days to Update: 35

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Quarterly

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: 12/31/1998
Date Data Arrived at EDR: 07/07/1999
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 07/13/2009
Next Scheduled EDR Contact: 10/12/2009
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 05/28/2009
Date Data Arrived at EDR: 08/13/2009
Date Made Active in Reports: 08/20/2009
Number of Days to Update: 7

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 08/10/2009
Next Scheduled EDR Contact: 11/09/2009
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 08/10/2009
Date Data Arrived at EDR: 08/17/2009
Date Made Active in Reports: 08/20/2009
Number of Days to Update: 3

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 08/10/2009
Next Scheduled EDR Contact: 11/09/2009
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: 09/08/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/11/2009
Date Data Arrived at EDR: 04/23/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 18

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 08/10/2009
Next Scheduled EDR Contact: 11/09/2009
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 08/10/2009
Date Data Arrived at EDR: 08/17/2009
Date Made Active in Reports: 08/27/2009
Number of Days to Update: 10

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 08/10/2009
Next Scheduled EDR Contact: 11/09/2009
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/12/2009
Date Data Arrived at EDR: 08/31/2009
Date Made Active in Reports: 09/04/2009
Number of Days to Update: 4

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 08/26/2009
Next Scheduled EDR Contact: 11/09/2009
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 08/04/2009
Date Data Arrived at EDR: 08/18/2009
Date Made Active in Reports: 08/27/2009
Number of Days to Update: 9

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 07/27/2009
Next Scheduled EDR Contact: 10/26/2009
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 07/09/2008
Date Data Arrived at EDR: 07/09/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/21/2009
Next Scheduled EDR Contact: 09/21/2009
Data Release Frequency: Semi-Annually

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: 06/22/2009
Next Scheduled EDR Contact: 09/21/2009
Data Release Frequency: Annually

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/06/2009
Date Data Arrived at EDR: 06/09/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 6
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/28/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 03/02/2009
Date Data Arrived at EDR: 03/27/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 12
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/05/2009
Date Data Arrived at EDR: 08/31/2009
Date Made Active in Reports: 09/04/2009
Number of Days to Update: 4
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/15/2009
Date Data Arrived at EDR: 07/16/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 7
Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 06/28/2009
Next Scheduled EDR Contact: 09/28/2009
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: 04/14/2009
Date Data Arrived at EDR: 04/15/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 26
Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 07/27/2009
Next Scheduled EDR Contact: 10/12/2009
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 05/06/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 05/14/2009
Number of Days to Update: 7
Source: Health Services Agency
Telephone: 951-358-5055
Last EDR Contact: 07/27/2009
Next Scheduled EDR Contact: 10/12/2009
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: 06/04/2009
Date Data Arrived at EDR: 07/28/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 6

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/28/2009
Next Scheduled EDR Contact: 10/26/2009
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: 06/04/2009
Date Data Arrived at EDR: 07/28/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 6

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/28/2009
Next Scheduled EDR Contact: 10/26/2009
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: 06/29/2009
Date Data Arrived at EDR: 07/01/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 22

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
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: 07/16/2008
Date Data Arrived at EDR: 10/29/2008
Date Made Active in Reports: 11/26/2008
Number of Days to Update: 28

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 07/02/2009
Next Scheduled EDR Contact: 09/28/2009
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 11/01/2008
Date Data Arrived at EDR: 12/23/2008
Date Made Active in Reports: 01/27/2009
Number of Days to Update: 35

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 08/17/2009
Next Scheduled EDR Contact: 11/16/2009
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: 06/16/2009
Date Data Arrived at EDR: 07/01/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 22

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 07/01/2009
Next Scheduled EDR Contact: 09/28/2009
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Quarterly

Underground Storage Tank Information

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: 10/01/2008
Number of Days to Update: 12

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
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: 08/21/2009
Date Data Arrived at EDR: 08/21/2009
Date Made Active in Reports: 08/27/2009
Number of Days to Update: 6

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 07/13/2009
Next Scheduled EDR Contact: 10/12/2009
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/27/2009
Date Data Arrived at EDR: 07/28/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 6

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 07/06/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Annually

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 04/07/2009
Date Data Arrived at EDR: 04/07/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 34

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 07/06/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

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: 05/29/2009
Date Data Arrived at EDR: 06/01/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 14
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 06/22/2009
Next Scheduled EDR Contact: 09/21/2009
Data Release Frequency: Varies

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 06/01/2009
Date Data Arrived at EDR: 06/01/2009
Date Made Active in Reports: 06/15/2009
Number of Days to Update: 14
Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 07/01/2009
Date Data Arrived at EDR: 07/07/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 16
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/22/2009
Next Scheduled EDR Contact: 09/21/2009
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 07/01/2009
Date Data Arrived at EDR: 07/10/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 14
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/22/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/20/2009
Date Data Arrived at EDR: 07/20/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 14
Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 07/20/2009
Next Scheduled EDR Contact: 10/19/2009
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 04/01/2009
Date Data Arrived at EDR: 04/02/2009
Date Made Active in Reports: 04/09/2009
Number of Days to Update: 7

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/29/2009
Next Scheduled EDR Contact: 09/28/2009
Data Release Frequency: Semi-Annually

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: 06/02/2009
Date Data Arrived at EDR: 06/15/2009
Date Made Active in Reports: 07/23/2009
Number of Days to Update: 38

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/04/2009
Next Scheduled EDR Contact: 12/07/2009
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: 08/01/2008
Date Data Arrived at EDR: 09/04/2008
Date Made Active in Reports: 09/18/2008
Number of Days to Update: 14

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/31/2009
Next Scheduled EDR Contact: 11/30/2009
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: 09/04/2009
Next Scheduled EDR Contact: 12/07/2009
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: 06/26/2009
Date Data Arrived at EDR: 07/09/2009
Date Made Active in Reports: 07/24/2009
Number of Days to Update: 15

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/09/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 04/21/2009
Date Data Arrived at EDR: 05/06/2009
Date Made Active in Reports: 05/14/2009
Number of Days to Update: 8

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 07/13/2009
Next Scheduled EDR Contact: 10/12/2009
Data Release Frequency: Annually

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: 12/31/2006
Date Data Arrived at EDR: 12/11/2008
Date Made Active in Reports: 03/19/2009
Number of Days to Update: 98

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 09/09/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 05/05/2009
Date Made Active in Reports: 05/22/2009
Number of Days to Update: 17

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 08/04/2009
Next Scheduled EDR Contact: 11/02/2009
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/22/2009
Date Data Arrived at EDR: 05/27/2009
Date Made Active in Reports: 07/01/2009
Number of Days to Update: 35

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/27/2009
Next Scheduled EDR Contact: 11/23/2009
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 09/11/2008
Date Made Active in Reports: 10/02/2008
Number of Days to Update: 21

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 09/08/2009
Next Scheduled EDR Contact: 12/07/2009
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 06/01/2009
Date Data Arrived at EDR: 06/12/2009
Date Made Active in Reports: 06/29/2009
Number of Days to Update: 17

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/15/2009
Next Scheduled EDR Contact: 09/14/2009
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 07/17/2009
Date Made Active in Reports: 08/10/2009
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 07/06/2009
Next Scheduled EDR Contact: 10/05/2009
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

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 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

PROPOSED ALBERHILL SUBSTATION
14116 TEMESCAL CANYON RD.
LAKE ELSINORE, CA 92530

TARGET PROPERTY COORDINATES

Latitude (North):	33.73610 - 33° 44' 10.0''
Longitude (West):	117.4151 - 117° 24' 54.4''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	461547.3
UTM Y (Meters):	3732779.8
Elevation:	1183 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	33117-F4 ALBERHILL, CA
Most Recent Revision:	1988
North Map:	33117-G4 LAKE MATHEWS, CA
Most Recent Revision:	1988

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 principle 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).

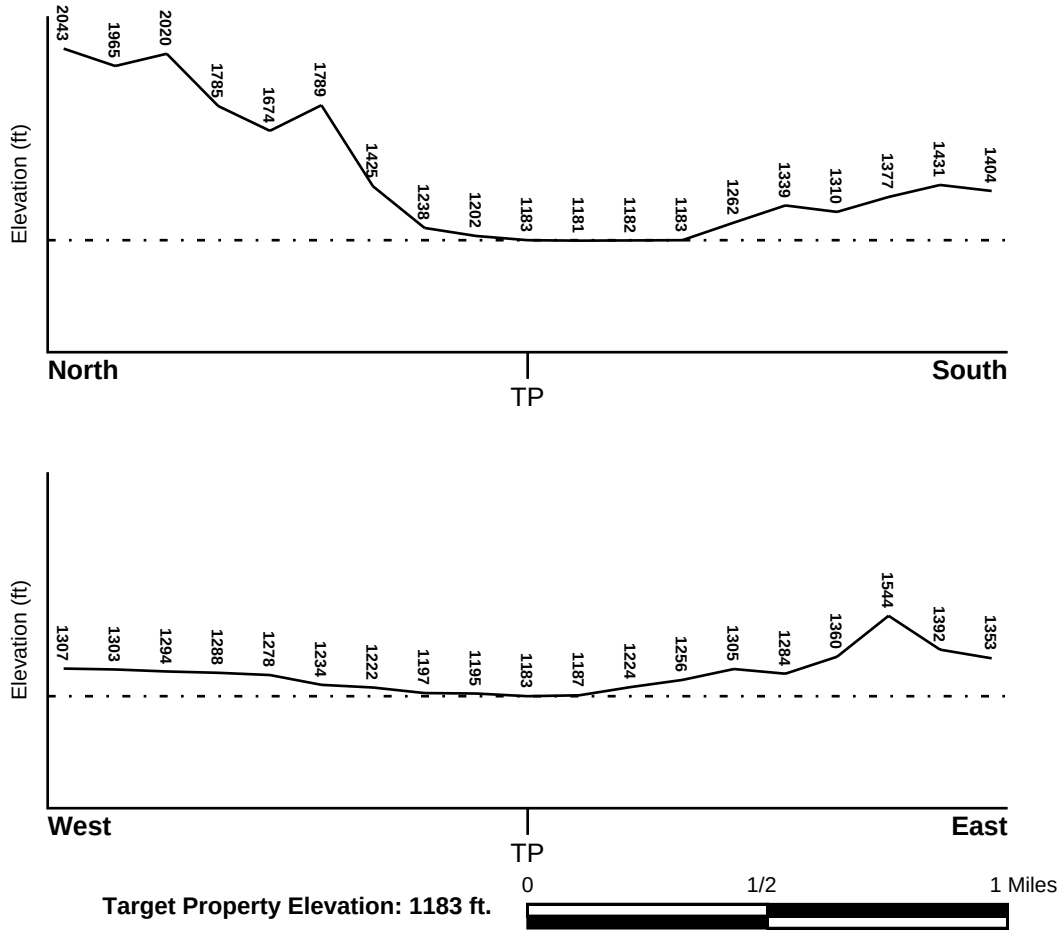
TOPOGRAPHIC INFORMATION

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 SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



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
RIVERSIDE, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0602452050B

Additional Panels in search area: 0602451395A

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ALBERHILL	Not Available

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		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

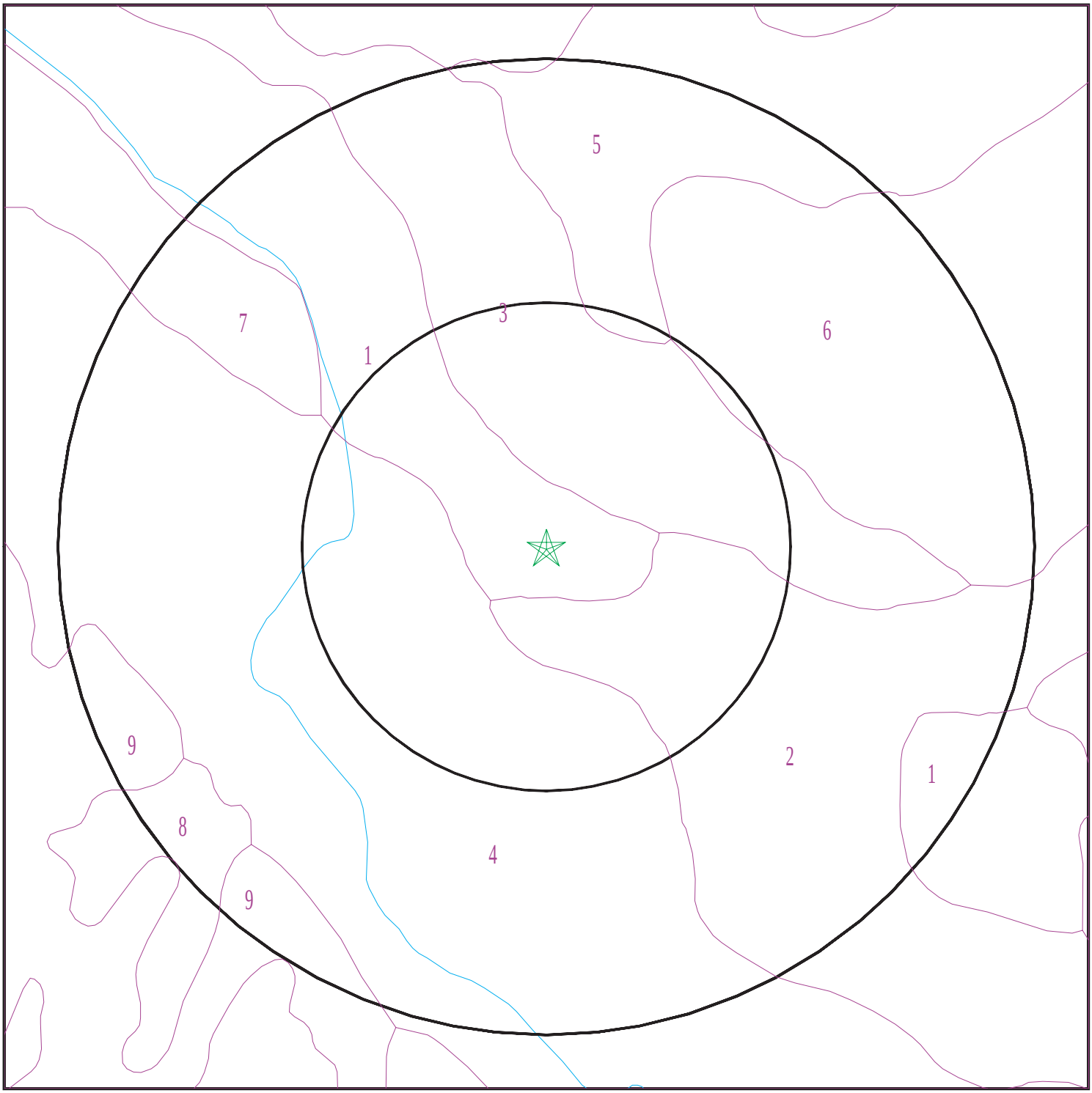
Era:	Mesozoic
System:	Lower Jurassic and Upper Triassic
Series:	Lower Mesozoic
Code:	lMze *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Eugeosynclinal Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 2587181.8s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Proposed Alberhill Substation	CLIENT:	Rubicon Engineering Corporation
ADDRESS:	14116 Temescal Canyon Rd.	CONTACT:	Peter Lee
	Lake Elsinore CA 92530	INQUIRY #:	2587181.8s
LAT/LONG:	33.7361 / 117.4151	DATE:	September 10, 2009 5:38 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: HONCUT

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	22 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 42 Min: 14	Max: 8.4 Min: 6.1
2	22 inches	59 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 42 Min: 14	Max: 8.4 Min: 6.1

Soil Map ID: 2

Soil Component Name: HONCUT

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	22 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.1
2	22 inches	59 inches	coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.1

Soil Map ID: 3

Soil Component Name: HONCUT

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	22 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.1
2	22 inches	59 inches	coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.1

Soil Map ID: 4

Soil Component Name: GORGONIO

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6
2	14 inches	59 inches	stratified gravelly loamy sand to gravelly loamy fine sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6

Soil Map ID: 5

Soil Component Name: HONCUT

Soil Surface Texture: cobbly coarse sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	22 inches	cobbly coarse sandy loam	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: 42 Min: 14	Max: 7.8 Min: 5.6
2	22 inches	59 inches	gravelly fine sandy loam	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: 42 Min: 14	Max: 7.8 Min: 5.6

Soil Map ID: 6

Soil Component Name: TEMESCAL

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 38 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	16 inches	20 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 7

Soil Component Name: HANFORD

Soil Surface Texture: coarse sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6
2	7 inches	40 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
3	40 inches	59 inches	stratified loamy sand to coarse sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6

Soil Map ID: 8

Soil Component Name: GORGONIO

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6
2	14 inches	59 inches	stratified gravelly loamy sand to gravelly loamy fine sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 5.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 9

Soil Component Name: Terrace escarpments

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

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
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

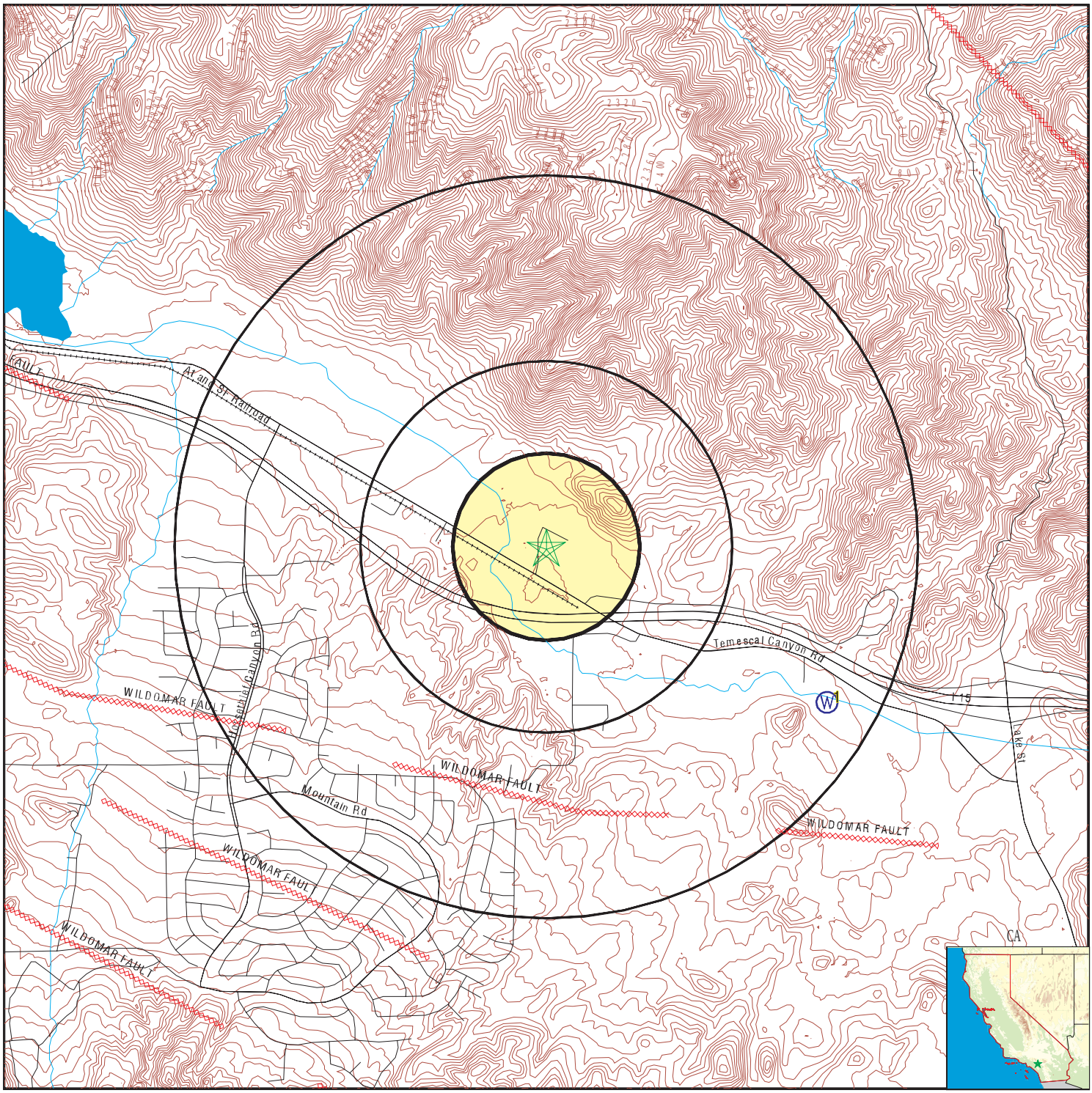
Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	5908	1/2 - 1 Mile ESE

PHYSICAL SETTING SOURCE MAP - 2587181.8s



0 1/4 1/2 1 Miles

- 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

N

SITE NAME:	Proposed Alberhill Substation	CLIENT:	Rubicon Engineering Corporation
ADDRESS:	14116 Temescal Canyon Rd. Lake Elsinore CA 92530	CONTACT:	Peter Lee
		INQUIRY #:	2587181.8s
LAT/LONG:	33.7361 / 117.4151	DATE:	September 10, 2009 5:38 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
ESE
1/2 - 1 Mile
Higher | **CA WELLS** | **5908**

Water System Information:

Prime Station Code:	05S/05W-16R01 S	User ID:	33C
FRDS Number:	3301485001	County:	Riverside
District Number:	63	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	334348.0 1172404.0	Precision:	100 Feet (one Second)
Source Name:	WELL 01 EAST		
System Number:	3301485		
System Name:	PACIFIC CLAY PRODUCTS		
Organization That Operates System:			
	Not Reported		
	LAKE ELSINORE, CA 92330		
Pop Served:	180	Connections:	1
Area Served:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for RIVERSIDE County: 2

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 RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

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 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LAKE ELSINORE	S109422420	PROPOSED SUMMERLY SCHOOL SITE	NE CORNER OF DIAMOND DRIVE / SUMMERLY PLACE	92530	SCH, ENVIROSTOR
LAKE ELSINORE	S109462642	TRACT NO 28214 1 ALBERHILL RANCH LTD	NEC LAKE ST / MOUNTAIN ST	92530	NPDES
LAKE ELSINORE	S109435650	ALBERHILL RIDGE	NEC LAKE ST / FUTURE NICHOLS RD	92530	NPDES
LAKE ELSINORE	S108054400	ALBERHILL RANCH ELEMENTARY SCHOOL	NICHOLS ROAD/LAKE STREET	92530	SCH, ENVIROSTOR
LAKE ELSINORE	S109435651	ALBERHILL RNCH TRACT MAP 28214	WEST OF 15 FREEWAY / SW OF NICHOLS RD	92530	NPDES
LAKE ELSINORE	U004050576	LOS PINOS CONSERVATION CAMP	32951 ORTEGA HWY	92530	UST

Site	Database(s)	EDR ID Number EPA ID Number
PROPOSED SUMMERLY SCHOOL SITE **NE CORNER OF DIAMOND DRIVE / SUMMERLY PLACE** **LAKE ELSINORE, CA 92530**	**SCH** **ENVIROSTOR**	**S109422420** **N/A**

SCH:

Facility ID:	60001035
Site Type:	School Investigation
Site Type Detail:	School
Acres:	12.9
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	IVY GUANO
Supervisor:	Shahir Haddad
Division Branch:	Cypress
Site Code:	404825-11
Assembly:	64, 66
Senate:	36, 37
Special Program Status:	Not reported
Status:	Inactive - Needs Evaluation
Status Date:	2009-03-23 00:00:00
Restricted Use:	NO
Funding:	School District
Latitude:	33.6418124107893
Longitude:	-117.304072380066
Alias Name:	371-270-004
Alias Type:	APN
Alias Name:	404825-11
Alias Type:	Project Code (Site Code)
Alias Name:	60001035
Alias Type:	Envirostor ID Number
Alias Name:	370-270-022
Alias Type:	APN
APN:	370-270-022, 371-270-004
APN Description:	Not reported
APN Description:	Not reported
Comments:	Not reported

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	2009-03-18 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	31001
Media Affected Desc:	Not reported

Management:

Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	UE

Site	Database(s)	EDR ID Number EPA ID Number
PROPOSED SUMMERLY SCHOOL SITE (Continued)		S109422420

Potenital Description: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: NONE

ENVIROSTOR:
Site Type: School Investigation
Site Type Detailed: School
Acres: 12.9
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: IVY GUANO
Supervisor: Shahir Haddad
Division Branch: Cypress
Facility ID: 60001035
Site Code: 404825-11
Assembly: 64, 66
Senate: 36, 37
Special Program: Not reported
Status: Inactive - Needs Evaluation
Status Date: 2009-03-23 00:00:00
Restricted Use: NO
Funding: School District
Latitude: 33.6418124107893
Longitude: -117.304072380066
Alias Name: 371-270-004
Alias Type: APN
Alias Name: 404825-11
Alias Type: Project Code (Site Code)
Alias Name: 60001035
Alias Type: Envirostor ID Number
Alias Name: 370-270-022
Alias Type: APN

APN: 370-270-022, 371-270-004
APN Description: Not reported
APN Description: Not reported
Comments: Not reported

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 2009-03-18 00:00:00

Confirmed: NONE SPECIFIED
Confirmed Description: Not reported
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Media Affected: 31001
Media Affected Desc: Not reported

Site	Database(s)	EDR ID Number EPA ID Number

PROPOSED SUMMERLY SCHOOL SITE (Continued) S109422420

Management:

Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	UE
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE

TRACT NO 28214 1 ALBERHILL RANCH LTD **NPDES** **S109462642**
NEC LAKE ST / MOUNTAIN ST **N/A**
LAKE ELSINORE, CA 92530

NPDES:

Npdes Number:	Not reported
Facility Status:	Active
Agency Id:	10474
Region:	8
Regulatory Measure Id:	296765
Order No:	99-08DWQ
Regulatory Measure Type:	Storm water construction
Place Id:	628544
WDID:	8 33C339387
Program Type:	CONSTW
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	2/5/2006 8:43:05 PM
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Castle & Cooke Alberhill Ranch Ltd
Discharge Address:	300 West Potrero Road
Discharge City:	Thousand Oaks
Discharge State:	CA
Discharge Zip:	91361

ALBERHILL RIDGE **NPDES** **S109435650**
NEC LAKE ST / FUTURE NICHOLS RD **N/A**
LAKE ELSINORE, CA 92530

NPDES:

Npdes Number:	Not reported
Facility Status:	Active
Agency Id:	459832
Region:	8
Regulatory Measure Id:	341671
Order No:	99-08DWQ
Regulatory Measure Type:	Storm water construction
Place Id:	714016
WDID:	8 33C351094
Program Type:	CONSTW
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	3/10/2008 3:21:39 PM
Expiration Date Of Regulatory Measure:	Not reported

Site	Database(s)	EDR ID Number EPA ID Number

ALBERHILL RIDGE (Continued) S109435650

Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Castle & Cooke Lake Elsinore W
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported

ALBERHILL RANCH ELEMENTARY SCHOOL **SCH S108054400**
NICHOLS ROAD/LAKE STREET **ENVIROSTOR N/A**
LAKE ELSINORE, CA 92530

SCH:

Facility ID:	60000306
Site Type:	School Investigation
Site Type Detail:	School
Acres:	10.29
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	ASLAM SHAREEF
Supervisor:	Tawfiq Deek
Division Branch:	Cypress
Site Code:	404708-11
Assembly:	66
Senate:	37
Special Program Status:	Not reported
Status:	Inactive - Action Required
Status Date:	2008-11-06 00:00:00
Restricted Use:	NO
Funding:	School District
Latitude:	33.7137
Longitude:	-117.3824
Alias Name:	60000306
Alias Type:	Envirostor ID Number
Alias Name:	404708-11
Alias Type:	Project Code (Site Code)
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Sampling results were submitted for DTSC's review.DTSC approved the PEA Report with a Further Action determination for the further investigation of methane detected on site.Signed agreement sent (FedEx to District).DTSC issued approval for the SSI Tech Memo

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	2006-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	2006-11-08 00:00:00
Completed Area Name:	PROJECT WIDE

Site	Database(s)	EDR ID Number EPA ID Number

ALBERHILL RANCH ELEMENTARY SCHOOL (Continued) S108054400

Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement
Completed Date: 2008-02-28 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 2008-10-14 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 2008-11-06 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 2007-08-23 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 2007-04-12 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 2007-11-01 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 2007-11-07 00:00:00

Confirmed: 30015
Confirmed Description: Methane
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Media Affected: 30015
Media Affected Desc: Not reported

Management:
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: SOIL
Potenital Description: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: MINE

ENVIROSTOR:
Site Type: School Investigation

Site	Database(s)	EDR ID Number EPA ID Number
ALBERHILL RANCH ELEMENTARY SCHOOL (Continued)		S108054400

Site Type Detailed: School
Acres: 10.29
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: ASLAM SHAREEF
Supervisor: Tawfiq Deek
Division Branch: Cypress
Facility ID: 60000306
Site Code: 404708-11
Assembly: 66
Senate: 37
Special Program: Not reported
Status: Inactive - Action Required
Status Date: 2008-11-06 00:00:00
Restricted Use: NO
Funding: School District
Latitude: 33.7137
Longitude: -117.3824
Alias Name: 60000306
Alias Type: Envirostor ID Number
Alias Name: 404708-11
Alias Type: Project Code (Site Code)

APN: NONE SPECIFIED
APN Description: Not reported
Comments: Sampling results were submitted for DTSC's review.DTSC approved the PEA Report with a Further Action determination for the further investigation of methane detected on site.Signed agreement sent (FedEx to District).DTSC issued approval for the SSI Tech Memo

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 2006-07-11 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 2006-11-08 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement
Completed Date: 2008-02-28 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 2008-10-14 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 2008-11-06 00:00:00

Site	Database(s)	EDR ID Number EPA ID Number

ALBERHILL RANCH ELEMENTARY SCHOOL (Continued) S108054400

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 2007-08-23 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 2007-04-12 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 2007-11-01 00:00:00

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 2007-11-07 00:00:00

Confirmed: 30015
Confirmed Description: Methane
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Media Affected: 30015
Media Affected Desc: Not reported

Management:
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: SOIL
Potenital Description: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: MINE

ALBERHILL RNCH TRACT MAP 28214 **NPDES S109435651**
WEST OF 15 FREEWAY / SW OF NICHOLS RD **N/A**
LAKE ELSINORE, CA 92530

NPDES:
Npdes Number: Not reported
Facility Status: Active
Agency Id: 10474
Region: 8
Regulatory Measure Id: 284423
Order No: 99-08DWQ
Regulatory Measure Type: Storm water construction
Place Id: 621940
WDID: 8 33C333722
Program Type: CONSTW
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 4/20/2005

Site	Database(s)	EDR ID Number EPA ID Number
ALBERHILL RNCH TRACT MAP 28214 (Continued)		S109435651

Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Castle & Cooke Alberhill Ranch Ltd
Discharge Address: 300 West Potrero Road
Discharge City: Thousand Oaks
Discharge State: CA
Discharge Zip: 91361

LOS PINOS CONSERVATION CAMP **UST** **U004050576**
32951 ORTEGA HWY **N/A**
LAKE ELSINORE, CA 92530

UST:
Global ID: 12963
Latitude: 33.64164
Longitude: -117.38439

Proposed Alberhill Substation
14116 Temescal Canyon Rd.
Lake Elsinore, CA 92530

Inquiry Number: 2587181.9
September 10, 2009

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

9/10/09

Site Name:
Proposed Alberhill Substation
14116 Temescal Canyon Rd.
Lake Elsinore, CA 92530

Client Name:
Rubicon Engineering
20 Corporate Park
Irvine, CA 92606

EDR Inquiry # 2587181.9

Contact: Peter Lee

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Rubicon Engineering Corporation were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Proposed Alberhill Substation
Address: 14116 Temescal Canyon Rd.
City, State, Zip: Lake Elsinore, CA 92530
Cross Street:
P.O. # 1009.24
Project: SCE_Alberhill S
Certification # 0013-41DA-B7A6

Sanborn® Library search results
Certification # 0013-41DA-B7A6

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

Limited Permission To Make Copies

Rubicon Engineering Corporation (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Proposed Alberhill Substation
14116 Temescal Canyon Rd.
Lake Elsinore, CA 92530

Inquiry Number: 2587181.12
September 15, 2009

The EDR-City Directory Abstract

Environmental Data Resources Inc
440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

2009 Enhancements to EDR City Directory Abstract

New for 2009, the EDR City Directory Abstract has been enhanced with additional information and features. These enhancements will make your city directory research process more efficient, flexible, and insightful than ever before. The enhancements will improve the options for selecting adjoining properties, and will speed up your review of the report.

City Directory Report. Three important enhancements have been made to the EDR City Directory Abstract:

1. *Executive Summary.* The report begins with an Executive Summary that lists the sources consulted in the preparation of the report. Where available, a parcel map is also provided within the report, showing the locations of properties researched.

2. *Page Images.* Where available, the actual page source images will be included in the Appendix, so that you can review them for information that may provide additional insight. EDR has copyright permission to include these images.

3. *Findings Listed by Location.* Another useful enhancement is that findings are now grouped by address. This will significantly reduce the time you need to review your abstracts. Findings are provided under each property address, listed in reverse chronological order and referencing the source for each entry.

Options for Selecting Adjoining Properties. Ensuring that the right adjoining property addresses are searched is one of the biggest challenges that environmental professionals face when conducting city directory historical research. EDR's new enhancements make it easier for you to meet this challenge. Now, when you place an order for the EDR City Directory Abstract, you have the following choices for determining which addresses should be researched.

1. *You Select Addresses and EDR Selects Addresses.* Use the "Add Another Address" feature to specify the addresses you want researched. Your selections will be supplemented by addresses selected by EDR researchers using our established research methods. Where available, a digital map will be shown, indicating property lines overlaid on a color aerial photo and their corresponding addresses. Simply use the address list below the map to check off which properties shown on the map you want to include. You may also select other addresses using the "Add Another Address" feature at the bottom of the list.

2. *EDR Selects Addresses.* Choose this method if you want EDR's researchers to select the addresses to be researched for you, using our established research methods.

3. *You Select Addresses.* Use this method for research based solely on the addresses you select or enter into the system.

4. *Hold City Directory Research Option.* If you choose to select your own adjoining addresses, you may pause production of your EDR City Directory Abstract report until you have had a chance to look at your other EDR reports and sources. Sources for property addresses include: your Certified Sanborn Map Report may show you the location of property addresses; the new EDR Property Tax Map Report may show the location of property addresses; and your field research can supplement these sources with additional address information. To use this capability, simply click "Hold City Directory research" box under "Other Options" at the bottom of the page. Once you have determined what addresses you want researched, go to your EDR Order Status page, select the EDR City Directory Abstract, and enter the addresses and submit for production.

Questions? Contact your EDR representative at 800-352-0050. For more information about all of EDR's 2009 report and service enhancements, visit www.edrnet.com/2009enhancements

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2007	Haines Criss-Cross Directory	-	X	X	-
2000	Haines Criss-Cross Directory	-	X	X	-
1995	Haines Criss-Cross Directory	-	X	X	-
1991	Haines Criss-Cross Directory	X	X	X	-
1985	Haines Criss-Cross Directory	-	X	X	-
1981	Haines Criss-Cross Directory	-	X	X	-
1975	Haines Criss-Cross Directory	-	-	-	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

14116 Temescal Canyon Rd.
Lake Elsinore, CA 92530

FINDINGS DETAIL

Target Property research detail.

Year	*Uses*	*Source*
1991	Harris Ranch	Haines Criss-Cross Directory

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

Temescal Canyon Rd.

Temescal Canyon Rd.

Year	*Uses*	*Source*
2007	No address listings prior to (14299) Temescal Canyon Road	Haines Criss-Cross Directory
2000	No address listings prior to (14299) Temescal Canyon Road	Haines Criss-Cross Directory
1995	No address listings prior to (14299) Temescal Canyon Road	Haines Criss-Cross Directory
1991	No address listings prior to the Target Property	Haines Criss-Cross Directory
	No other addresses (14000-14299) block Temescal Canyon Rd	Haines Criss-Cross Directory
1985	No address listings prior to (14495) Temescal Canyon Road	Haines Criss-Cross Directory
1981	No address listings prior to (14495) Temescal Canyon Road	Haines Criss-Cross Directory

14299 Temescal Canyon Rd.

Year	*Uses*	*Source*
2007	Ca Landscaping Rock	Haines Criss-Cross Directory
	Candee William Enterprises Inc	Haines Criss-Cross Directory
	Temescal Canyon Rockery	Haines Criss-Cross Directory
2000	Ca Landscaping Rock	Haines Criss-Cross Directory
	Candee William Enterprises Inc	Haines Criss-Cross Directory
	Temescal Canyon Rockery	Haines Criss-Cross Directory
1995	No Return	Haines Criss-Cross Directory
1991	Acosta Bldg Materials	Haines Criss-Cross Directory

FINDINGS

STREET NOT LISTED IN RESEARCH SOURCE

The following Streets were researched for this report, and the Streets were not listed in the research source.

Street Researched	Street Not Listed in Research Source
Temescal Canyon Rd.	1975

TARGET PROPERTY: ADDRESS NOT LISTED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not listed in the research source.

Address Researched	Address Not Listed in Research Source
14116 Temescal Canyon Rd.	2007, 2000, 1995, 1985, 1981

ADJOINING PROPERTY: ADDRESSES NOT LISTED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not listed in research source.

Address Researched	Address Not Listed in Research Source
14299 Temescal Canyon Rd.	1985, 1981

AMERISTAR

CHAIN OF OWNERSHIP REPORT
COMBO Part I

CLIENT INFORMATION

Client:	Environmental Data Resources	**Report Date:**	09/29/2009
Client No.:	12010	**Index Date:**	09/16/2009
Address:	440 Wheelers Farms Rd Milford, CT 06460	**Order ID:**	99-200-1-3778
		Client Ref.:	2587181.15
Contact:	Pat Kennedy	**PO Number:**	Peter Lee
Phone:	800-352-0050		
Delivery:	PKennedy@edrnet.com		

CURRENT OWNER INFORMATION

Current Owner of Record:	Eleanor J. Shattuck, et al Trustees
Current Site Address:	14116 Temescal Canyon Rd Lake Elsinore, CA 92530
County of Research:	RIVERSIDE

LEGAL DESCRIPTION

2.73 ACRES. ALL THAT PORTION OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 97938, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

THAT PORTION OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 160645, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

THAT PORTION OF NORTH HALF OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 138376, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

1.27 ACRES. ALL THAT PORTION OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 0270174, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

PORTION OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 1999-329940, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

THAT PORTION OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 2003-462124, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

NOTE: Ameristar does not represent that the above legal description, acreage, or square footage calculations are correct. We have taken this information directly from a document recorded at the courthouse.

AMERISTAR
PUBLIC RECORD RESEARCH

PARCEL IDENTIFICATION NUMBER:	**391-120-022-8**
PARCEL IDENTIFICATION NUMBER:	**391-120-024-0**
PARCEL IDENTIFICATION NUMBER:	**391-120-026-2**
PARCEL IDENTIFICATION NUMBER:	**391-120-016-3**
PARCEL IDENTIFICATION NUMBER:	**391-120-003-1**
PARCEL IDENTIFICATION NUMBER:	**391-120-002-0**
PARCEL IDENTIFICATION NUMBER:	**391-120-015-2**
PARCEL IDENTIFICATION NUMBER:	**391-120-023-9**
PARCEL IDENTIFICATION NUMBER:	**391-160-021-1**
PARCEL IDENTIFICATION NUMBER:	**391-160-022-2**

AMERISTAR

DEED / OWNERSHIP INFORMATION

GRANT DEED:

EXECUTED:	04/06/1961	
RECORDED:	04/10/1961	
GRANTOR:	Edward S. Shattuck and Mary J Shattuck, husband and wife	
GRANTEE:	Edward S. Shattuck S Shattuck and Mary Jane Shattuck, husband and wife as C/P	
INST. NO.:	30147	*391-160-022-2*

PROBATE:

EXECUTED:	08/30/1971	
RECORDED:	08/30/1971	
GRANTOR:	Estate of Edward S. Shattuck	
GRANTEE:	ELEANOR J. SHATTUCK, ET AL TRUSTEES	
INST. NO.:	97938	*391-160-022*

GRANT DEED:

EXECUTED:	07/02/1980	
RECORDED:	09/04/1980	
GRANTOR:	Virginia Gardner, a widow	
GRANTEE:	Thomas Joseph Boyle and Bridget Rheta Boyle, husband and wife, as joint tenants	
INST. NO.:	160645	*391-120-003*

GRANT DEED:

EXECUTED:	03/23/1981	
RECORDED:	03/23/1981	
GRANTOR:	Donald A. Prenger and Evelyn A. Prenger	
GRANTEE:	Jose Quintana and Maria Del Socorro Yanez	
INST. NO.:	53001	*391-120-016 and 391-120-002*

CORRECTION GRANT DEED:

EXECUTED:	02/06/1984	
RECORDED:	02/22/1984	
GRANTOR:	William M. Smith and Elaine K Smith, husband and wife	
GRANTEE:	Jose Quintana, a married masn as his sole and separate property as to an undivided ½ interest and Fernando Esquivel a married man as his sole and separate property as to an undivided ½ interest	
INST. NO.	34407	*391-120-26*

QUITCLAIM DEED:

EXECUTED:	02/15/1984	
RECORDED:	02/22/1984	
GRANTOR:	Maria Quintana, wife of the Grantee	
GRANTEE:	Jose Quintana, a married man as his sole and separate property	
INST. NO.:	34402	*391-120-26*

QUIT CLAIM DEED:

EXECUTED:	02/15/1984	
RECORDED:	02/22/1984	
GRANTOR:	Blanca Esquivel, wife of the Grantee	
GRANTEE:	Fernando Esquivel, a married man as his sole and separate property	
INST. NO.:	34409	*391-120-26*

AMERISTAR

GRANT DEED:

EXECUTED:	02/15/1984	
RECORDED:	03/02/1984	
GRANTOR:	Fernando Esquivel	
GRANTEE:	Jose Quintana, a married man as his sole and separate property	
INST. NO.:	43688	*391-120-26*

WARRANTY DEED:

EXECUTED:	02/17/1984	
RECORDED:	03/02/1984	
GRANTOR:	Jose Quinatana and Maria Yanez Quintana, husband and wife	
GRANTEE:	Russell Harris and M. Brook Harris, husband and wife C/P	
INST. NO.:	43689	*391-120-002*
		391-120-016
		391-120-022
		391-120-24
		391-120-26

GRANT DEED:

EXECUTED:	06/05/1985	
RECORDED:	06/25/1985	
GRANTOR:	William M. Smith and Elaine K. Smith, husband and wife C/P	
GRANTEE:	William K. Smith and Elaine K. Smith, Co-Trustee under Declaration of Trust dated 6-05-85	
INST. NO.:	138376	*391-120-023*
		391-160-021

WARRANTY DEED:

RECORDED:	08/01/1989
GRANTEE:	EVMWD
INST. NO.:	270174

QUIT CLAIM DEED:

EXECUTED:	08/16/1989	
RECORDED:	10/02/1989	
GRANTOR:	The Anden Group, a California limited partnership	
GRANTEE:	Russell Harris and M. Brook Harris, husband and wife C/P	
INST. NO.:	340776	*391-120-002*
		391-120-016
		391-120-022
		391-120-24
		391-120-26

GRANT DEED:

EXECUTED:	03/22/1993	
RECORDED:	03/24/1993	
GRANTOR:	Russell Harris and M. Brook Harris, husband and wife	
GRANTEE:	Sundance Music Corporation, a California Corporation	
INST. NO.:	109430	*391-120-002*
		391-120-016
		391-120-022
		391-120-24
		391-120-26

AMERISTAR
PUBLIC RECORDS RESEARCH

TRUSTEE'S DEED UPON SALE:

EXECUTED:	08/15/1996	
RECORDED:	08/20/1996	
GRANTOR:	T. D. Service Company, Trustee	
GRANTEE:	Centra Mortgage Holdings, Ltd.	
INST. NO.:	314961	*391-120-002* *391-120-016* *391-120-022* *391-120-24* *391-120-26*

QUIT CLAIM DEED:

RECORDED:	12/04/1996	
GRANTOR:	Russell Harris and M. Brook Harris, husband and wife	
GRANTEE:	Centra Mortgage Holdings, Ltd.	
INST. NO.:	458724	*391-120-002* *391-120-016* *391-120-022* *391-120-024* *391-120-026*

GRANT DEED:

EXECUTED:	06/09/1997	
RECORDED:	07/10/1997	
GRANTOR:	Centra Mortgage Holdings, Ltd.	
GRANTEE:	Angela Cornelio, an unmarried woman	
INST. NO.:	1999-329940	*391-120-002* *391-120-022* *319-120-024* *391-120-025* *391-120-016*

GRANT DEED:

EXECUTED:	07/13/1999	
RECORDED:	07/23/1999	
GRANTOR:	Angela Cornelio, a Single woman	
GRANTEE:	Angeles Cornelio Keller, as Trustee of the Angela Cornelio Living Trust, UDT 7/13/199	
INST. NO.:	1999-329940	*391-120-002* *391-120-022* *319-120-024* *391-120-025* *391-120-016*

GRANT DEED:

EXECUTED:	04/02/2003	
RECORDED:	05/23/2003	
GRANTOR:	Angela Cornelio Zavala, a unmarried woman, known as "The Angela Cornelio Zavala Revocable Family Living Trust r & t 11911"	
GRANTEE:	Angeles Cornelio Keller, sole Trustee under the Angela Cornelio Living Trust, dated July 13, 1990	
INST. NO.:	2003-462124	*391-120-026* *391-120-016*

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WHEN RECORDED, RETURN TO:

DARLING, HALL, RAE & GUTE

707 Security Pacific Building

611 West Sixth Street

Los Angeles, California 90017

627-2104

Attorneys for Petitioners.

RECEIVED FOR RECORD
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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

In the Matter of the Estate

of

EDWARD S. SHATTUCK,

Deceased.

NO. P-504,189

ORDER SETTLING FIRST AND FINAL ACCOUNT AND REPORT OF EXECUTRICES; GRANTING PETITIONS FOR: APPROVAL OF SALE OF CORPORATE STOCK; APPROVAL OF SALE OF DEPRECIATING PROPERTY; APPROVAL OF ALLOCATION OF INCOME TAXES IN DISTRIBUTING INCOME ACCUMULATED DURING ADMINISTRATION; APPORTIONMENT OF INHERITANCE, ADDITIONAL AND FEDERAL ESTATE TAXES; ALLOWANCE OF STATUTORY COMMISSIONS OF EXECUTRICES; INSTRUCTIONS REGARDING CONTINGENT CLAIM; and DECREE OF FINAL DISTRIBUTION

The First and Final Report and Account of Executrices and Petitions for: Approval of Sale of Corporate Stock; Approval of Sale of Depreciating Property; Approval of Allocation of Income Taxes in Distributing Income Accumulated During Administration; Apportionment of Inheritance, Additional and Federal Estate Taxes; Allowance of Statutory Commissions of Executrices; Instructions Regarding Contingent Claim (Probate Code § 953.1); and Final Distribution of ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, as Executrices of the Estate of EDWARD S. SHATTUCK, Deceased, came on regularly for hearing on August 3, 1971, in Department 11 of the above-entitled Court, Honorable Norman R. Dowds, Judge Presiding, Darling, Hall, Rae & Gute, by Matthew S. Rae, Jr., appearing for Petitioners, and no person appearing to object thereto.

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On proof being made to the satisfaction of the Court, the Court finds that:

A. Notice of hearing of said Account, Report and Petitions has been duly and regularly given as required by law.

B. Said Account and Report are in all respects true and all of the allegations of said Petitions are true.

C. Notice to Creditors has been published as provided by law, the first publication thereof having been made on February 14, 1966, and a Declaration of Publication of Notice to Creditors having been filed herein on March 7, 1966. More than six months have elapsed since the date of first publication of Notice to Creditors. All claims presented against the Estate have been paid in full, except for a contingent portion of the Creditor's Claim of MARIE E. SHATTUCK, and the time for filing or presenting claims has expired.

D. The California Inheritance Tax, Federal Estate Tax, Personal and Real Property Taxes and Federal and State Income Taxes due and payable by the Estate have been paid in full.

E. The value of the Estate is more than $50,000.00 and there are no nonresident devisees or legatees who will receive assets of any value. No Certificate of the Franchise Tax Board is required to be filed herein under § 19262 of the Revenue and Taxation Code.

F. The verified Petition for Approval of Sale of Corporate Stock shows that Petitioners sold fractional shares of stock of Teledyne, Inc., received as stock dividends, the sales having been made at the current market price at the time of each sale, and good cause having been shown therefor, said sales should be approved.

G. The sale of depreciating personal property reported in the Petition was to the advantage, benefit and best interests of the Estate and those interested therein, and good cause appearing for said sale, it should be approved.

H. The Executrices have in their possession belonging to the Estate a balance on hand for distribution in the amount of $255,999.41

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consisting of income cash in the sum of $8,982.55, principal cash in the sum of $61,810.73 and assets other than cash in the sum of $185,206.13.

I. Inheritance, Additional and Federal Estate Taxes have been paid by the Estate on behalf of the persons and in the sum set forth in the Order below and, except for the bequest of death taxes to MARION GUTE, should be apportioned to and deducted from the respective shares of income accumulated during administration of GEORGIA M. CULHANE and ELIZABETH S. KAAK before distribution to the Trustees in the sums and manner set forth in the Order below.

J. In determining the amount of income distributable to the Testamentary Trust, the allocation of fiduciary income taxes entirely to principal should be approved.

K. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, as Executrices, are entitled to statutory commissions in the amount of $8,423.69 to be divided equally between them, no part of which commissions have been paid.

L. DARLING, HALL, RAE & GUTE, as attorneys for the Executrices, have waived any fees, statutory or extraordinary, to which they otherwise would be entitled as attorneys.

M. All of the property of the Estate was the separate property of decedent, except for community property itemized as Items 35 through 39 and 41 through 43 of the Supplemental Inventory and Appraisement filed herein and the Computation of Distribution, attached as Exhibit H to the Petition for Distribution, allocates the net community property accordingly, allowing to the widow her one-half thereof by operation of law.

N. There are contingent installment payments hereafter due upon the Creditor's Claim of MARIE E. SHATTUCK filed against the Estate. The unpaid portion of said claim should be made a lien upon the Assets distributed to the Trustees and should be paid by said Trustees from time to time as amounts become due upon said claim.

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O. The Account should be settled and allowed, the Report should be approved, the Petitions should be granted and all acts of the Executrices reported in detail in the Account and Report, including their acts in receiving proceeds in the dissolution of three corporations and two partnerships and in computing the distributive shares of the Estate, should be approved and final distribution of the Estate should be ordered as follows:

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

1. The First and Final Report of the Executrices is in all respects approved and the First and Final Account of the Executrices is hereby approved as filed.

2. All acts of the Executrices, including their acts in receiving proceeds in the dissolution of three corporations and two partnerships and in computing the distributive shares of the Estate, reported in detail in the Account and Report are hereby approved.

3. The sales of fractional shares of stock of Teledyne, Inc., reported by the Executrices, are hereby approved.

4. The sale as depreciating personal property of a 1960 Cadillac Coupe de Ville automobile reported by the Executrices is hereby approved and the Executrices are authorized to execute all documents convenient or necessary in order to transfer title to the property.

5. Notice to Creditors has been duly given as required by law.

6. The Executrices are hereby authorized and directed to charge $371.18 each against GEORGIA M. CULBANE and ELIZABETH S. KAAK as and for Inheritance, Additional and Federal Estate Taxes, payable by and apportionable to each of them, and the Executrices are hereby authorized and directed to collect those amounts from those persons by deduction from the income accrued during administration which is distributable to them as beneficiaries of the Testamentary Trust

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herein established.

7. The allocation of fiduciary income taxes entirely to principal in determining distributable income accumulated during administration is hereby approved.

8. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, as Executrices, are authorized and instructed to pay to ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK the sum of $8,423.69 as their statutory commissions as Executrices, to be divided equally between them.

9. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, as Executrices, are authorized and instructed to withhold the sum of $25.00 to meet closing expenses of administration.

10. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S KAAK, as Executrices, are hereby ordered and instructed, in accordance with the Will of the decedent, to make final distribution of the Estate of the decedent, including the residue of cash after the payment of the commissions awarded hereby and expenses of administration, and after adjustment for proration of death taxes, by distributing all of the assets of the Estate as hereinafter set forth to the following persons and for the following purposes:

To ELEANOR J. SHATTUCK:

One 1964 Buick Riviera 2-door hardtop coupe automobile, engine No. 7K1095881

Miscellaneous household furniture, furnishings and equipment

$9,490.03 cash

4.3833% of interest earned on deposits in financial institutions after February 15, 1971

A 4.3833% remainder interest upon the death or remarriage of MARIE E. SHATTUCK in and to any portion of $5,690.10 not paid to MARIE E. SHATTUCK after February 15, 1971, in accordance with her Creditor's Claim filed against the decedent's Estate

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To THE UNIVERSITY OF REDLANDS to be added to the "Edward S. Shattuck and Mary Jane Shattuck Scholarship":

$7,525.00 cash plus interest thereon at 4% from December 14, 1966

To THE UNIVERSITY OF SOUTHERN CALIFORNIA for the benefit of the Law School to be added to the "Edward S. Shattuck and Eleanor J. Shattuck Scholarship":

$8,525.00 cash plus interest thereon at 4% from December 14, 1966

To ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, IN TRUST, with the following powers and authorities and for the following uses and purposes, the hereinafter described property:

A. Regarding the trustees, it is directed:

1. In the event any one of the trustees above named refuses to act as trustee, becomes disqualified, or dies, resigns, or is removed as such trustee, the other two trustees above named are designated and appointed as successor co-trustees, subject to Court approval.

2. In the event any two of the trustees above named refuse to act as trustee, become disqualified, or die, resign, or are removed as such trustees, the remaining trustee above named is designated and appointed as sole successor trustee, subject to Court approval.

3. In the event all of the trustees above named refuse to act as trustee, become disqualified, or die, resign, or are removed as such trustees, the following persons in the following order are designated and appointed as sole successor trustee, subject to Court approval, to serve in their place and stead, in each instance to succeed to the trusteeship only in the event his predecessor in order predeceases the date on which he would have succeeded as trustee, refuses to act as trustee, becomes disqualified, or dies, resigns or is removed subsequent to his

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appointment:

A. HUGH W. DARLING;

B. GEORGE G. GUTE;

C. MATTHEW S. RAE, JR.;

D. DONALD KEITH HALL;

E. THOMAS P. CALL;

F. UNITED CALIFORNIA BANK, a California corporation, of Los Angeles, California, and its successors by merger, consolidation or otherwise.

4. No bond shall be required of any of the individual trustees and successor trustees named, regardless of the combinations in which they may serve and of the fact that one of them may be serving as sole trustee.

B. The income and principal of the trust estate shall be used and distributed as follows:

1. All expenses attending the maintenance, preservation, upkeep and development of the trust estate, including, without limiting the general, necessary legal expenses, travel and other expenses of the trustees and a reasonable management allowance for the trustees to be divided equally so long as there are more than one, shall be paid and discharged out of income, if sufficient, and if not, out of corpus.

2. Upon receipt thereof, the trustees shall divide the entire trust estate into three equal shares, designating one share by the name of ELEANOR J. SHATTUCK, one by the name of GEORGIA M. CULHANE, and one by the name of ELIZABETH S. KAAK.

3. The trustees, during the life of any share of this trust, shall distribute in not less frequent than quarterly intervals the entire net income of each share of the trust estate to the person by whose name the share is designated, or if such person is deceased or dies during the life of the share bearing such person's name, equally to or for the use of the issue of such

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person by right of representation.

4. Upon the death of ELEANOR J. SHATTUCK, the trustees shall distribute the entire remaining principal of the share designated by her name, together with any accumulated and undistributed income thereof, ratably to the other shares of the trust estate to be added to and become a part thereof, including the distribution of a portion to any persons who have received final distribution of any share of the trust estate.

5. Subsequent to the death of GEORGIA M. CULHANE or ELIZABETH S. KAAK, the trustees shall distribute in not less frequent than quarterly intervals to, or for the use or benefit of, the children of such deceased person, so much of the net income of the share of the trust estate designated by that deceased person's name as in their sole discretion may be required for the reasonable maintenance, comfort, support and education, including study at an institution of higher learning, of each of such children, after taking into consideration all other means of support available to them, until the youngest child of such deceased person living at any given time attains the age of twenty-five years. Any undistributed net income of such share of the trust estate shall be accumulated and added to the principal thereof.

6. If at any time, or times, during the life of any share of this trust, the person by whose name the share is designated, or if such person is deceased, or dies, the issue of such person who are entitled to receive the income from such share, shall be in need of additional moneys for reasonable maintenance, comfort, support or education, including study at an institution of higher learning, or for the expenses of accident, illness or other misfortune, the trustees may pay to or for the use or benefit of such person, or persons, such additional amount, or amounts, from the principal of such share as the trustees may deem proper and necessary up to and including the whole thereof.

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7. Subsequent to the death of GEORGIA M. CULHANE or ELIZABETH S. KAAK and upon the attainment of the age of twenty-five years by the youngest child of such deceased person living at any given time, or upon the death of a child of such deceased person before reaching twenty-five years when all other living children have theretofore attained the age of twenty-five years, the trustees shall distribute the entire remaining principal of the share designated by that deceased person's name together with any accumulated and undistributed income thereof to the "Grandchildren's Trust", which shall be established upon the first such distribution thereto.

8. Upon the establishment of the "Grandchildren's Trust" as hereinabove provided, the trustees shall divide the entire trust estate received by such "Grandchildren's Trust", and all later additions as the result of subsequent distributions thereto, into as many equal shares as there are grandchildren of EDWARD S. SHATTUCK then living and deceased grandchildren of EDWARD S. SHATTUCK who have left issue then living, each such share to be designated by the name of one of such grandchildren.

9. Subsequent to the establishment of the "Grandchildren's Trust", the trustees shall distribute in not less frequent than quarterly intervals the entire net income of each share into which it has been divided to, or for the use or benefit of, the person by whose name the share is designated, or, if such person be deceased, equally, share and share alike, by right of representation and not per capita, to, or for the use or benefit of, the issue of such person.

10. The principal, and any accumulated or undistributed income, of each share of the "Grandchildren's Trust" shall be distributed as follows:

a. To the person by whose name such share is designated upon having attained the age specified below, or if such

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person be deceased then equally, share and share alike, by right of representation and not per capita, to such person's issue at the time of such person's death:

(i) Age twenty-five, one-third thereof;

(ii) Age thirty, one-half of the remainder thereof;

(iii) Age thirty-five, the balance thereof.

b. If the person by whose name a share is designated is deceased and died without leaving issue surviving, or all issue of such person die before final distribution of such share is made in accordance with the foregoing provisions, then upon the death of such person without issue, or upon such failure of issue, the trustees shall distribute the then remaining balance of such share ratably to the other shares of the "Grandchildren's Trust", including the distribution of a portion to any persons who have received final distribution of any share thereof.

11. In any event, the entire trust shall terminate upon the death of the last survivor of ELEANOR J. SHATTUCK, GEORGIA M. CULHANE, ELIZABETH S. KAAK and the grandchildren of EDWARD S. SHATTUCK living at the time of the death of EDWARD S. SHATTUCK. Upon such termination, the entire remaining principal of each then existing share of the trust estate, together with any accumulated or undistributed income thereof, shall be distributed by the trustees to the then living persons who immediately prior to such termination were entitled to receive the income therefrom. If upon such termination no person hereinabove specified to receive distribution should survive, then the trustees shall distribute the entire remaining principal of the trust estate, together with any accumulated or undistributed income thereof, to the then living persons who would have been the heirs-at-law of EDWARD S. SHATTUCK under the California statutes of intestate succession then in force and effect had he died at the time of such termination

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and in the proportions specified by such laws.

C. No beneficiary under this trust shall assign, transfer, convey, anticipate, pledge, hypothecate or otherwise encumber her interest hereunder, and neither the principal of this trust nor any income therefrom shall be liable for any debt of any beneficiary, or be subject to any judgment rendered against any beneficiary, or to the process of any court in aid of execution of any judgment so rendered.

D. The trustees shall be vested with the following powers and discretions affecting the trust and the trust estate:

1. Except as specifically limited herein, and except for the additional authority herein conferred upon the trustees, the trustees shall have all authority with respect to the management and control of the trust estate conferred upon trustees by the laws of the state, or states, having jurisdiction over the trust estate or any part thereof affected;

2. To commingle the assets of the separate shares into which the trust estate may be divided, to make joint investments from such separate shares and to hold the investments and assets of such separate shares in undivided interests if in the sole discretion of the trustee it seems advisable;

3. To maintain and operate any business or income property, to repair, recondition and improve any property and to lease any portion of the trust estate for terms within or extending beyond the duration of the trust at such rentals or royalties and upon such terms and conditions as they may deem advisable;

4. To invest any funds available for investment or reinvestment in such securities or properties as the trustees in their judgment may deem advisable without limitation on the judgment of the trustees or without liability for the consequences of their acts performed in good faith;

5. To sell any part of the trust estate on such terms

and conditions as the trustees may deem to be advisable. The trustees are requested, but not instructed or commanded, to maintain any income producing property forming a part of the trust estate without sale, unless a sale be advisable, and to reduce to cash or to convert into income producing property any non-income producing property, if desirable, and as soon as reasonably possible;

6. To continue to hold any property and to operate at the risk of the trust estate and not at the risk of the trustees any property or business received in this trust as long as they may deem advisable, the profits and losses therefrom to inure, or be chargeable, to the trust estate as a whole and not to the trustees;

7. To advance funds to this trust for any trust purpose, such advances with interest at current rates to be repaid out of principal or income and to reimburse themselves from principal or income for any loss or expense incurred by reason of their ownership or holding of property of this trust;

8. To borrow money for any trust purpose upon such terms and conditions as the trustees may deem proper and to obligate the trust estate for repayment; to encumber the trust estate or any of its property by mortgage, deed of trust, pledge, or otherwise, using such procedure to consummate the transaction as the trustees may deem advisable;

9. To exercise all voting powers and privileges under any securities and to participate in foreclosures, reorganizations, mergers, consolidations and liquidations;

10. To determine in their sole discretion what is principal or income of the trust estate and to apportion and allocate in their sole discretion receipts and expenses as between principal and income; to charge to the principal of the trust estate the full purchase price of any securities purchased at a

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premium without the necessity of thereafter making any amortization of such premium;

11. Until the trustees shall receive from some person interested in this trust written notice of any death, birth, marriage or other event upon which the right to receive income or principal of the trust estate may depend, the trustees shall incur no liability for disbursements or distributions made or omitted in good faith;

12. Upon termination of this trust, in whole or in part, to partition and allot undivided interests, and to convey, assign and deliver to the persons entitled thereto the trust property in kind, or partly in kind and partly in cash, at values to be determined by the trustees, or in cash, after reduction to cash by sale, or in undivided interests;

13. If at any time during the life of this trust any beneficiary is a minor or an incompetent person, the trustees, in their sole discretion, may make any distribution of moneys provided for herein to such beneficiary, or any person having actual custody of such beneficiary, without the intervention of a guardian, or the trustees may themselves expend such moneys for such beneficiary, or the trustees may distribute to a guardian, but the trustees may, in their discretion, require such reports and take such steps as they may deem requisite to insure and enforce the due application of such moneys for the purposes of this trust;

14. The powers hereinbefore set forth are not intended and shall not be construed in any respect as in limitation of any powers conferred upon the trustees by law, but are intended and shall be construed as being in addition thereto;

15. In the event the trustees may deem it advisable to have their authority and powers enlarged or extended for any reason or purpose, the trustees are authorized to file an appropriate application therefor with a court of competent

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jurisdiction, and the trustees are authorized to comply with any order made in response to any such application.

The property distributed to said Trustees is as follows:

PROPERTY NO. I

All that real property in the City of Pasadena, County of Los Angeles, State of California, described as:

All that portion of Lots 1 and 2 of Tract No. 10709 As shown on map recorded in Book 169, pages 11 and 12 of Maps, in the office of the Recorder of said County, lying Westerly of the following described line:

Beginning at the Southerly terminus of that certain course in the Westerly line of Lot 2 of said Tract No. 10709, shown on said map as having a bearing of North 3° 06' 30" East and a length of 30 feet, being the beginning of a tangent curve therein shown as being concave to the East and having a radius of 67.00 feet; thence Southerly along said curve, 18.00 feet, to the true point of beginning, a radial to said point bears South 77° 42' 56" West; thence North 28° 48' 06" East 19.91 feet; thence North 9° 35' 49" East, 136.65 feet; thence North 6° 00' 49" East 54.30 feet; thence North 28° 29' 14" West, 63.88 feet; thence North 15° 11' 7-" West, 53.34 feet; thence North 38° .. 19" East, 62.93 feet; thence North 81° 22' 09" East, 52.62 feet, to the intersection with the Northeasterly line of Lot 1 of said Tract No. 10709.

PROPERTY NO. II

The real property situated in the County of San Bernardino, State of California, described as follows:

Lot 202 of Tract No. 6397, as per map recorded in Book 61 of Maps, pages 30 to 35, inclusive, records of said County.

Excepting and witholding from the said realty all of the trees, and all of the roots, branches and parts thereof, growing on or that may hereafter grow, stand, or be upon any part of said

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lot above described. The grantee, his successors and assigns will however, as provided in that certain Declaration hereinafter referred to, do whatever is necessary for the maintenance, care, growth and development of each and every tree and will for such purpose expend such funds and engage such expert personnel as may be reasonably necessary to adequately maintain and care for such trees, and shall pay the cost and expense for the removal of any tree or trees, and indemnify and hold grantor harmless therefor. The said grantee, his successors and assigns shall pay before delinquency all taxes and assessments levied or laid upon the premises during the ownership thereof, together with and including all taxes, assessments or charges that may be hereafter levied or laid upon the trees or any of them herein referred to and growing or being upon said premises.

Also excepting and withholding from the said realty all the water and water rights in, under or flowing over said property, or appurtenant to, or to any part thereof, including the right to develop water thereon, transport or export water therefrom.

Subject to the covenants, conditions, restrictions and reservations contained in that certain Declaration made by Title Insurance and Trust Company, and recorded November 3, 1961, in Book 5577, page 422, Official Records; and subject to the provisions of that certain Declaration of Easement recorded August 17, 1961, in Book 5512, page 593, Official Records of said County, all of which are incorporated herein by reference to said Declarations with the same effect as though said Declarations were fully set forth herein.

PROPERTY NO. III

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

That portion of the North 1/2 of the Southwest 1/4 of Section 16, Township 5 South, Range 5 West, San Bernardino Base and Meridian, as shown by U. S. Government Survey approved August 29, 1890, described as follows:

Beginning at the Northeast corner of that certain parcel of land as conveyed to the State of California by Deed recorded August 8, 1955 in Book 1777, page 574 of Official Records of said County; said Northeast corner being also the Northeast

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corner of the West 1/2 of the Northeast 1/4 of the Southwest 1/4 of Section 16; thence along the North line of said State of California parcel of land North 89° 28' 48" West 559.72 feet to the Northwest corner thereof; said Northwest corner being also the Northeast corner of that certain parcel of land as conveyed to the State of California by Deed recorded August 10, 1955 in Book 1779, Page 81 of Official Records of said County; thence along the Easterly line of said last State of California parcel of land South 5° 14' East 37.86 feet; thence along a tangent curve concave Southwesterly with a radius of 440 feet through an angle of 36° 13' 59" a distance of 278.25 feet, thence South 35° 59' 31" East 85.74 feet; thence South 69° 57' 36" East 294.10 feet to the Easterly line of first said State of California parcel of land distant along said Easterly line South 1° 14' 33" West 363.28 feet from the point of beginning; thence along said Easterly line North 1° 14' 33" East 363.28 feet to the point of beginning, containing 2.80 acres, more or less.

SUBJECT TO: An exception and reservation unto the State of California of any and all rights of ingress to or egress from the real property herein conveyed to or from the freeway proposed to be constructed upon lands lying Southerly of said real property, provided, however, that said real property shall abut upon and have access to a frontage road which will be connected with said freeway only at such points as may be established by public authority;

AND ALSO SUBJECT TO: Any taxes and additional covenants, conditions, restrictions, reservations, and rights of way of record.

PROPERTY NO. IV

An undivided 1/2 interest in and to all minerals, oil and hydrocarbon rights in and under approximately 81.22 acres in the County of Riverside, State of California, described as follows:

PARCEL A: All that portion of the Southwest Quarter of Section 16, Township 5 South, Range 5 West, San Bernardino Base and Meridian, as shown by United States Government Survey, particularly described as follows:

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Beginning at a point on the North line of said Southwest Quarter, 264 feet East of the Northwest corner thereof;
Thence Southeasterly along the Northeasterly line of the Elsinore-Corona Highway, 877 feet, more or less, to the Westerly line of the Right of Way of the Temescal Water Company;
Thence Northerly along said Westerly line, 461 feet, more or less, to a point on the Northerly line of said Southwest Quarter, 609 feet Easterly from the point of beginning;
Thence Westerly along said Northerly line, 609 feet to the point of beginning.

PARCEL B: The Southwest Quarter of the Northwest Quarter and the Southeast Quarter of Northwest Quarter of Section 16, Township 3 South, Range 5 West, San Bernardino Base and Meridian, as shown by United States Government Survey;

EXCEPTING from said Southwest Quarter of Northwest Quarter, a strip of land 40 feet in width, granted to the Temescal Water Company, by Deed recorded May 22, 1897 in Book 58, page 292 of Deeds, records of Riverside County, California, being 20 feet on each side of the following described center line:

Beginning at a point 1004 feet East of the Quarter section corner on the West line of said Section 16;
Thence North 12-1/2° West, 383 feet;
Thence North 62° 50' West, 1010 feet to the West line of said section;

ALSO EXCEPTING from said Southwest Quarter of Northwest Quarter, that portion thereof lying Southwesterly of the Northeasterly line of the County Highway as conveyed by Deed recorded November 9, 1915 in Book 433, page 33 of Deeds, records of said Riverside County;

ALSO EXCEPTING therefrom an easement for road purposes in favor of the public over any portion thereof included in public roads.

PROPERTY NO. V

An undivided 1/4 of 1% interest in and to all oil, gas and other hydrocarbons in and under and that may be produced from the following described real property situated in the County of Ventura, State of California:

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That portion of Lot 3, Tract B of Rancho Canada Larga, in the County of Ventura, State of California, according to the map thereof recorded in the office of the County Recorder of said Ventura County in Book 1, page 202 of Miscellaneous Records, being more particularly described as follows:

Beginning at a point in the center line of Ventura Avenue, 60.00 feet wide, at the Southeast corner of the land conveyed to William A. Mays by deed dated March 30, 1906, recorded in Book 105, page 398 of Deed, from which point the Northeast corner of said Lot 3 bears North 14° 50' West 4.015 chains distant; thence,

1st - South 75° 10' West 21.82 chains along the Southerly line of the land so conveyed to William A. Mays to a post set in line No. 5 of the final survey of Rancho Canada Larga; thence,

2nd - South 14° 45' East 0.5606 chains, more or less, along said line No. 5, to the Northwest corner of the land conveyed to Santa Ana Water Company by deed recorded March 12, 1887, in Book 18, page 441 of Deeds, from which station No. 6 of the final survey of Rancho Canada Larga bears South 14° 45' East 5.69 chains distant; thence,

3rd - North 75° 10' East along the Northerly line of the land so conveyed to Santa Ana Water Company and along the Northerly line of the land conveyed to Henry Sparks by deed recorded June 21, 1930, in Book 316, page 209 of Official Records, to a point in the center line of Ventura Avenue; thence,

4th - North 14° 50' West 0.5606 chains, more or less, along the center line of Ventura Avenue, to the point of beginning.

Beginning at the Southeast corner of said Lot 3; thence along the South line of said Lot 3,

1st - South 75° 10' West 16.02 chains to the Southeast corner of the tract of land conveyed to Santa Ana Water Company, by deed recorded in Book 18, page 441 of Deeds; thence along the Northeast line of said parcel so conveyed,

2nd - North 32° West 3.391 chains to a point in the South line of that parcel of land conveyed to Nathan B. Smith, by deed recorded August 28, 1907, in Book 110, page 259 of Deeds; thence along the South line of said parcel of land so conveyed to Nathan B. Smith,

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Law Offices
BARLING, HALL
AND A SUTE
Los Angeles

97938

3rd - North 75° 10' East 17.65 chains to a point in the center line of Ventura Avenue, being the East line of said Lot 3 above mentioned; thence along the center line of said Ventura Avenue and the East line of said Lot 3,

4th - South 14° 50' East 5.771 chains to the point of beginning.

EXCEPTING THEREFROM that certain strip or parcel of land 40.00 feet wide, as conveyed to The Ventura and Ojai Valley Railroad Company, by deed dated January 7, 1899, recorded in Book 57, page 474 of Deeds.

To have and to hold said property, together with all and singular the rights and appurtenances thereto for a period of 50 years from and after April 10, 1940, or as long thereafter as oil and gas is produced from said property.

PROPERTY NO. VI

An undivided 1/4 of 1% interest in and to all minerals, oil, gas, gasoline, or other hydrocarbon substances lying in, on, under or ever hereafter saved, produced and sold from that certain real property situated in the County of Los Angeles, State of California, more particularly described as follows:

Block Two (2) of Signal Hill, in the City of Signal Hill, in the County of Los Angeles, State of California, as per Map recorded in Book 9, Pages 2 and 3 of Maps in the Office of the County Recorder of said County.

PROPERTY NO. VII

An undivided 1/2 of 1% interest in and to all minerals, oil, gas, gasoline, or other hydrocarbon substances lying in, on, under or ever hereafter saved, produced and sold from that certain real property situated in the County of Los Angeles, State of California, more particularly described as follows:

Lot Seven (7) Block Eleven (11), of Tract Twenty-nine Hundred Sixty-four (2964) as per map recorded in Book 37, Page 35 of Maps, in the office of the County Recorder of said County and State.

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97939

PROPERTY NO. VIII

An undivided 1% interest in and to all oil, gas or other hydrocarbon substances lying in, on, under or ever hereafter saved, produced or sold from that certain real property situated in the County of Orange, State of California, more particularly described as follows:

Lots One (1) and Three (3) in Block Four Hundred Sixteen (416) of "Huntington Beach, Seventeenth St. Section", in the City of Huntington Beach, California, as per map thereof recorded in Book 4, page 10 of Miscellaneous Maps, Records of Orange County, California, excepting the northwesterly 50 feet thereof.

44 shares American Cyanamid Company, common

12 shares The Associates, Ltd., capital

8 shares Beta Omega of Delta Tau Delta Building and Loan Association, capital

5,150 shares Central California Communications Corporation, common

60 shares Central Illinois Public Service Company, common

50 shares Crestview Estates, Inc., capital

40 shares Diamond International Corporation, common

1.5 share Dorrington, Inc., capital

808 shares First Investment Service Co., capital

24 shares General Foods Corporation, common

200 shares Investors Capital Corporation, Class B common

1,200 shares The Nieco Company, capital

1,915 shares San Joaquin Estates, Inc., capital

5 shares Selling Products, capital

132 shares Signal Companies, common

24.72 shares Teledyne, Inc., common

An undividad 7.8125% interest in and to moneys deposited to the credit of The Tustin Company in a revolving fund administered by the Orange Products Division of Sunkist Growers, Incorporated, and payable to Bradford Bros., Inc., or its successor in interest for disbursement to Crocker-Citizens National Bank, Fifth and Spring Office, Los Angeles, California, Escrow No. 400-274-L.

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DARLING, HALL, RAE & GUTE
Los Angeles

97938

$8,840.98 income cash plus interest thereon of $455.34 and 4% on $8,056.44 from December 14, 1970

Residue of income cash received after February 15, 1971

Residue of cash

11. A lien is hereby imposed upon the assets distributed to the Trustees for the unpaid portion of the contingent Creditor's Claim of MARIE E. SHATTUCK against the Estate hereinafter becoming due, and the Trustees are authorized and instructed to pay from time to time all remaining amounts which become due under said claim from the principal of the Trust Estate.

12. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK are hereby ordered and instructed, upon receipt of the assets distributed to them as Testamentary Trustees, to receive distribution of income cash in its form as income and to hold, administer and distribute the same in accordance with the provisions of the Trust relating to the current distribution of income.

DATED: 8-18-1971

DOWDS

Judge of the Superior Court

NORMAN R. DOWDS

THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED IS A FULL, TRUE AND CORRECT COPY OF THE ORIGINAL ON FILE AND OF RECORD IN MY OFFICE, SAME HAVING BEEN FILED AUG 19 1971 AND ENTERED AUG 20 1971 IN PROBATE DECREE BOOK 1979 PAGE 0228

ATTEST AUG 24 1971 LS

WILLIAM G. SHARP County Clerk and Clerk of the Superior Court of the State of California, in and for the County of Los Angeles.

BY E. Sinnott DEPUTY

RECORDER'S MEMO: Legibility of writing, Typing or Printing UNSATISFACTORY In this document when received For Record.

Law Offices DARLING, HALL, RAE & GUTE Los Angeles

END RECORDED DOCUMENT. W. O. BRADLEY, COUNTY RECORDER

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO

Mr. and Mrs. Thomas J. Boyle
14740 Highway 71
Lake Elsinore, California

160645

Title Order No. Escrow No. 1110-M

RECEIVED FOR RECORD AT 9:08 O'CLOCK A.M. FIRST AMERICAN TITLE COMPANY OF RIVERSIDE SEP 4 1980 160645

SURVEY MONUMENT FEE

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned declares that the documentary transfer tax is $ 27.50 and is
☒ computed on the full value of the interest or property conveyed, or is
☐ computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale. The land, tenements or realty is located in
☒ unincorporated area ☐ city of , and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

VIRGINIA GARDNER, a widow

hereby GRANT(S) to

THOMAS JOSEPH BOYLE AND BRIDGET RHETA BOYLE, husband and wife as joint tenants

the following described real property in the county of Riverside, state of California:

LEGAL DESCRIPTION ATTACHED HERETO AND MADE A PART HEREOF:

15349.352-1

Dated July 2, 1980

Virginia Gardner
VIRGINIA GARDNER

STATE OF CALIFORNIA
COUNTY OF Riverside } ss.

On July 18, 1980 before me, the undersigned, a Notary Public in and for said County and State, personally appeared Virginia Gardner

known to me to be the person whose name is subscribed to the within instrument, and acknowledged that she executed the same.

Marilyn Wiley
Signature of Notary

FOR NOTARY SEAL OR STAMP

OFFICIAL SEAL
MARILYN WILEY
NOTARY PUBLIC - CALIFORNIA
RIVERSIDE COUNTY
My Comm. Expires Mar. 17, 1983

Assessor's Parcel No.

MAIL TAX STATEMENTS TO PARTY SHOWN ON FOLLOWING LINE. IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE

Name Street Address City & State

CAL-1 (Rev. 3-79)

160645

In the unincorporated area of the County of Riverside, State of California, described as follows:

That portion of the Southwest quarter of the Northwest quarter of Section 16, Township 5 South, Range 5 West, San Bernardino Base and Meridian, described as follows:

BEGINNING at a point on the West line of the Southwest quarter of the Northwest quarter of said Section at its intersection with the Southwesterly line of that certain 40 foot strip of land granted to the Temescal Water Company, by Deed recorded May 22, 1897 in Book 58 page 292 of Deeds, Records of Riverside County, California;
THENCE Southerly on the Westerly line of said Southwest quarter of the Northwest quarter of said Section, 100 feet;
THENCE South 62° 50' East, 150 feet;
THENCE Northerly parallel with the Westerly line of said Southwest quarter of the Northwest quarter, 100 feet to the Southwesterly line of said 40 foot strip granted to Temescal Water Company;
THENCE North 62° 50' West on said Southwesterly line, 150 feet to the Point of Beginning:

EXCEPTING therefrom one-half interest of the minerals, oil and hydrocarbon rights in and under said property, reserved in the Deed from Concordia Ranches and Storms, a corporation, recorded May 4, 1950 in Book 1769 page 453 of Official Records of Riverside County, California.

* * * * * * * * * * *

END RECORDED DOCUMENT. DONALD D. SULLIVAN, COUNTY RECORDER

138376

RECORDING REQUESTED BY

ATTORNEY

AND WHEN RECORDED MAIL TO

Name Mr. & Mrs. William M. Smith
Address 1671 James Drive
City & State Carlsbad, CA. 92008

RECEIVED FOR RECORD AT 11:00 O'CLOCK A.M.
JUN 25 1985
Recorded in Official Records of Riverside County, California
William E. Conerly
RECORDER
Fee $

Title Order No. ... Escrow No. ...

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO

Name Mr. & Mrs. William M. Smith
Address 1671 James Drive
City & State Carlsbad, CA. 92008

Quitclaim Deed

THE UNDERSIGNED GRANTOR(S) DECLARE(S)
DOCUMENTARY TRANSFER TAX is $-0- Change in manner of holding title
☒ ... unincorporated area ☐ City of ...
Parcel No. 591160021-1 ...
☐ computed on full value of property conveyed, or
☐ computed on full value less value of liens or encumbrances remaining at time of sale and

WITHOUT CONSIDERATION, WILLIAM M. SMITH AND ELAINE K. SMITH, husband and wife as community property

hereby REMISE, RELEASE AND FOREVER QUITCLAIM to WILLIAM K. SMITH and ELAINE K. SMITH, Co-Trustees under Declaration of Trust dated 6-05-85

the following described real property in the county of Riverside, state of California:

That portion of the North Half of the Southwest Quarter of Section 16, Township 5 South, Range 5 West, SAN BERNARDINO MERIDIAN, as shown by U.S. Government Survey approved August 29, 1890, described as follows: . . ."

-COMPLETE LEGAL DESCRIPTION SET FORTH IN EXHIBIT "A" ATTACHED HERETO AND INCORPORATED HEREIN BY REFERENCE THERETO-

THIS CONVEYANCE IS TO A REVOCABLE TRUST CREATED BY THE GRANTORS AND DOES NOT CONSTITUT CHANGE IN OWNERSHIP AND IS NOT SUBJECT TO REASSESSMENT PURSUANT TO REVENUE AND TAXATION CODE SECTION 62.

Dated June 5, 1985

William M. Smith
Elaine K. Smith
ELAINE K. SMITH

STATE OF CALIFORNIA
COUNTY OF SAN DIEGO } ss
On June 5, 1985 before me, the undersigned, a Notary Public in and for said County and State, personally appeared WILLIAM M. SMITH and ELAINE K. SMITH

known to me to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged that they executed the same

Earl H. Thompson
EARL H. THOMPSON, Notary Public

OFFICIAL SEAL
EARL H. THOMPSON
NOTARY PUBLIC - CALIF.
SAN DIEGO COUNTY
My commission expires Dec. 22, 1987

Order No.
Escrow No.
Loan No.

WHEN RECORDED MAIL TO:

Angela Cornelio
2262 S. Air Drive
Santa Ana, CA 92705

DOC # 1999-329940
07/23/1999 08:00A Fee:15.00
Page 1 of 4
Recorded in Official Records
County of Riverside
Gary L. Orso
Assessor, County Clerk & Recorder

DOCUMENTARY TRANSFER TAX $ -0-
... Computed on the consideration or value of property conveyed; OR
... Computed on the consideration or value less liens or encumbrances remaining at time of sale.
Exempt Transfer to a Trust for the Benefit of the Transferor
Signature Below

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

Angela Cornelio, a Single Woman

hereby GRANT(S) to ANGELES CORNELIO KEELER, as Trustee of the ANGELA CORNELIO LIVING TRUST, UDT 7/13/99

the real property in the City of Unincorporated Area
County of Riverside, State of California, described as

That Portion of Section 16, Township 5 South, Range 5 West, San Bernardino Meridian, According to the Official Plat thereof, more completely described as Exhibit "A" attached hereto.
APN: 391-120-002; 91-120-022; 391-120-024; 391-120-025 and 391-120-016.

Dated July 13, 1999

Angela Cornelio
ANGELA CORNELIO

STATE OF CALIFORNIA
COUNTY OF Orange

On July 19, 1999 before me,
Sonia Livingston
personally appeared Angela Cornelio

personally known to me (or 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.

WITNESS my hand and official seal.
Signature Sonia Livingston

SONIA LIVINGSTON
Comm. #1210712
NOTARY PUBLIC-CALIFORNIA
Orange County
My Comm. Expires March 17, 2001

MAIL TAX STATEMENTS TO:
SAME AS ABOVE

1999 JUL 23 PM 8:00
RIVERSIDE

EXHIBIT "A"

LEGAL DESCRIPTION

PARCEL 1:

THAT PORTION OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH QUARTER CORNER OF SAID SECTION 16;

THENCE SOUTH ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 16 TO THE SOUTHEAST CORNER THEREOF;

THENCE WEST ON THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 16. ALSO BEING THE NORTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 2 IN DEED TO WILLIAM M. SMITH, ET UX, RECORDED MAY 10, 1965 AS INSTRUMENT NO 53887 OF OFFICIAL RECORDS;

THENCE SOUTH ON THE EAST LINE OF SAID PARCEL 2 TO THE SOUTHEAST CORNER THEREOF;

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 2 TO THE SOUTHWEST CORNER THEREOF, ALSO BEING THE SOUTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 3 IN DEED TO JOSE QUINTANA, ET UX, RECORDED MARCH 26, 1981 AS INSTRUMENT NO 53001 OF OFFICIAL RECORDS;

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 3 OF THE SOUTHWEST CORNER THEREOF, BEING ON THE EAST LINE OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED JUNE 15, 1982 AS INSTRUMENT NO. 102585 OF OFFICIAL RECORDS.

THENCE SOUTH ON SAID EAST LINE TO THE MOST EASTERLY CORNER OF LAST SAID LAND.

THENCE WEST ON THE SOUTH LINE OF LAST SAID LAND TO THE MOST EASTERLY CORNER OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED FEBRUARY 16, 1982 AS INSTRUMENT NO 26920 OF OFFICIAL RECORDS.

THENCE SOUTHWESTERLY ON THE SOUTHEASTERLY LINE OF LAST SAID LAND TO THE MOST SOUTHERLY CORNER THEREOF.

THENCE NORTHWEST ON THE SOUTHWEST LINE OF LAST SAID LAND TO THE WEST LINE OF SAID SECTION 16;

THENCE NORTH ON SAID WEST LINE TO THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER;

THENCE EAST ON THE NORTH LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID NORTHWEST QUARTER;

THENCE NORTH ON THE WEST LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTH LINE OF SAID SECTION 16;

THENCE EAST ON SAID NORTH LINE TO THE POINT OF BEGINNING.

EXCEPT A STRIP OF LAND 40.00 FEET IN WIDTH, GRANTED TO THE TEMESCAL WATER COMPANY BY DEED RECORDED MAY 22, 1897, IN BOOK 58, PAGE 292 OF DEEDS, BEING 20.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT 1,004.00 FEET EAST OF THE QUARTER SECTION CORNER ON THE WEST LINE OF SAID SECTION;

THENCE NORTH 12.25 DEGREES 00'00" WEST 383.00 FEET;

THENCE NORTH 62 DEGREES 50'00" WEST 1,010.00 FEET, TO THE WEST LINE OF SAID SECTION;

ALSO EXCEPT THE PORTION THEREOF DESCRIBED AS FOLLOWS:

[redacted]
FEET

THENCE SOUTH 62 DEGREES 50'00" EAST 150.00 FEET.

THENCE NORTHERLY, PARALLEL WITH THE WESTERLY LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER 100.00 FEET, TO THE SOUTHWESTERLY LINE OF SAID 40.00 FOOT STRIP GRANTED TO TEMESCAL WATER COMPANY.

THENCE NORTH 62 DEGREES 50' 00" WEST, ON SAID SOUTHWESTERLY LINE 150.00 FEET, TO THE POINT OF BEGINNING.

EXHIBIT "A" - PAGE 2

[redacted]

RECORDED IN OFFICIAL RECORDS
RIVERSIDE

7 23 99

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND LYING WITHIN THE SOUTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 16 AND WITHIN THAT PORTION OF THE SOUTHWEST QUARTER OF SAID SECTION 16 LYING WEST OF THE WEST LINE OF THE RIGHT OF WAY TO THE TEMESCAL WATER COMPANY, ONE-HALF OF THE MINERALS, OIL AND HYDROCARBON RIGHTS IN AND UNDER SAID PROPERTY, RESERVED IN DEED FROM CONCORDIA RANCHES AND STORES, A CORPORATION, RECORDED MAY 4, 1950 IN BOOK 1169, PAGE 453 OF OFFICIAL RECORDS.

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND WITHIN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER ALL OIL, GAS, OIL SHALE, COAL, PHOSPHATE, SODIUM, GOLD, SILVER AND ALL OTHER MINERAL DEPOSITS, AS RESERVED BY THE STATE OF CALIFORNIA IN PATENT RECORDED JUNE 23, 1947 IN BOOK 836, PAGE 538 OF OFFICIAL RECORDS.

PARCEL 2:

THAT PORTION OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 3 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, AS SHOWN BY UNITED STATES GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS

[redacted]

THENCE NORTH 89° 33' 50" EAST, 349.83 FEET; THENCE ALONG A TANGENT CURVE CONCAVE TO THE SOUTHWEST, WITH A RADIUS OF 440 FEET, 139.85 FEET, TO THE EASTERLY LINE OF SAID PARCEL CONVEYED TO THE STATE OF CALIFORNIA AT A POINT THAT BEARS SOUTH 5° 14' EAST, 37.86 FEET, FROM THE TRUE POINT OF BEGINNING, THENCE NORTH 5° 14' WEST, 37.86 FEET, TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION LYING WESTERLY OF THE SOUTHERLY EXTENSION OF THE EASTERLY LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION.

PURSUANT TO THAT CERTAIN CONDITIONAL CERTIFICATE OF COMPLIANCE #2458 RECORDED ON FEBRUARY 10, 1988 INSTRUMENT NO 36911, OFFICIAL RECORDS

EXHIBIT "A"- PAGE 3

[redacted]

3 7 9 9 4 0

7 23 99

RIVERSIDE

Order No.
Escrow No.
Loan No.

WHEN RECORDED MAIL TO:

Mrs. Angela Cornelio
2262 S. Air Drive
Santa Ana, CA 92705

DOC # 2003-462124
05/23/2003 08:00A Fee:15.00
Page 1 of 4
Recorded in Official Records
County of Riverside
Gary L. Orso
Assessor, County Clerk & Recorder

M	S	U	PAGE	SIZE	DA	PCOR	NCOR	SMF	MISC.
	1		4			✓			
					1				
A	R	L			COPY	LONG	REFUND	NCHG	EXAM

DOCUMENTARY TRANSFER TAX $ 0
..... Computed on the consideration or value of property conveyed; OR
..... Computed on the consideration or value less liens or encumbrances remaining at time of sale. Exempt Transfer to a Trust for the Benefit of the Transferor

Signature of Declarant or Agent determining tax — Firm Name

17

C
LM

TLP 100 DTT 9

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Angela Cornelio Zavala a unmarried woman. Known as "THE ANGELA CORNELIO ZAVALA REVOCABLE FAMILY LIVING TRUST r & t 11911"

hereby GRANT(S) to ANGELES CORNELIO KELLER, sole Trustee, or her successors in trust, under the ANGELA CORNELIO LIVING TRUST, dated July 13, 1999, and any amendments thereto

the real property in the City of Incorporated Area
County of Riverside , State of California, described as

Dated April 2, 2003

STATE OF CALIFORNIA
COUNTY OF Orange } ss.

On April 2, 2003 before me,
SONIA LIVINGSTON,
personally appeared
ANGELA CORNELIO,
personally known to me (or 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.

WITNESS my hand and official seal.

Signature

X Angela Cornelio
Angela Cornelio AKA
Angela Cornelio Zavala

SONIA LIVINGSTON
Comm. # 1404749
NOTARY PUBLIC - CALIFORNIA
ORANGE COUNTY
My Comm. Expires March 12, 2007

(This area for official notarial seal)

MAIL TAX STATEMENTS TO:
SAME AS ABOVE

1002 (1/94)

PARCEL 1:

THAT PORTION OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH QUARTER CORNER OF SAID SECTION 16:

THENCE SOUTH ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 16 TO THE SOUTHEAST CORNER THEREOF:

THENCE WEST ON THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 16. ALSO BEING THE NORTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 2 IN DEED TO WILLIAM M. SMITH, ET UX, RECORDED MAY 10, 1965 AS INSTRUMENT NO 53887 OF OFFICIAL RECORDS;

THENCE SOUTH ON THE EAST LINE OF SAID PARCEL 2 TO THE SOUTHEAST CORNER THEREOF;

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 2 TO THE SOUTHWEST CORNER THEREOF, ALSO BEING THE SOUTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 3 IN DEED TO JOSE QUINTANA, ET UX, RECORDED MARCH 26, 1981 AS INSTRUMENT NO 53001 OF OFFICIAL RECORDS:

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 3 OF THE SOUTHWEST CORNER THEREOF, BEING ON THE EAST LINE OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED JUNE 15, 1982 AS INSTRUMENT NO. 102585 OF OFFICIAL RECORDS.

THENCE SOUTH ON SAID EAST LINE TO THE MOST EASTERLY CORNER OF LAST SAID LAND.

THENCE WEST ON THE SOUTH LINE OF LAST SAID LAND TO THE MOST EASTERLY CORNER OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED FEBRUARY 16, 1982 AS INSTRUMENT NO 26920 OF OFFICIAL RECORDS.

THENCE SOUTHWESTERLY ON THE SOUTHEASTERLY LINE OF LAST SAID LAND TO THE MOST SOUTHERLY CORNER THEREOF.

HENCE NORTHWEST ON THE SOUTHWEST LINE OF LAST SAID LAND TO THE WEST LINE OF SAID SECTION 16;

THENCE NORTH ON SAID WEST LINE TO THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER:

THENCE EAST ON THE NORTH LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID NORTHWEST QUARTER:

THENCE NORTH ON THE WEST LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTH LINE OF SAID SECTION 16;

THENCE EAST ON SAID NORTH LINE TO THE POINT OF BEGINNING.

EXCEPT A STRIP OF LAND 40.00 FEET IN WIDTH, GRANTED TO THE TEMESCAL WATER COMPANY BY DEED RECORDED MAY 22, 1897, IN BOOK 58, PAGE 292 OF DEEDS, BEING 20.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT 1,004.00 FEET EAST OF THE QUARTER SECTION CORNER ON THE WEST LINE OF SAID SECTION:

THENCE NORTH 12.25 DEGREES 00'00" WEST 383 00 FEET;

THENCE NORTH 62 DECREES 50'00" WEST 1,010 00 FEET. TO THE WEST LINE OF SAID SECTION;

ALSO EXCEPT THE PORTION THEREOF DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WEST LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION AT ITS INTERSECTION WITH THE SOUTHWESTERLY LINE OF THAT CERTAIN 40.00 FOOT STRIP OF LAND GRANTED TO THE TEMESCAL WATER COMPANY BY DEED RECORDED MAY 22, 1897 IN BOOK 58. PAGE 292 OF DEEDS THENCE SOUTHERLY ON THE WESTERLY LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION, 100.00 FEET

THENCE SOUTH 62 DEGREES 50'00" EAST 150.00 FEET.

THENCE NORTHERLY, PARALLEL WITH THE WESTERLY LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER 100.00 FEET, TO THE SOUTHWESTERLY LINE OF SAID 40 00 FOOT STRIP GRANTED TO TEMESCAL WATER COMPANY.

THENCE NORTH 62 DEGREES 50' 00" WEST, ON SAID SOUTHWESTERLY LINE 150 00 FEET, TO THE POINT OF BEGINNING.

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND LYING WITHIN THE SOUTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 16 AND WITHIN THAT PORTION OF THE SOUTHWEST QUARTER OF SAID SECTION 16 LYING WEST OF THE WEST LINE OF THE RIGHT OF WAY TO THE TEMESCAL WATER COMPANY, ONE-HALF OF THE MINERALS, OIL AND HYDROCARBON RIGHTS IN AND UNDER SAID PROPERTY, RESERVED IN DEED FROM CONCORDIA RANCHES AND STORES, A CORPORATION, RECORDED MAY 4, 1950 IN BOOK 1169, PAGE 453 OF OFFICIAL RECORDS.

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND WITHIN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER ALL OIL, GAS, OIL SHALE, COAL, PHOSPHATE, SODIUM, GOLD, SILVER AND ALL OTHER MINERAL DEPOSITS, AS RESERVED BY THE STATE OF CALIFORNIA IN PATENT RECORDED JUNE 23, 1947 IN BOOK 836, PAGE 538 OF OFFICIAL RECORDS.

PARCEL 2:

THAT PORTION OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, AS SHOWN BY UNITED STATES GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS

COMMENCING AT THE NORTHEAST CORNER OF THE WEST HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION; THENCE NORTH 89º 28' 48" WEST. 559.72 FEET. TO THE NORTHEAST CORNER OF THAT CERTAIN PARCEL OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED AUGUST 10, 1955 IN BOOK 1779, PAGE 81 OF OFFICIAL RECORDS. RIVERSIDE COUNTY RECORDS. TO THE TRUE POINT OF BEGINNING, THENCE NORTH 89º 28' 48" WEST. 484 FEET TO THE NORTHWEST CORNER OF SAID PARCEL; THENCE SOUTH Oº 09' 07" WEST. 23.77 FEET.

THENCE NORTH 89º 33' 50" EAST, 349.83 FEET; THENCE ALONG A TANGENT CURVE CONCAVE TO THE SOUTHWEST, WITH A RADIUS OF 440 FEET, 139.85 FEET, TO THE EASTERLY LINE OF SAID PARCEL CONVEYED TO THE STATE OF CALIFORNIA AT A POINT THAT BEARS SOUTH 5º 14' EAST, 37.86 FEET, FROM THE TRUE POINT OF BEGINNING, THENCE NORTH 5º 14' WEST, 37.86 FEET, TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION LYING WESTERLY OF THE SOUTHERLY EXTENSION OF THE EASTERLY LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION.

PURSUANT TO THAT CERTAIN CONDITIONAL CERTIFICATE OF COMPLIANCE #2458 RECORDED ON FEBRUARY 10, 1988 INSTRUMENT NO 36911, OFFICIAL RECORDS

Site Name: Proposed Alberhill Substation

Inquiry Number: 2587181.13
09/29/2009

The EDR Environmental LienSearch™ Report

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

PROPOSED ALBERHILL SUBSTATION
14116 Temescal Canyon Rd
Lake Elsinore, CA 92530

RESEARCH SOURCE

Source 1: Riverside County

PROPERTY INFORMATION

Deed 1:

Type of Deed:	Grant Deed
Title is vested in:	Angeles Cornelio Keller, sole Trustee, under the Angela Cornelio Living Trust, dated July 13, 1999
Deed Dated:	04/02/2003
Deed Recorded:	05/23/2003
Instrument:	2003-462124

Legal Description: THAT PORTION OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 2003-462124, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

Legal Current Owner: **Angeles Cornelio Keller, sole Trustee, under the Angela Cornelio Living Trust, dated July 13, 1999**

Property Identifiers: *391-120-026, 391-120-016*

Deed 1:

Type of Deed:	Grant Deed
Title is vested in:	Angeles Cornelio Keeler, as Trustee of the Angela Cornelio Living Turst, UDT 7/13/99
Deed Dated:	07/13/1999
Deed Recorded:	07/23/1999
Instrument:	1999-329940

Legal Description: PORTION OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 1999-329940, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

Legal Current Owner: **Angeles Cornelio Keeler, as Trustee of the Angela Cornelio Living Turst, UDT 7/13/99**

Property Identifiers: *391-120-002, 391-120-022, 319-120-024, 391-120-025, 391-120-016*

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Deed:

Type of Deed:	Deed
Title is vested in:	EVMWD
Deed Dated:	08/01/1989
Deed Recorded:	08/01/1989
Instrument:	0270174

Legal Description: 1.27 Acres. ALL THAT PORTION OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 97938, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

Legal Current Owner: **EVMWD**

Property Identifiers: *391-120-015*

Deed:

Type of Deed:	Quit Claim Deed
Title is vested in:	William K. Smith and Elaine K. Smith, Co-Trustees under Declaration of Trust date 6-05-85
Deed Dated:	06/05/1985
Deed Recorded:	06/25/1985
Instrument:	138376

Legal Description: THAT PORTION OF NORTH HALF OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 138376, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

Legal Current Owner: **William K. Smith and Elaine K. Smith, Co-Trustees under Declaration of Trust date 6-05-85**

Property Identifiers: *391-120-023, 391-160-021*

Deed:

Type of Deed:	Grant Deed
Title is vested in:	Thomas Joseph Boyle and Bridget Rheta Boyle, husband and wife as joint tenants
Deed Dated:	07/02/1980
Deed Recorded:	09/04/1980
Instrument:	160645

Legal Description: ALL THAT PORTION OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 160645, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

Legal Current Owner: **Thomas Joseph Boyle and Bridget Rheta Boyle, husband and wife as joint tenants**

Property Identifiers: *391-120-003*

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Deed:

Type of Deed:	Probate
Title is vested in:	Eleanor J. Shattuck, et al
Deed Dated:	08/30/1971
Deed Recorded:	08/30/1971
Instrument:	97938

Legal Description: ALL THAT PORTION OF SW ¼ OF SECTION 16 TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN. BEING MORE FULLY DESCRIBED IN INSTRUMENT NO. 97938, IN THE DEED RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

Legal Current Owner: **Eleanor J. Shattuck, et al**

Property Identifiers: *391-160-022*

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

EDR Environmental LienSearch™ Report

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:
Recorded:
Book:
Page:
Docket:
Volume:
Instrument:
Comments:
Miscellaneous:

C. The Account should be settled and allowed, the Report should be approved, the Petitions should be granted and all acts of the Executrices reported in detail in the Account and Report, including their acts in receiving proceeds in the dissolution of three corporations and two partnerships and in computing the distributive shares of the Estate, should be approved and final distribution of the Estate should be ordered as follows:

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

1. The First and Final Report of the Executrices is in all respects approved and the First and Final Account of the Executrices is hereby approved as filed.

2. All acts of the Executrices, including their acts in receiving proceeds in the dissolution of three corporations and two partnerships and in computing the distributive shares of the Estate, reported in detail in the Account and Report are hereby approved.

3. The sales of fractional shares of stock of Teledyne, Inc., reported by the Executrices, are hereby approved.

4. The sale as depreciating personal property of a 1960 Cadillac Coupe de Ville automobile reported by the Executrices is hereby approved and the Executrices are authorized to execute all documents convenient or necessary in order to transfer title to the property.

5. Notice to Creditors has been duly given as required by law.

6. The Executrices are hereby authorized and directed to charge $371.16 each against GEORGIA M. CULBARE and ELIZABETH S. ISAAK as and for Inheritance, Additional and Federal Estate Taxes, payable by and apportionable to each of them, and the Executrices are hereby authorized and directed to collect those amounts from those persons by deduction from the income accrued during administration which is distributable to them as beneficiaries of the Testamentary Trust

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herein established.

7. The allocation of fiduciary income taxes entirely to principal in determining distributable income accumulated during administration is hereby approved.

8. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, as Executrices, are authorized and instructed to pay to ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK the sum of $8,423.69 as their statutory commissions as Executrices, to be divided equally between them.

9. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, as Executrices, are authorized and instructed to withhold the sum of $25.00 to meet closing expenses of administration.

10. ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S KAAK, as Executrices, are hereby ordered and instructed, in accordance with the Will of the decedent, to make final distribution of the Estate of the decedent, including the residue of cash after the payment of the commissions awarded hereby and expenses of administration, and after adjustment for proration of death taxes, by distributing all of the assets of the Estate as hereinafter set forth to the following persons and for the following purposes:

To ELEANOR J. SHATTUCK:

One 1964 Buick Riviera 2-door hardtop coupe automobile, engine No. 7K1095881

Miscellaneous household furniture, furnishings and equipment

$9,490.03 cash

4.3833% of interest earned on deposits in financial institutions after February 15, 1971

A 4.3833% remainder interest upon the death or remarriage of MARIE E. SHATTUCK in and to any portion of $5,690.10 not paid to MARIE E. SHATTUCK after February 15, 1971, in accordance with her Creditor's Claim filed against the decedent's Estate

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To THE UNIVERSITY OF REDLANDS to be added to the "Edward S. Shattuck and Mary Jane Shattuck Scholarship":
$7,525.00 cash plus interest thereon at 4% from December 14, 1966

To THE UNIVERSITY OF SOUTHERN CALIFORNIA for the benefit of the Law School to be added to the "Edward S. Shattuck and Eleanor J. Shattuck Scholarship":
$8,525.00 cash plus interest thereon at 4% from December 14, 1966

To ELEANOR J. SHATTUCK, GEORGIA M. CULHANE and ELIZABETH S. KAAK, IN TRUST, with the following powers and authorities and for the following uses and purposes, the hereinafter described property:

A. Regarding the trustees, it is directed:

1. In the event any one of the trustees above named refuses to act as trustee, becomes disqualified, or dies, resigns, or is removed as such trustee, the other two trustees above named are designated and appointed as successor co-trustees, subject to Court approval.

2. In the event any two of the trustees above named refuse to act as trustee, become disqualified, or die, resign, or are removed as such trustees, the remaining trustee above named is designated and appointed as sole successor trustee, subject to Court approval.

3. In the event all of the trustees above named refuse to act as trustee, become disqualified, or die, resign, or are removed as such trustees, the following persons in the following order are designated and appointed as sole successor trustee, subject to Court approval, to serve in their place and stead, in each instance to succeed to the trusteeship only in the event his predecessor in order predeceases the date on which he would have succeeded as trustee, refuses to act as trustee, becomes disqualified, or dies, resigns or is removed subsequent to his

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appointment:

A. HUGH W. DARLING;

B. GEORGE G. GUTE;

C. MATTHEW S. BAE, JR.;

D. DONALD KEITH HALL;

E. THOMAS F. CALL;

F. UNITED CALIFORNIA BANK, a California corporation, of Los Angeles, California, and its successors by merger, consolidation or otherwise.

4. No bond shall be required of any of the individual trustees and successor trustees named, regardless of the combinations in which they may serve and of the fact that one of them may be serving as sole trustee.

B. The income and principal of the trust estate shall be used and distributed as follows:

1. All expenses attending the maintenance, preservation, upkeep and development of the trust estate, including, without limiting the general, necessary legal expenses, travel and other expenses of the trustees and a reasonable management allowance for the trustees to be divided equally so long as there are more than one, shall be paid and discharged out of income, if sufficient, and if not, out of corpus.

2. Upon receipt thereof, the trustees shall divide the entire trust estate into three equal shares, designating one share by the name of ELEANOR J. SHATTUCK, one by the name of GEORGIA M. CULBANK, and one by the name of ELIZABETH S. KAAK.

3. The trustees, during the life of any share of this trust, shall distribute in not less frequent than quarterly intervals the entire net income of each share of the trust estate to the person by whose name the share is designated, or if such person is deceased or dies during the life of the share bearing such person's name, equally to or for the use of the issue of such

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person by right of representation.

4. Upon the death of ELEANOR J. SHATTUCK, the trustees shall distribute the entire remaining principal of the share designated by her name, together with any accumulated and undistributed income thereof, ratably to the other shares of the trust estate to be added to and become a part thereof, including the distribution of a portion to any persons who have received final distribution of any share of the trust estate.

5. Subsequent to the death of GEORGIA M. CULHANE or ELIZABETH S. KAAK, the trustees shall distribute in not less frequent than quarterly intervals to, or for the use or benefit of, the children of such deceased person, so much of the net income of the share of the trust estate designated by that deceased person's name as in their sole discretion may be required for the reasonable maintenance, comfort, support and education, including study at an institution of higher learning, of each of such children, after taking into consideration all other means of support available to them, until the youngest child of such deceased person living at any given time attains the age of twenty-five years. Any undistributed net income of such share of the trust estate shall be accumulated and added to the principal thereof.

6. If at any time, or times, during the life of any share of this trust, the person by whose name the share is designated, or if such person is deceased, or dies, the issue of such person who are entitled to receive the income from such share, shall be in need of additional moneys for reasonable maintenance, comfort, support or education, including study at an institution of higher learning, or for the expenses of accident, illness or other misfortune, the trustees may pay to or for the use or benefit of such person, or persons, such additional amount, or amounts, from the principal of such share as the trustees may deem proper and necessary up to and including the whole thereof.

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7. Subsequent to the death of GEORGIA M. GILHAM or ELIZABETH S. KNAK and upon the attainment of the age of twenty-five years by the youngest child of such deceased person living at any given time, or upon the death of a child of such deceased person before reaching twenty-five years when all other living children have theretofore attained the age of twenty-five years, the trustees shall distribute the entire remaining principal of the share designated by that deceased person's name together with any accumulated and undistributed income thereof to the "Grandchildren's Trust", which shall be established upon the first such distribution thereto.

8. Upon the establishment of the "Grandchildren's Trust" as hereinabove provided, the trustees shall divide the entire trust estate received by such "Grandchildren's Trust", and all later additions as the result of subsequent distributions thereto, into as many equal shares as there are grandchildren of EDWARD S. SHATTUCK then living and deceased grandchildren of EDWARD S. SHATTUCK who have left issue then living, each such share to be designated by the name of one of such grandchildren.

9. Subsequent to the establishment of the "Grandchildren's Trust", the trustees shall distribute in not less frequent than quarterly intervals the entire net income of each share into which it has been divided to, or for the use or benefit of, the person by whose name the share is designated, or, if such person be deceased, equally, share and share alike, by right of representation and not per capita, to, or for the use or benefit of, the issue of such person.

10. The principal, and any accumulated or undistributed income, of each share of the "Grandchildren's Trust" shall be distributed as follows:

a. To the person by whose name such share is designated upon having attained the age specified below, or if such

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person be deceased then equally, share and share alike, by right of representation and not per capita, to such person's issue at the time of such person's death:

(i) Age twenty-five, one-third thereof;

(ii) Age thirty, one-half of the remainder thereof;

(iii) Age thirty-five, the balance thereof.

b. If the person by whose name a share is designated is deceased and died without leaving issue surviving, or all issue of such person die before final distribution of such share is made in accordance with the foregoing provisions, then upon the death of such person without issue, or upon such failure of issue, the trustees shall distribute the then remaining balance of such share ratably to the other shares of the "Grandchildren's Trust", including the distribution of a portion to any persons who have received final distribution of any share thereof.

11. In any event, the entire trust shall terminate upon the death of the last survivor of ELEANOR J. SHATTUCK, GEORGIA M. CULHANE, ELIZABETH S. HAAK and the grandchildren of EDWARD S. SHATTUCK living at the time of the death of EDWARD S. SHATTUCK. Upon such termination, the entire remaining principal of each then existing share of the trust estate, together with any accumulated or undistributed income thereof, shall be distributed by the trustees to the then living persons who immediately prior to such termination were entitled to receive the income therefrom. If upon such termination no person hereinabove specified to receive distribution should survive, then the trustees shall distribute the entire remaining principal of the trust estate, together with any accumulated or undistributed income thereof, to the then living persons who would have been the heirs-at-law of EDWARD S. SHATTUCK under the California statutes of intestate succession then in force and effect had he died at the time of such termination

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and in the proportions specified by such laws.

C. No beneficiary under this trust shall assign, transfer, convey, anticipate, pledge, hypothecate or otherwise encumber her interest hereunder, and neither the principal of this trust nor any income therefrom shall be liable for any debt of any beneficiary, or be subject to any judgment rendered against any beneficiary, or to the process of any court in aid of execution of any judgment so rendered.

D. The trustees shall be vested with the following powers and discretions affecting the trust and the trust estate:

1. Except as specifically limited herein, and except for the additional authority herein conferred upon the trustees, the trustees shall have all authority with respect to the management and control of the trust estate conferred upon trustees by the laws of the state, or states, having jurisdiction over the trust estate or any part thereof affected;

2. To commingle the assets of the separate shares into which the trust estate may be divided, to make joint investments from such separate shares and to hold the investments and assets of such separate shares in undivided interests if in the sole discretion of the trustee it seems advisable;

3. To maintain and operate any business or income property, to repair, recondition and improve any property and to lease any portion of the trust estate for terms within or extending beyond the duration of the trust at such rentals or royalties and upon such terms and conditions as they may deem advisable;

4. To invest any funds available for investment or reinvestment in such securities or properties as the trustees in their judgment may deem advisable without limitation on the judgment of the trustees or without liability for the consequences of their acts performed in good faith;

5. To sell any part of the trust estate on such terms

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and conditions as the trustees may deem to be advisable. The trustees are requested, but not instructed or commanded, to maintain any income producing property forming a part of the trust estate without sale, unless a sale be advisable, and to reduce to cash or to convert into income producing property any non-income producing property, if desirable, and as soon as reasonably possible;

6. To continue to hold any property and to operate at the risk of the trust estate and not at the risk of the trustees any property or business received in this trust as long as they may deem advisable, the profits and losses therefrom to inure, or be chargeable, to the trust estate as a whole and not to the trustees;

7. To advance funds to this trust for any trust purpose, such advances with interest at current rates to be repaid out of principal or income and to reimburse themselves from principal or income for any loss or expense incurred by reason of their ownership or holding of property of this trust;

8. To borrow money for any trust purpose upon such terms and conditions as the trustees may deem proper and to obligate the trust estate for repayment; to encumber the trust estate or any of its property by mortgage, deed of trust, pledge, or otherwise, using such procedure to consummate the transaction as the trustees may deem advisable;

9. To exercise all voting powers and privileges under any securities and to participate in foreclosures, reorganizations, mergers, consolidations and liquidations;

10. To determine in their sole discretion what is principal or income of the trust estate and to apportion and allocate in their sole discretion receipts and expenses as between principal and income; to charge to the principal of the trust estate the full purchase price of any securities purchased at a

premium without the necessity of thereafter making any amortization of such premium;

11. Until the trustees shall receive from some person interested in this trust written notice of any death, birth, marriage or other event upon which the right to receive income or principal of the trust estate may depend, the trustees shall incur no liability for disbursements or distributions made or omitted in good faith;

12. Upon termination of this trust, in whole or in part, to partition and allot undivided interests, and to convey, assign and deliver to the persons entitled thereto the trust property in kind, or partly in kind and partly in cash, at values to be determined by the trustees, or in cash, after reduction to cash by sale, or in undivided interests;

13. If at any time during the life of this trust any beneficiary is a minor or an incompetent person, the trustees, in their sole discretion, may make any distribution of moneys provided for herein to such beneficiary, or any person having actual custody of such beneficiary, without the intervention of a guardian, or the trustees may themselves expend such moneys for such beneficiary, or the trustees may distribute to a guardian, but the trustees may, in their discretion, require such reports and take such steps as they may deem requisite to insure and enforce the due application of such moneys for the purposes of this trust;

14. The powers hereinbefore set forth are not intended and shall not be construed in any respect as in limitation of any powers conferred upon the trustees by law, but are intended and shall be construed as being in addition thereto;

15. In the event the trustees may deem it advisable to have their authority and powers enlarged or extended for any reason or purpose, the trustees are authorized to file an appropriate application therefor with a court of competent

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jurisdiction, and the trustees are authorized to comply with any order made in response to any such application.

The property distributed to said Trustees is as follows:

PROPERTY NO. I

All that real property in the City of Pasadena, County of Los Angeles, State of California, described as:

All that portion of Lots 1 and 2 of Tract No. 10709 as shown on map recorded in Book 169, pages 11 and 12 of Maps, in the office of the Recorder of said County, lying Westerly of the following described line:

Beginning at the Southerly terminus of that certain course in the Westerly line of Lot 2 of said Tract No. 10709, shown on said map as having a bearing of North 3° 06' 30" East and a length of 30 feet, being the beginning of a tangent curve therein shown as being concave to the East and having a radius of 67.00 feet; thence Southerly along said curve, 18.00 feet, to the true point of beginning, a radial to said point bears South 77° 42' 56" West; thence North 25° 48' 06" East 19.91 feet; thence North 0° 35' 49" East, 195.65 feet; thence North 5° 00' 49" East 54.30 feet; thence North 20° 29' 14" West, 63.88 feet; thence North 15° 11' 27" West, 53.34 feet; thence North 38° 19' East, 62.93 feet; thence North 81° 22' 09" East, 52.62 feet, to the intersection with the Northeasterly line of Lot 1 of said Tract No. 10709.

PROPERTY NO. II

The real property situated in the County of San Bernardino, State of California, described as follows:

Lot 202 of Tract No. 6397, as per map recorded in Book 61 of Maps, pages 30 to 35, inclusive, records of said County.

Excepting and witholding from the said realty all of the trees, and all of the roots, branches and parts thereof, growing on or that may hereafter grow, stand, or be upon any part of said

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lot above described. The grantee, his successors and assigns will however, as provided in that certain Declaration hereinafter referred to, do whatever is necessary for the maintenance, care, growth and development of each and every tree and will for such purpose expend such funds and engage such expert personnel as may be reasonably necessary to adequately maintain and care for such trees, and shall pay the cost and expense for the removal of any tree or trees, and indemnify and hold grantor harmless therefor. The said grantee, his successors and assigns shall pay before delinquency all taxes and assessments levied or laid upon the premises during the ownership thereof, together with and including all taxes, assessments or charges that may be hereafter levied or laid upon the trees or any of them herein referred to and growing or being upon said premises.

Also excepting and withholding from the said realty all the water and water rights in, under or flowing over said property, or appurtenant to, or to any part thereof, including the right to develop water thereon, transport or export water therefrom.

Subject to the covenants, conditions, restrictions and reservations contained in that certain Declaration made by Title Insurance and Trust Company, and recorded November 3, 1961, in Book 5577, page 422, Official Records; and subject to the provisions of that certain Declaration of Easement recorded August 17, 1961, in Book 5512, page 593, Official Records of said County, all of which are incorporated herein by reference to said Declarations with the same effect as though said Declarations were fully set forth herein.

PROPERTY NO. III

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

That portion of the North 1/2 of the Southwest 1/4 of Section 16, Township 5 South, Range 5 West, San Bernardino Base and Meridian, as shown by U. S. Government Survey approved August 29, 1890, described as follows:

Beginning at the Northeast corner of that certain parcel of land as conveyed to the State of California by Deed recorded August 8, 1955 in Book 1777, page 574 of Official Records of said County; said Northeast corner being also the Northeast

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corner of the West 1/2 of the Northeast 1/4 of the Southwest 1/4 of Section 16; thence along the North line of said State of California parcel of land North 89° 28' 48" West 359.72 feet to the Northwest corner thereof; said Northwest corner being also the Northeast corner of that certain parcel of land as conveyed to the State of California by Deed recorded August 10, 1955 in Book 1779, Page 81 of Official Records of said County; thence along the Easterly line of said last State of California parcel of land South 5° 14' East 37.86 feet; thence along a tangent curve concave Southwesterly with a radius of 440 feet through an angle of 36° 13' 39" a distance of 278.25 feet, thence South 35° 59' 31" East 85.74 feet; thence South 69° 57' 36" East 294.10 feet to the Easterly line of first said State of California parcel of land distant along said Easterly line South 1° 14' 33" West 363.28 feet from the point of beginning; thence along said Easterly line North 1° 14' 33" East 363.28 feet to the point of beginning, containing 2.80 acres, more or less.

SUBJECT TO: An exception and reservation unto the State of California of any and all rights of ingress to or egress from the real property herein conveyed to or from the freeway proposed to be constructed upon lands lying Southerly of said real property, provided, however, that said real property shall abut upon and have access to a frontage road which will be connected with said freeway only at such points as may be established by public authority;

AND ALSO SUBJECT TO: Any taxes and additional covenants, conditions, restrictions, reservations, and rights of way of record.

PROPERTY NO. IV

An undivided 1/2 interest in and to all minerals, oil and hydrocarbon rights in and under approximately 81.22 acres in the County of Riverside, State of California, described as follows:

PARCEL A: All that portion of the Southwest Quarter of Section 16, Township 5 South, Range 5 West, San Bernardino Base and Meridian, as shown by United States Government Survey, particularly described as follows:

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97938

Beginning at a point on the North line of said Southwest Quarter, 264 feet East of the Northwest corner thereof;
Thence Southeasterly along the Northeasterly line of the Elsinore-Corona Highway, 877 feet, more or less, to the Westerly line of the Right of Way of the Temescal Water Company;
Thence Northerly along said Westerly line, 461 feet, more or less, to a point on the Northerly line of said Southwest Quarter, 609 feet Easterly from the point of beginning;
Thence Westerly along said Northerly line, 609 feet to the point of beginning.

PARCEL B: The Southwest Quarter of the Northwest Quarter and the Southeast Quarter of Northwest Quarter of Section 16, Township 5 South, Range 5 West, San Bernardino Base and Meridian, as shown by United States Government Survey;

EXCEPTING from said Southwest Quarter of Northwest Quarter, a strip of land 40 feet in width, granted to the Temescal Water Company, by Deed recorded May 22, 1897 in Book 38, page 292 of Deeds, records of Riverside County, California, being 20 feet on each side of the following described center line:

Beginning at a point 1004 feet East of the Quarter section corner on the West line of said Section 16;
Thence North 12-1/2° West, 383 feet;
Thence North 62° 50' West, 1010 feet to the West line of said section;

ALSO EXCEPTING from said Southwest Quarter of Northwest Quarter, that portion thereof lying Southwesterly of the Northeasterly line of the County Highway as conveyed by Deed recorded November 9, 1915 in Book 433, page 33 of Deeds, records of said Riverside County;

ALSO EXCEPTING therefrom an easement for road purposes in favor of the public over any portion thereof included in public roads.

PROPERTY NO. V

An undivided 1/4 of 1% interest in and to all oil, gas and other hydrocarbons in and under and that may be produced from the following described real property situated in the County of Ventura, State of California:

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- - -

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RAE & GUTE
Los Angeles

97938

That portion of Lot 3, Tract B of Rancho Canada Larga, in the County of Ventura, State of California, according to the map thereof recorded in the office of the County Recorder of said Ventura County in Book 1, page 202 of Miscellaneous Records, being more particularly described as follows:

Beginning at a point in the center line of Ventura Avenue, 60.00 feet wide, at the Southeast corner of the land conveyed to William A. Mays by deed dated March 30, 1906, recorded in Book 105, page 398 of Deed, from which point the Northeast corner of said Lot 3 bears North 14° 50' West 4.015 chains distant; thence,

1st - South 75° 10' West 21.82 chains along the Southerly line of the land so conveyed to William A. Mays to a post set in line No. 5 of the final survey of Rancho Canada Larga; thence,

2nd - South 14° 45' East 0.3606 chains, more or less, along said line No. 5, to the Northwest corner of the land conveyed to Santa Ana Water Company by deed recorded March 12, 1887, in Book 18, page 441 of Deeds, from which station No. 6 of the final survey of Rancho Canada Larga bears South 14° 45' East 5.69 chains distant; thence,

3rd - North 75° 10' East along the Northerly line of the land so conveyed to Santa Ana Water Company and along the Northerly line of the land conveyed to Henry Sparks by deed recorded June 21, 1930, in Book 316, page 209 of Official Records, to a point in the center line of Ventura Avenue; thence,

4th - North 14° 50' West 0.3606 chains, more or less, along the center line of Ventura Avenue, to the point of beginning.

Beginning at the Southeast corner of said Lot 3; thence along the South line of said Lot 3,

1st - South 75° 10' West 16.02 chains to the Southeast corner of the tract of land conveyed to Santa Ana Water Company, by deed recorded in Book 18, page 441 of Deeds; thence along the Northeast line of said parcel so conveyed,

2nd - North 32° West 5.391 chains to a point in the South line of that parcel of land conveyed to Nathan B. Smith, by deed recorded August 28, 1907, in Book 110, page 259 of Deeds; thence along the South line of said parcel of land so conveyed to Nathan B. Smith,

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ROE & ROTH
Los Angeles

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3rd - North 73° 10' East 17.69 chains to a point in the center line of Ventura Avenue, being the East line of said Lot 3 above mentioned; thence along the center line of said Ventura Avenue and the East line of said Lot 3,

4th - South 14° 50' East 5.771 chains to the point of beginning.

EXCEPTING THEREFROM that certain strip or parcel of land 40.00 feet wide, as conveyed to The Ventura and Ojai Valley Railroad Company, by deed dated January 7, 1899, recorded in Book 57, page 474 of Deeds.

To have and to hold said property, together with all and singular the rights and appurtenances thereto for a period of 50 years from and after April 10, 1940, or as long thereafter as oil and gas is produced from said property.

PROPERTY NO. VI

An undivided 1/4 of 1% interest in and to all minerals, oil, gas, gasoline, or other hydrocarbon substances lying in, on, under or ever hereafter saved, produced and sold from that certain real property situated in the County of Los Angeles, State of California, more particularly described as follows:

Block Two (2) of Signal Hill, in the City of Signal Hill, in the County of Los Angeles, State of California, as per Map recorded in Book 9, Pages 2 and 3 of Maps in the Office of the County Recorder of said County.

PROPERTY NO. VII

An undivided 1/2 of 1% interest in and to all minerals, oil, gas, gasoline, or other hydrocarbon substances lying in, on, under or ever hereafter saved, produced and sold from that certain real property situated in the County of Los Angeles, State of California, more particularly described as follows:

Lot Seven (7) Block Eleven (11), of Tract Twenty-nine Hundred Sixty-four (2964) as per map recorded in Book 37, Page 35 of Maps, in the office of the County Recorder of said County and State.

- - -

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Los Angeles

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PROPERTY NO. VIII

An undivided 1% interest in and to all oil, gas or other hydrocarbon substances lying in, on, under or ever hereafter saved, produced or sold from that certain real property situated in the County of Orange, State of California, more particularly described as follows:

Lots One (1) and Three (3) in Block Four Hundred Sixteen (416) of "Huntington Beach, Seventeenth St, Section", in the City of Huntington Beach, California, as per map thereof recorded in Book 4, page 10 of Miscellaneous Maps, Records of Orange County, California, excepting the northwesterly 50 feet thereof.

44 shares American Cyanamid Company, common

12 shares The Associates, Ltd., capital

8 shares Beta Omega of Delta Tau Delta Building and Loan Association, capital

5,150 shares Central California Communications Corporation, common

60 shares Central Illinois Public Service Company, common

50 shares Crestview Estates, Inc., capital

40 shares Diamond International Corporation, common

1.5 share Dorrington, Inc., capital

608 shares First Investment Service Co., capital

24 shares General Foods Corporation, common

200 shares Investors Capital Corporation, Class B common

1,200 shares The Nieto Company, capital

1,915 shares San Joaquin Estates, Inc., capital

5 shares Selling Products, capital

152 shares Signal Companies, common

24.72 shares Teledyne, Inc., common

An undivided 7.8125% interest in and to moneys deposited to the credit of The Tustin Company in a revolving fund administered by the Orange Products Division of Sunkist Growers, Incorporated, and payable to Bradford Bros., Inc., or its successor in interest for disbursement to Crocker-Citizens National Bank, Fifth and Spring Office, Los Angeles, California, Escrow No. 400-274-L.

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Law Offices BOELTER, HILL, DOLE & GUTH Los Angeles

97938

$8,840.98 income cash plus interest thereon of $435.34 and 4% on $8,056.44 from December 14, 1970

Residue of income cash received after February 15, 1971

Residue of cash

11. A lien is hereby imposed upon the assets distributed to the Trustees for the unpaid portion of the contingent Creditor's Claim of MARIE E. SHATTUCK against the Estate hereinafter becoming due, and the Trustees are authorized and instructed to pay from time to time all remaining amounts which become due under said claim from the principal of the Trust Estate.

12. ELEANOR J. SHATTUCK, GEORGIA M. CULBANE and ELIZABETH S. KAAK are hereby ordered and instructed, upon receipt of the assets distributed to them as Testamentary Trustees, to receive distribution of income cash in its form as income and to hold, administer and distribute the same in accordance with the provisions of the Trust relating to the current distribution of income.

DATED: 8-18-1971

Judge of the Superior Court

NORMAN R. DOWDS

THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED IS A FULL, TRUE AND CORRECT COPY OF THE ORIGINAL ON FILE AND OF RECORD IN MY OFFICE.
SAME HAVING BEEN FILED Aug 19 1971
AND ENTERED Aug 20 1971 IN PROBATE
DECREE BOOK 6477 PAGE 82 78
ATTEST AUG 24 1971 19
WILLIAM G. SHARP County Clerk and Clerk of the Superior Court of the State of California, in and for the County of Los Angeles.
BY E. Lemmel DEPUTY

RECORDER'S MEMO: Legibility of writing, Typing or Printing UNSATISFACTORY in this document when received For Record.

Law Offices
DARLING, HALL, ERB & KEITH
Los Angeles

-21-

END RECORDED DOCUMENT, REQ. GENERAL COUNTY RECORDER

160645

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO

Name: Mr. and Mrs. Thomas J. Boyle
Address: 14740 Highway 71
City: Lake Elsinore, California

Title Order No. _____ Escrow No. 1110-M

RECEIVED FOR RECORD AT 1:00 O'CLOCK P.M. 23 SEP 1980 IN BOOK _____ PAGE _____ RECORDER'S OFFICE OF RIVERSIDE COUNTY, CALIFORNIA

160645

SURVEY MONUMENT FEE $1.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned declares that the documentary transfer tax is $ 27.50 and is
☒ computed on the full value of the interest or property conveyed, or is
☐ computed on the full value less the value of liens or encumbrances remaining thereon at the time of sale. The land, tenements or realty is located in
☒ unincorporated area ☐ city of _____ and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

VIRGINIA GARDNER, a widow

hereby GRANT(S) to

THOMAS JOSEPH BOYLE AND BRIDGET ERETA BOYLE, husband and wife as joint tenants

the following described real property in the county of Riverside, state of California:

LEGAL DESCRIPTION ATTACHED HERETO AND MADE A PART HEREOF:

Dated July 8, 1980

Virginia Gardner
VIRGINIA GARDNER

STATE OF CALIFORNIA
COUNTY OF Riverside } ss.

On July 8, 1980 before me, the undersigned, personally appeared Virginia Gardner

known to me to be the person whose name is subscribed to the within instrument, and acknowledged that she executed the same.

Marilyn Wiley
Signature of Notary

FOR NOTARY SEAL OR STAMP

OFFICIAL SEAL
MARILYN WILEY
NOTARY PUBLIC-CALIFORNIA
RIVERSIDE COUNTY

Assessor's Parcel No. _____

MAIL TAX STATEMENTS TO PARTY SHOWN ON FOLLOWING LINE; IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE

Name _____ Street Address _____ City & State _____

CAL-A (Rev. 8-78)

160645

in the unincorporated area of the County of Riverside, State of California, described as follows:

That portion of the Southwest quarter of the Northwest quarter of Section 16, Township 5 South, Range 5 West, San Bernardino Base and Meridian, described as follows:

BEGINNING at a point on the West line of the Southwest quarter of the Northwest quarter of said Section at its intersection with the Southwesterly line of that certain 40 foot strip of land granted to the Temescal Water Company, by Deed recorded May 22, 1897 in Book 58 page 292 of Deeds, Records of Riverside County, California;
THENCE Southerly on the Westerly line of said Southwest quarter of the Northwest quarter of said Section, 100 feet;
THENCE South 62° 50' East, 150 feet;
THENCE Northerly parallel with the Westerly line of said Southwest quarter of the Northwest quarter, 100 feet to the Southwesterly line of said 40 foot strip granted to Temescal Water Company;
THENCE North 62° 50' West on said Southwesterly line, 150 feet to the Point of Beginning:

EXCEPTING therefrom one-half interest of the minerals, oil and hydrocarbon rights in and under said property, reserved in the Deed from Concordia Ranches and Stores, a corporation, recorded May 4, 1950 in Book 1169 page 453 of Official Records of Riverside County, California.

* * * * * * * * * * *

END RECORDED DOCUMENT. DONALD D. SULLIVAN, COUNTY RECORDER

138376

RECORDING REQUESTED BY

ATTORNEY

AND WHEN RECORDED MAIL TO

Name Mr. & Mrs. William M. Smith
Address 1671 James Drive
City & State Carlsbad, CA. 92008

RECEIVED FOR RECORD AT 11:30 O'CLOCK A.M.

JUN 25 1985

Recorded in Official Records of Riverside County, California

Title Order No. Escrow No.

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO

Name Mr. & Mrs. William M. Smith
Address 1671 James Drive
City & State Carlsbad, CA. 92008

Quitclaim Deed

THE UNDERSIGNED GRANTOR(S) DECLARE(S)
DOCUMENTARY TRANSFER TAX is -0- Change in manner of holding title
☐ unincorporated area ☐ City of
Parcel No. 391160021-1
☐ computed on full value of property conveyed, or
☐ computed on full value less value of liens or encumbrances remaining at time of sale and

WITHOUT CONSIDERATION, WILLIAM M. SMITH AND ELAINE K. SMITH, husband and wife as community property

hereby REMISE, RELEASE AND FOREVER QUITCLAIM to WILLIAM M. SMITH and ELAINE K. SMITH, Co-Trustees under Declaration of Trust dated 6-05-85

the following described real property in the county of Riverside, state of California:

That portion of the North Half of the Southwest Quarter of Section 16, Township 5 South, Range 5 West, SAN BERNARDINO MERIDIAN, as shown by U.S. Government Survey approved August 29, 1990, described as follows: . . ."

-COMPLETE LEGAL DESCRIPTION SET FORTH IN EXHIBIT "A" ATTACHED HERETO AND INCORPORATED HEREIN BY REFERENCE THERETO-

THIS CONVEYANCE IS TO A REVOCABLE TRUST CREATED BY THE GRANTORS AND DOES NOT CONSTITUT CHANGE IN OWNERSHIP AND IS NOT SUBJECT TO REASSESSMENT PURSUANT TO REVENUE AND TAXATION CODE SECTION 62.

Dated June 5, 1985

William M. Smith
Elaine K. Smith
ELAINE K. SMITH

STATE OF CALIFORNIA
COUNTY OF SAN DIEGO } ss

On June 5, 1985 before me, the undersigned, a Notary Public in and for said County and State, personally appeared WILLIAM M. SMITH and ELAINE K. SMITH

known to me to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged that they executed the same

Earl H. Thompson
EARL H. THOMPSON, Notary Public

OFFICIAL SEAL
EARL H. THOMPSON
NOTARY PUBLIC - CALIF.
SAN DIEGO COUNTY
My commission expires Dec. 23, 1987

Description: Riverside,CA Document-Year.DocID 1985.138376 Page: 1 of 2
Order: 4 Comment:

Order No.
Escrow No.
Loan No.

WHEN RECORDED MAIL TO:

Angela Cornelio
2262 S. Air Drive
Santa Ana, CA 92705

DOC # 1999-329940
07/23/1999 08:00A Fee:10.00
Page 1 of 4
Recorded in Official Records
County of Riverside
Gary L. Orso
Assessor, County Clerk & Recorder

DOCUMENTARY TRANSFER TAX $ -0-
Computed on the consideration or value of property conveyed; OR
Computed on the consideration or value less liens or encumbrances remaining at time of sale.
Exempt Transfer to a Trust for the Benefit of the Transferor
Signature Below

Tra- 037

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SC

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

Angela Cornelio, a Single Woman

hereby GRANT(S) to ANGELES CORNELIO KEELER, as Trustee of the ANGELA CORNELIO LIVING TRUST, UDT 7/13/99

the real property in the City of Unincorporated Area
County of Riverside, State of California, described as

That Portion of Section 16, Township 3 South, Range 3 West, San Bernardino Meridian, According to the Official Plat thereof, more completely described as Exhibit "A" attached hereto.
APN: 391-120-002; 91-120-022; 391-120-024; 391-120-025 and 391-120-016.

Dated July 13, 1999

Angela Cornelio
ANGELA CORNELIO

STATE OF CALIFORNIA
COUNTY OF Orange

On July 13, 1999 before me, Sonia Livingston personally appeared Angela Cornelio

personally known to me (or 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.

WITNESS my hand and official seal.

Signature Sonia Livingston

SONIA LIVINGSTON
Comm. # 1210722
NOTARY PUBLIC - CALIFORNIA
Orange County
My Comm. Expires March 13, 2001

(This area for official notarial seal)

MAIL TAX STATEMENTS TO:
SAME AS ABOVE

1998 (1/99)

7 23 99

RIVERSIDE

[redacted]

EXHIBIT "A"

LEGAL DESCRIPTION

PARCEL 1:

THAT PORTION OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH QUARTER CORNER OF SAID SECTION 16;

THENCE SOUTH ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 16 TO THE SOUTHEAST CORNER THEREOF;

THENCE WEST ON THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 16. ALSO BEING THE NORTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 2 IN DEED TO WILLIAM M. SMITH, ET UX, RECORDED MAY 10, 1965 AS INSTRUMENT NO 53887 OF OFFICIAL RECORDS;

THENCE SOUTH ON THE EAST LINE OF SAID PARCEL 2 TO THE SOUTHEAST CORNER THEREOF;

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 2 TO THE SOUTHWEST CORNER THEREOF, ALSO BEING THE SOUTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 3 IN DEED TO JOSE QUINTANA, ET UX, RECORDED MARCH 26, 1981 AS INSTRUMENT NO 53001 OF OFFICIAL RECORDS;

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 3 OF THE SOUTHWEST CORNER THEREOF, BEING ON THE EAST LINE OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED JUNE 15, 1982 AS INSTRUMENT NO. 102583 OF OFFICIAL RECORDS.

THENCE SOUTH ON SAID EAST LINE TO THE MOST EASTERLY CORNER OF LAST SAID LAND.

THENCE WEST ON THE SOUTH LINE OF LAST SAID LAND TO THE MOST EASTERLY CORNER OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED FEBRUARY 16, 1982 AS INSTRUMENT NO 26930 OF OFFICIAL RECORDS.

THENCE SOUTHWESTERLY ON THE SOUTHEASTERLY LINE OF LAST SAID LAND TO THE MOST SOUTHERLY CORNER THEREOF.

[redacted]

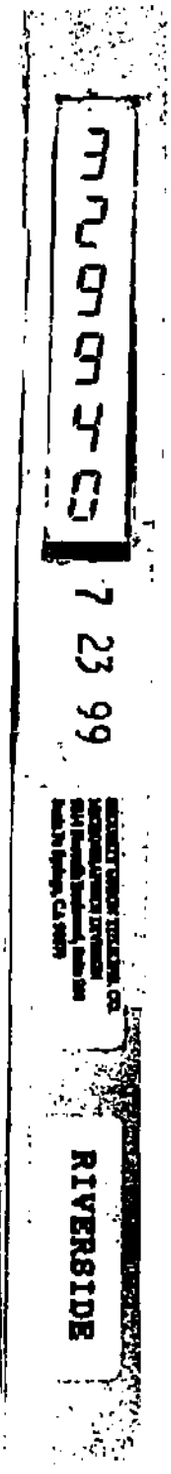
3 0 9 9 4 0

7 23 99

RECORDED IN OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA

RIVERSIDE

[redacted]



THENCE NORTHWEST ON THE SOUTHWEST LINE OF LAST SAID LAND TO THE WEST LINE OF SAID SECTION 16;

THENCE NORTH ON SAID WEST LINE TO THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER;

THENCE EAST ON THE NORTH LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID NORTHWEST QUARTER;

THENCE NORTH ON THE WEST LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTH LINE OF SAID SECTION 16;

THENCE EAST ON SAID NORTH LINE TO THE POINT OF BEGINNING.

EXCEPT A STRIP OF LAND 40.00 FEET IN WIDTH, GRANTED TO THE TEMESCAL WATER COMPANY BY DEED RECORDED MAY 22, 1897, IN BOOK 58, PAGE 292 OF DEEDS, BEING 20.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT 1,004.00 FEET EAST OF THE QUARTER SECTION CORNER ON THE WEST LINE OF SAID SECTION;

THENCE NORTH 12.25 DEGREES 00'00" WEST 383.00 FEET;

THENCE NORTH 62 DEGREES 50'00" WEST 1,010.00 FEET, TO THE WEST LINE OF SAID SECTION;

ALSO EXCEPT THE PORTION THEREOF DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WEST LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION AT ITS INTERSECTION WITH THE SOUTHWESTERLY LINE OF THAT CERTAIN 40.00 FOOT STRIP OF LAND GRANTED TO THE TEMESCAL WATER COMPANY BY DEED RECORDED MAY 22, 1897 IN BOOK 58, PAGE 292 OF DEEDS THENCE SOUTHERLY ON THE WESTERLY LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION, 100.00 FEET

THENCE SOUTH 62 DEGREES 50'00" EAST 150.00 FEET.

THENCE NORTHERLY, PARALLEL WITH THE WESTERLY LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER 100.00 FEET, TO THE SOUTHWESTERLY LINE OF SAID 40.00 FOOT STRIP GRANTED TO TEMESCAL WATER COMPANY.

THENCE NORTH 62 DEGREES 50' 00" WEST, ON SAID SOUTHWESTERLY LINE 150.00 FEET, TO THE POINT OF BEGINNING.

[redacted]

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND LYING WITHIN THE SOUTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 16, AND WITHIN THAT PORTION OF THE SOUTHWEST QUARTER OF SAID SECTION 16 LYING WEST OF THE WEST LINE OF THE RIGHT OF WAY TO THE TEMESCAL WATER COMPANY, ONE-HALF OF THE MINERALS, OIL AND HYDROCARBON RIGHTS IN AND UNDER SAID PROPERTY, RESERVED IN DEED FROM CONCORDIA RANCHES AND STORES, A CORPORATION, RECORDED MAY 4, 1950 IN BOOK 1169, PAGE 453 OF OFFICIAL RECORDS.

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND WITHIN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER ALL OIL, GAS, OIL SHALE, COAL, PHOSPHATE, SODIUM, GOLD, SILVER AND ALL OTHER MINERAL DEPOSITS, AS RESERVED BY THE STATE OF CALIFORNIA IN PATENT RECORDED JUNE 23, 1947 IN BOOK 836, PAGE 538 OF OFFICIAL RECORDS.

PARCEL 2:

THAT PORTION OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, AS SHOWN BY UNITED STATES GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF THE WEST HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION; THENCE NORTH 89° 28' 48" WEST, 559.72 FEET, TO THE NORTHEAST CORNER OF THAT CERTAIN PARCEL OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED AUGUST 10, 1955 IN BOOK 1779, PAGE 81 OF OFFICIAL RECORDS, RIVERSIDE COUNTY RECORDS. TO THE TRUE POINT OF BEGINNING, THENCE NORTH 89° 28' 48" WEST, 484 FEET TO THE NORTHWEST CORNER OF SAID PARCEL; THENCE SOUTH 0° 09' 07" WEST, 23.77 FEET.

THENCE NORTH 89° 33' 50" EAST, 349.83 FEET; THENCE ALONG A TANGENT CURVE CONCAVE TO THE SOUTHWEST, WITH A RADIUS OF 440 FEET, 139.85 FEET, TO THE EASTERLY LINE OF SAID PARCEL CONVEYED TO THE STATE OF CALIFORNIA AT A POINT THAT BEARS SOUTH 5° 14' EAST, 37.86 FEET, FROM THE TRUE POINT OF BEGINNING, THENCE NORTH 5° 14' WEST, 37.86 FEET, TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION LYING WESTERLY OF THE SOUTHERLY EXTENSION OF THE EASTERLY LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION.

PURSUANT TO THAT CERTAIN CONDITIONAL CERTIFICATE OF COMPLIANCE #2458 RECORDED ON FEBRUARY 10, 1988 INSTRUMENT NO 34911, OFFICIAL RECORDS

EXHIBIT "A"- PAGE 3

[redacted]

RECORDED IN OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA

1999 JUL 23 M 9:47 CO

RIVERSIDE

Order No.
Escrow No.
Loan No.

WHEN RECORDED MAIL TO:

Mrs. Angela Cornelio
2262 S. Air Drive
Santa Ana, CA 92705

DOC # 2003-462124
05/23/2003 08:00R Fee:15.00
Page 1 of 4
Recorded in Official Records
County of Riverside
Gary L. Orso
Assessor, County Clerk & Recorder

M	S	U	PAGE	SIZE	DA	PCOR	NCOCR	SMF	MISC.
	1		4			✓			
					1				
A	R	L			COPY	LONG	REFUND	NCHG	EXAM

DOCUMENTARY TRANSFER TAX $ 0

..... Computed on the consideration or value of property conveyed; OR

..... Computed on the consideration or value less liens or encumbrances remaining at time of sale. Exempt Transfer to a Trust for the Benefit of the Transferor

Signature of Declarant or Agent determining tax — Firm Name

17

C
LM

TAP 100 DTT 0

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Angela Cornelio Zavala a unmarried woman. Known as "THE ANGELA CORNELIO ZAVALA REVOCABLE FAMILY LIVING TRUST r & t 11911"

hereby GRANT(S) to ANGELES CORNELIO KELLER, sole Trustee, or her successors in trust, under the ANGELA CORNELIO LIVING TRUST, dated July 13, 1999, and any amendments thereto

the real property in the City of Incorporated Area
County of Riverside , State of California, described as

Dated April 2, 2003

STATE OF CALIFORNIA
COUNTY OF Orange } ss.

On April 2, 2003 before me,
SONIA LIVINGSTON
personally appeared
ANGELA CORNELIO

personally known to me (or 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.

WITNESS my hand and official seal.

Signature

x Angela Cornelio
Angela Cornelio AKA
Angela Cornelio Zavala

SONIA LIVINGSTON
Comm. # 1404749
NOTARY PUBLIC - CALIFORNIA
ORANGE COUNTY
My Comm. Expires March 12, 2007

(This area for official notarial seal)

MAIL TAX STATEMENTS TO:
SAME AS ABOVE

1002 (1/94)

PARCEL 1:

THAT PORTION OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH QUARTER CORNER OF SAID SECTION 16:

THENCE SOUTH ON THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 16 TO THE SOUTHEAST CORNER THEREOF:

THENCE WEST ON THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 16. ALSO BEING THE NORTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 2 IN DEED TO WILLIAM M. SMITH, ET UX, RECORDED MAY 10, 1965 AS INSTRUMENT NO 53887 OF OFFICIAL RECORDS;

THENCE SOUTH ON THE EAST LINE OF SAID PARCEL 2 TO THE SOUTHEAST CORNER THEREOF;

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 2 TO THE SOUTHWEST CORNER THEREOF, ALSO BEING THE SOUTHEAST CORNER OF THE LAND DESCRIBED AS PARCEL 3 IN DEED TO JOSE QUINTANA, ET UX, RECORDED MARCH 26, 1981 AS INSTRUMENT NO 53001 OF OFFICIAL RECORDS:

THENCE WEST ON THE SOUTH LINE OF SAID PARCEL 3 OF THE SOUTHWEST CORNER THEREOF, BEING ON THE EAST LINE OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED JUNE 15, 1982 AS INSTRUMENT NO. 102585 OF OFFICIAL RECORDS.

THENCE SOUTH ON SAID EAST LINE TO THE MOST EASTERLY CORNER OF LAST SAID LAND.

THENCE WEST ON THE SOUTH LINE OF LAST SAID LAND TO THE MOST EASTERLY CORNER OF THE LAND DESCRIBED IN DIRECTOR'S DEED TO JOSE QUINTANA, ET UX, RECORDED FEBRUARY 16, 1982 AS INSTRUMENT NO 26920 OF OFFICIAL RECORDS.

THENCE SOUTHWESTERLY ON THE SOUTHEASTERLY LINE OF LAST SAID LAND TO THE MOST SOUTHERLY CORNER THEREOF.

HENCE NORTHWEST ON THE SOUTHWEST LINE OF LAST SAID LAND TO THE WEST LINE OF SAID SECTION 16;

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06/23/2003 08:00A
2 of 4

THENCE NORTH ON SAID WEST LINE TO THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER:

THENCE EAST ON THE NORTH LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID NORTHWEST QUARTER:

THENCE NORTH ON THE WEST LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTH LINE OF SAID SECTION 16;

THENCE EAST ON SAID NORTH LINE TO THE POINT OF BEGINNING.

EXCEPT A STRIP OF LAND 40.00 FEET IN WIDTH, GRANTED TO THE TEMESCAL WATER COMPANY BY DEED RECORDED MAY 22, 1897, IN BOOK 58, PAGE 292 OF DEEDS, BEING 20.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT 1,004.00 FEET EAST OF THE QUARTER SECTION CORNER ON THE WEST LINE OF SAID SECTION:

THENCE NORTH 12.25 DEGREES 00'00" WEST 383 00 FEET;

THENCE NORTH 62 DECREES 50'00" WEST 1,010 00 FEET. TO THE WEST LINE OF SAID SECTION;

ALSO EXCEPT THE PORTION THEREOF DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WEST LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION AT ITS INTERSECTION WITH THE SOUTHWESTERLY LINE OF THAT CERTAIN 40.00 FOOT STRIP OF LAND GRANTED TO THE TEMESCAL WATER COMPANY BY DEED RECORDED MAY 22, 1897 IN BOOK 58. PAGE 292 OF DEEDS THENCE SOUTHERLY ON THE WESTERLY LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION, 100.00 FEET

THENCE SOUTH 62 DEGREES 50'00" EAST 150.00 FEET.

THENCE NORTHERLY, PARALLEL WITH THE WESTERLY LINE OF SAID SOUTHWEST QUARTER OF THE NORTHWEST QUARTER 100.00 FEET, TO THE SOUTHWESTERLY LINE OF SAID 40 00 FOOT STRIP GRANTED TO TEMESCAL WATER COMPANY.

THENCE NORTH 62 DEGREES 50' 00" WEST, ON SAID SOUTHWESTERLY LINE 150 00 FEET, TO THE POINT OF BEGINNING.

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND LYING WITHIN THE SOUTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 16 AND WITHIN THAT PORTION OF THE SOUTHWEST QUARTER OF SAID SECTION 16 LYING WEST OF THE WEST LINE OF THE RIGHT OF WAY TO THE TEMESCAL WATER COMPANY, ONE-HALF OF THE MINERALS, OIL AND HYDROCARBON RIGHTS IN AND UNDER SAID PROPERTY, RESERVED IN DEED FROM CONCORDIA RANCHES AND STORES, A CORPORATION, RECORDED MAY 4, 1950 IN BOOK 1169, PAGE 453 OF OFFICIAL RECORDS.

ALSO EXCEPT FROM THAT PORTION OF THE ABOVE DESCRIBED LAND WITHIN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER ALL OIL, GAS, OIL SHALE, COAL, PHOSPHATE, SODIUM, GOLD, SILVER AND ALL OTHER MINERAL DEPOSITS, AS RESERVED BY THE STATE OF CALIFORNIA IN PATENT RECORDED JUNE 23, 1947 IN BOOK 836, PAGE 538 OF OFFICIAL RECORDS.

PARCEL 2:

THAT PORTION OF THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 5 SOUTH, RANGE 5 WEST, SAN BERNARDINO BASE AND MERIDIAN, AS SHOWN BY UNITED STATES GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS

COMMENCING AT THE NORTHEAST CORNER OF THE WEST HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION; THENCE NORTH 89° 28' 48" WEST. 559.72 FEET. TO THE NORTHEAST CORNER OF THAT CERTAIN PARCEL OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED AUGUST 10, 1955 IN BOOK 1779, PAGE 81 OF OFFICIAL RECORDS. RIVERSIDE COUNTY RECORDS. TO THE TRUE POINT OF BEGINNING, THENCE NORTH 89° 28' 48" WEST. 484 FEET TO THE NORTHWEST CORNER OF SAID PARCEL; THENCE SOUTH 0° 09' 07" WEST. 23.77 FEET.

THENCE NORTH 89° 33' 50" EAST, 349.83 FEET; THENCE ALONG A TANGENT CURVE CONCAVE TO THE SOUTHWEST, WITH A RADIUS OF 440 FEET, 139.85 FEET, TO THE EASTERLY LINE OF SAID PARCEL CONVEYED TO THE STATE OF CALIFORNIA AT A POINT THAT BEARS SOUTH 5° 14' EAST, 37.86 FEET, FROM THE TRUE POINT OF BEGINNING, THENCE NORTH 5° 14' WEST, 37.86 FEET, TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION LYING WESTERLY OF THE SOUTHERLY EXTENSION OF THE EASTERLY LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION.

PURSUANT TO THAT CERTAIN CONDITIONAL CERTIFICATE OF COMPLIANCE #2458 RECORDED ON FEBRUARY 10, 1988 INSTRUMENT NO 36911, OFFICIAL RECORDS

Appendix D

Historical Building Permits

DEPARTMENT OF BUILDING & SAFETY
COUNTY OF RIVERSIDE

HEADQUARTERS

DST 3

CONSTRUCTION ESTIMATE		
1ST FL.	SQ.FT. @	
2ND FL.	SQ. FT. @	
POR.	SQ. FT. @	
GAR.	SQ. FT. @	
CAR P.	SQ.FT. @	
WALL	SQ. FT. @	
	SQ. FT @	
ESTIMATED CONSTRUCTION VALUATION	$	

NOTE: Not to be used as property tax valuation

MECHANICAL FEES		
VENT SYSTEM ☐ FAN ☐ EVAP COOL ☐ HOOD		
APPLIANCE		
FURNACE ☐ UNIT ☐ WALL ☐ FLOOR ☐ SUSPENDED		
AIR HANDLING UNIT	CFM	
ABSORPTION SYSTEM	BTU	
COMPRESSOR	HP	
HEATING SYSTEM ☐ FORCED ☐ GRAVITY		
PERMIT FEE		
MOBILE HOME PERMIT FEE	$	

NO.	ELECTRICAL FEES		
	UNITS		
	MOBILEHOME SVC.		
	POWER OUTLET		
	SWIM POOL, PVT		
	SWIM POOL COMM		
	SIGN		
	IDLE METER		
	TEMP USE PERMA SVC		
	POLE, TEMP/PERM		
	AMPERES SERV ENT		
	SQ FT @	¢	
	SQ FT @	¢	
	SQ FT RESID @	¢	
	SQ FT GARAGE @	¢	
	TEMP ELEC SVC		
	PERMIT FEE		

NO.	PLUMBING FEES		
	BOILER [ ] B.T.U.		
	BAR SINK		
	ROOF DRAINS		
	DRAINAGE PIPING		
	DRINKING FOUNTAIN		
	URINAL		
	WATER PIPING		
	FLOOR DRAIN		
	WATER SOFTENER		
	WASHER (AUTO) (DISH)		
	GARBAGE DISPOSAL		
	LAUNDRY TRAY		
	KITCHEN SINK		
	WATER CLOSET		
	LAVATORY		
	SHOWER		
	BATH TUB		
	WATER HEATER		
	SEWAGE DISPOSAL		
	HOUSE SEWER		
	GAS PIPING		
	PERMIT FEE		

PERMIT NO	TOTAL FEES	MOB HM. FEE	MICRO FEE	MECH FEE	DBL	PLAN CK FEE	CONST FEE	DBL	ELECT FEE	DBL	SMI FEE	PLUMB. FEE	DBL
247040	20.00						SPECIAL				20.00		

	J	F	M	A	M	J	J	A	S	O	N	D
73												
74												
75												

JOB ADDRESS: 14116 HWY 71 | ST NO | OWNER: PRENGER, D.

USE OF PERMIT: INSPECT. TO CONVERT BARN TO FEED STORE | F.C. | DATE: 6-7-74 | PERMIT NO: 247040

COMMUNITY	DST	UNITS	ROOMS	VALUATION	SUPP. TO PERMIT	OFFICE
ALBERHILL	3					R

LEGAL DESCRIPTION: POR SEC 16 T5S R5W

SET BACK F	S	R	LOT SIZE	ZONE	USE NO	GRP	TYPE	CK BY
				M-3				EG

BOND AMT	PLAN NO	PLAN CHECKER	FINAL DATE	INSPECTOR

NAME OF CONST. LENDER	BRANCH OFFICE	NO LENDER INVOLVED
ADDRESS	**CITY**	**STATE**

MH PERMIT FEE		$
MICROFILM FEE	COPIES	$
MECHANICAL FEE	DBL	$
PLAN CHECK FEE		$
CONSTRUCTION FEE	DBL	$
ELECTRICAL FEE	DBL	$
SMI FEE		$
SPECIAL INSPECTION FEE		$ 20 00
PLUMBING FEE	DBL	$
TOTAL FEES		$ 20 00

THIS PERMIT SHALL BECOME VOID IF WORK IS NOT COMMENCED WITHIN 120 DAYS. CESSATION OF WORK FOR 120 DAYS SHALL ALSO CAUSE PERMIT TO BECOME VOID.

I HEREBY AGREE THAT ALL WORK IN CONNECTION WITH THIS PERMIT WILL BE DONE IN ACCORDANCE WITH THE LAWS OF RIVERSIDE COUNTY AND THE STATE OF CALIFORNIA. I ALSO AGREE TO CARRY COMPENSATION INSURANCE UPON MY EMPLOYEES COMPLIANCE WITH THE LAWS OF THE STATE OF CALIFORNIA COVERING CONTRACTORS IS ALSO GUARANTEED.

I HEREBY CERTIFY THAT THE INDIVIDUAL WHO PREPARED THE PLANS AND SPECIFICATIONS HAS DONE SO IN ACCORDANCE WITH SECTION 5541 OF THE BUSINESS AND PROFESSIONS CODE OF THE STATE OF CALIFORNIA

CASH ☐ CHECK ☒ MO ☐ N.C. ☐

RECEIVED BY | TREES REQUIRED

SEWAGE SYSTEM | T | LL | P

INFORMATION: OWNER WILL CALL PRIOR TO INSP

OWNER/AGENT'S SIGNATURE	CONTRACTOR
Don Prenger	
ADDRESS: 14116 Hiway #71	ADDRESS
CITY: CORONA ZIP CODE: 91720	CITY ZIP CODE
TEL. NO: 674-3944	TEL. NO LICENSE

FORM 284-208 (R)

BUILDING PERMIT

DEPARTMENT OF BUILDING & SAFETY
COUNTY OF RIVERSIDE

FIELD

DST 3

CONSTRUCTION ESTIMATE		
1ST FL.	SQ.FT. @	
2ND FL.	SQ. FT. @	
POR.	SQ. FT. @	
GAR.	SQ. FT. @	
CAR P.	SQ.FT. @	
WALL	SQ. FT. @	
	SQ. FT. @	
ESTIMATED CONSTRUCTION VALUATION	$	

NOTE: Not to be used as property tax valuation

MECHANICAL FEES		
VENT SYSTEM ☐ FAN ☐ EVAP. COOL ☐ HOOD		
APPLIANCE		
FURNACE ☐ UNIT ☐ WALL ☐ FLOOR ☐ SUSPENDED		
AIR HANDLING UNIT ____ CFM		
ABSORPTION SYSTEM ____ BTU		
COMPRESSOR ____ HP		
HEATING SYSTEM ☐ FORCED ☐ GRAVITY		
PERMIT FEE		
MOBILE HOME PERMIT FEE	$	

NO.	ELECTRICAL FEES		
	UNITS		
	MOBILEHOME SVC		
	POWER OUTLET		
	SWIM POOL, PVT		
	SWIM POOL COMM		
	SIGN		
	IDLE METER		
	TEMP USE PERM SVC		
	POLE, TEMP/PERM		
	AMPERES SERV ENT		
	SQ FT @ ¢		
	SQ FT @ ¢		
	SQ FT RESID @ 1¢		
	SQ FT GARAGE @ ½¢		
	TEMP ELEC SVC		
	PERMIT FEE		

NO.	PLUMBING FEES		
	BOILER ____ B.T.U.		
	BAR SINK		
	ROOF DRAINS		
	DRAINAGE PIPING		
	DRINKING FOUNTAIN		
	URINAL		
	WATER PIPING		
	FLOOR DRAIN		
	WATER SOFTENER		
	WASHER (AUTO) (DISH)		
	GARBAGE DISPOSAL		
	LAUNDRY TRAY		
	KITCHEN SINK		
	WATER CLOSET		
	LAVATORY		
	SHOWER		
	BATH TUB		
	WATER HEATER		
	SEWAGE DISPOSAL		
	HOUSE SEWER		
	GAS PIPING		
	PERMIT FEE		

PERMIT NO.	TOTAL FEES	MOB HM FEE	MICRO FEE	MECH FEE	DBL	PL CK FEE	CONST FEE	DBL	ELECT FEE	DBL	SMI FEE	PLUMB FEE	DBL
247040	20.00						5		14.00			20.00	

	J	F	M	A	M	J	J	A	S	O	N	D
73												
74						6						
75												

JOB ADDRESS 19116 Hwy 71 | SP NO | OWNER PRENGER, D.

USE OF PERMIT INSPECT. TO CONVERT BURN TO FEED STORE | F C | DATE 6-7-74 | PERMIT NO. 247040

COMMUNITY	DST	UNITS	ROOMS	VALUATION	SUPP TO PERMIT	OFFICE
MURRIETA	3					R

LEGAL DESCRIPTION: POR SEC 16 T5S R5W

SET BACK	LOT SIZE	ZONE	USE NO	GRP	TYPE	CK BY
F ___ S ___ R ___		M-3				EG

BOND AMT	PLAN NO	PLAN CHECKER	FINAL DATE	INSPECTOR
			4-14-74	Thompson

NAME OF CONST. LENDER	BRANCH OFFICE	NO LENDER INVOLVED
ADDRESS	**CITY**	**STATE**

MH PERMIT FEE		$
MICROFILM FEE	COPIES	$
MECHANICAL FEE	DBL	$
PLAN CHECK FEE		$
CONSTRUCTION FEE	DBL	$
ELECTRICAL FEE	DBL	$
SMI FEE		$
SPECIAL INSPECTION FEE		$ 20 00
PLUMBING FEE	DBL	$
TOTAL FEES		$ 20 00

THIS PERMIT SHALL BECOME VOID IF WORK IS NOT COMMENCED WITHIN 120 DAYS. CESSATION OF WORK FOR 120 DAYS SHALL ALSO CAUSE PERMIT TO BECOME VOID.

I HEREBY AGREE THAT ALL WORK IN CONNECTION WITH THIS PERMIT WILL BE DONE IN ACCORDANCE WITH THE LAWS OF RIVERSIDE COUNTY AND THE STATE OF CALIFORNIA. I ALSO AGREE TO CARRY COMPENSATION INSURANCE UPON MY EMPLOYEES. COMPLIANCE WITH THE LAWS OF THE STATE OF CALIFORNIA COVERING CONTRACTORS IS ALSO GUARANTEED.

I HEREBY CERTIFY THAT THE INDIVIDUAL WHO PREPARED THE PLANS AND SPECIFICATIONS HAS DONE SO IN ACCORDANCE WITH SECTION 5541 OF THE BUSINESS AND PROFESSIONS CODE OF THE STATE OF CALIFORNIA

CASH ☐ CHECK ☒ MO ☐ NC ☐

RECEIVED BY | TREES REQUIRED

SEWAGE SYSTEM | T | H | P

INFORMATION CALL

OWNER/AGENT'S SIGNATURE | CONTRACTOR

ADDRESS | ADDRESS

CITY ZIP CODE | CITY ZIP CODE

TEL NO | TEL NO LICENSE

FORM 284 208 (Rev. 7/73) GREEN: OFFICE COPY PINK: TO INSPECTOR

NO.	OPERATION	DATE	INSPECTOR
	BUILDING APPROVALS		
1	Set Back		
2	Figs & Frms		
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck		
7	Framing		
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L. ☐		
10A	Fireplace T.O. ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		
14	Final		
	PLUMBING APPROVALS		
15	Ground Plumb		
16	Water Piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	Final		
	ELECTRICAL APPROVALS		
26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring		
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	Final		

NO	OPERATION	DATE	INSPECTOR
	MECHANICAL APPROVALS		
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Compart.		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detention Device		
42	Commercial Hood		
43	Final		

ADDITIONAL INFORMATION

not feasible to convert
from F-2 occupancy.
Talked to Owner and
4/14/74

SEWAGE SYSTEM SIZE & LOCATION

Tank Pit L. Line

REAR OF PROPERTY LINE

P/L P/L

STREET NAME: _____

NOTICE: THIS IS NOT A BUILDING PERMIT

Dist. Office #3

Permit No. 247040

APPLICATION TO CONSTRUCT
DEPARTMENT OF BUILDING AND SAFETY
COUNTY OF RIVERSIDE

OWNER

Owner Don Pflueger	Architect	Contractor
Address 14116 Hiway 71	Address	Address
City Corona	City	City
Phone 674-3944	Phone	Phone

I (we) the undersigned, hereby certify and acknowledge that I (we) have read the application and agree that if Curb and Gutter, and Paving, and/or Dedication of right of way is required by the County of Riverside, the Riverside County Department of Building and Safety shall not make a Final Inspection until said requirements have been met. I am also aware that no work is to be done within the County R/W without an encroachment permit.

NOW, therefore, it is agreed that I (we) will not occupy said property and will not cause said property to be occupied until I (we) have complied with all laws of the County of Riverside and the State of California governing said property.

DATE 6-7-74 SIGNATURE OF OWNER AND/OR AGENT Don Pflueger

Approval by Signature from the Following Departments Listed Below Must Be Obtained Prior to the Issuing of a Construction Permit.

LAND USE DIVISION BUILDING AND SAFETY

LOCATION OF JOB 14116 Hwy 71

LEGAL DESCRIPTION OF PROPERTY Par 1 Sec 16 T 5S R 5W

COMMUNITY Alberhill

NO. OF SUBMITTED PLANS

CASE NO.

TYPE OF CONSTRUCTION Special Inspection to Convert Barn into Feedstore

NO. OF PARKING SPACES REQUIRED NO. OF BUILDINGS NOW EXISTING

ZONE M-3 SETBACKS FRONT SIDE REAR

GRADING PERMIT REQUIRED YES ☐ NO ☐

SETBACK ORDINANCE # None OF FEET REQUIRED ON STREET

DATE 6-7-74 SIGNATURE OF LAND USE OFFICIAL E. Grout

USE OF STRUCTURE

SINGLE FAMILY	☐	DUPLEX	☐
APARTMENTS	☐	AGRIC.	☐
COMMERCIAL	☒	INDUSTRIAL	☐
		ALTERATIONS	☐

ROAD DEPARTMENT

18-4

DEDICATION REQUIRED: YES ☐ NO ☐ NO. OF FEET

CURB AND GUTTER REQUIRED: YES ☐ NO ☐ STREET

THE ABOVE CONSTRUCTION? YES ☐ NO ☐

CAN CURB AND GUTTER FEASIBLY BE INSTALLED? YES ☐ NO ☐

HAS AN ACCEPTABLE APPLICATION BEEN MADE FOR ENCROACHMENT PERMIT FOR DRIVEWAY AND STREET IMPROVEMENT? YES ☐ NO ☐

DATE SIGNATURE OF ROAD DEPT. OFFICIAL

HEALTH DEPT.

SWIMMING POOLS PUBLIC

SEWAGE DISPOSAL

FOOD ESTABLISHMENT

OTHER DEPARTMENTS

WATER POLLUTION REMARKS

FLOOD CONTROL

AIR POLLUTION

DIV OF HWY

YOUR PROPERTY MAY BE SUBJECT TO FLOOD. RIVERSIDE COUNTY ASSUMES NO RESPONSIBILITY IN EVENT OF FLOOD.

284-199 A 12/69

CANARY — FILE, PINK — APPLICANT

PERMIT APPLICATION

County of Riverside
Department of Building and Safety

4080 Lemon St. 2nd Floor Riverside, CA 92501 Ph: 787-6140	135 N. Alessandro Rd Rm 203 Banning, CA 92220 Ph 849-7312	680 N. State Street Hemet, CA 92343 Ph 658-4464	237 North "D" Street Perris, CA 92370 Ph 657-3686	46-200 Oasis St Rm 310 Indio, CA 92201 Ph 342-8271	180 N. Broadway Blythe, CA 92225 Ph 922-2670

This permit becomes void if work not commenced within 180 days from date of issuance, OR, if work has been suspended or abandoned for a period of 180 days

LICENSED CONTRACTORS DECLARATION: I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect

License Class B1 - C8 Lic. Number 372204

Date 12/29/81 Contractor TRI CITY CONST.

OWNER-BUILDER DECLARATION. I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500.):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.).

☐ I am exempt under Sec. _____, B & P.C. (Attach Certificate)

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION: I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation insurance, or a certified copy thereof (Sec. 3800, Lab. C.).

Policy No. _____ Company _____

☐ Certified copy is hereby furnished

☒ Certified copy is filed with the County Building Inspection Department or County _____ Department

Date 12/29/81 Applicant TRI CITY CONST.

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE. This section need not be completed if the permit is for one hundred ($100) or less. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION

☒ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend, will be made in connection with work authorized by this permit, and that no building structure, scaffolding, falsework, or demolition or dismantling thereof, will be more than thirty-six (36) feet high. (Chap 3.2, Grp 2, Art 2, Sec 341, Title 8, C.A.C.)

☐ As owner-builder, I will not employ anyone to do work which would require a permit from the Division of Industrial Safety, as noted above, unless such person has a permit to do such work from that division.

☐ Division of Industrial Safety Permit No. _____

Date 12/29/81 Applicant TRI CITY CONST.

CONSTRUCTION LENDING AGENCY: I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name NONE

Lender's Address _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this county to enter upon the above-mentioned property for inspection purposes.

Ron Gaisalva 12/29/81
Signature of Applicant or Agent Date

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION OF ENTRY: I certify I have read this application and state that the information given is correct. I agree to comply with all state laws and county ordinances relating to building construction, and authorize a representative of the County of Riverside, Department of Building and Safety to enter upon the property for which I have applied for this permit for the purpose of making inspections.

RON GAISALVA 12/29/81
Signature of Applicant or Agent Date
Print Applicant/Agent Name

APPLICANT NAME (L, F, MI): QUINTANA, JOSE
ADDRESS: 14116 HWY 71
CITY/COMMUNITY/STATE/ZIP: ELSINORE CA 923300000
JOB SITE ADDRESS/SPACE: 14116 HWY 71
CITY/COMMUNITY/STATE/ZIP: ELSINORE CA 923300000

BOK	PAG	PRC	C	TWN	RNG	SE	S
391	120	014	1	005S	005W	16	0

TRACT	LOT	MOD	SB
000000		003	

TRACT NAME:
OWNER NAME (L, F, MI): QUINTANA JOSE
CONTRACTOR FIRM NAME: TRI CITY CONSTRUCTION
ADDRESS: P. O BOX 511
CITY/COMMUNITY/STATE/ZIP: ALTA LOMA CA 917010000
PHONE #: 714-988-9500 LICNC #: 372204
ARC/ENG FIRM NAME:
ADDRESS:
CITY/COMMUNITY/STATE/ZIP:
PHONE #: LICNC #:
USE OF PERMIT: DET AGRIC BLDG

BL	ZON	FSB	SSB	SSB	RSB		OFC
01	R-R	250	030	100	022		HEM

ZONE ORD #: LOT SZ 032 A A END SIDE 0000

APPL/PRMT # 00010040 PB DATE 12/29/81 013056

CONSTRUCTION FEE	$38.50
PLUMBING FEE	$11.50
P/C FEE	$25.02
SMI FEE	$0.18
STRUCTURAL (BUILDING) PERMIT	
FILE COPY Cash TOTAL FEE :	$75.20

013056

STRUCTURAL (BUILDING) PERMIT

TOTAL PERMIT COST IS $75.20

CONSTRUCTION ESTIMATE (NOTE: Not to be used as property valuation)

Description	FCC	Group	Type	Sq Ft	Rate	Valuation
PRIMARY AGRI	0019	M-3	WD	288	$9.10	$2620

Construction Fee based on Total Actual Valuation of $2620 is: $38.50

PLUMBING FEE COMPUTATIONS *** # of Permits: 1 at $4.00 Each FEE: $4.00
# of Water Heaters: 1 # of Drains on Roof: 00 FEE: $2.50
GAS PIPING SYSTEM- 1 to 5 Outlets: 1 6 or More Outlets: 0 FEE: $2.50
Installation of Water Piping and/or Water Treatment Equip: 1 FEE: $2.50
SMI FEE $0.18
P/C FEE $25.02

APPLICANT NAME (L, F, MI)	QUINTANA, JOSE
ADDRESS	14116 HWY 71
CITY/COMMUNITY/STATE/ZIP	ELSINORE CA 923300000
JOB SITE ADDRESS/SPACE	14116 HWY 71
CITY/COMMUNITY/STATE/ZIP	ELSINORE CA 923300000

BOK	PAG	PRC	C	TWN	RNG	SE	S
391	120	014	1	005S	005W	16	0

TRACT	LOT	MOD	SB
000000		003	

TRACT NAME	
OWNER NAME (L, F, MI)	QUINTANA JOSE
CONTRACTOR FIRM NAME	TRI CITY CONSTRUCTION
ADDRESS	P O BOX 511
CITY/COMMUNITY/STATE/ZIP	ALTA LOMA CA 917010000
PHONE #	714-988-9500
LICNC #	372204
ARC/ENG FIRM NAME	
ADDRESS	
CITY/COMMUNITY/STATE/ZIP	
PHONE #	
LICNC #	
USE OF PERMIT	DET AGRIC BLDG

BL	ZON	FSB	SSB	SSB	RSB		OFC
01	R-R	250	030	100	022		HEM

ZONE ORD #		LOT SZ			END	SIDE
		032	A	A		0000

F

APPL/PRMT #	PB	DATE	013056
00010040	PB	12/29/81	

CONSTRUCTION FEE	$30.50
PLUMBING FEE	$11.50
P/C FEE	$25.02
SMI FEE	$0.18
STRUCTURAL (BUILDING) PERMIT	
TOTAL FEE :	$75.20

INSPECTOR'S COPY

014116 Hwy 71
Elsinore

013056

019

S T R U C T U R A L (B U I L D I N G) P E R M I T

TOTAL PERMIT COST IB $75.20

CONSTRUCTION ESTIMATE (NOTE: Not to be used as property valuation)

Description	FCC	Group	Type	Sq Ft	Rate	Valuation
PRIMARY AGRI	0019	M-3	WD	288	$9.10	$2620

Construction Fee based on Total Actual Valuation of $2620 is: $30.50

PLUMBING FEE COMPUTATIONS *** # of Permits: 1 at $4.00 Each FEE: $4.00
# of Water Heaters: 1 # of Drains on Roof: 00 FEE: $2.50
GAS PIPING SYSTEM- 1 to 5 Outlets: 1 6 or More Outlets: 0 FEE: $2.50
Installation of Water Piping and/or Water Treatment Equip: 1 FEE: $2.50
SMI FEE $0.18
P/C FEE $25.02

FORM 284-206 (2/81)

BUILDING APPROVALS

NO.	OPERATION	DATE	INSPECTOR
1	Set Back		
2	Ftgs & Frms	1-5-84	Fowler
2A	Slab Grade	1-5-84	Fowler
3	Steel		
4	Grout Blocks		
5	Band Beams		
6	Roof Deck		
7	Framing	1-18-84	Fowler
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L. ☐		
10A	Fireplace T.O ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		

	INSULATION	Thick	"R" Value		
7A	Walls (Batts)				
12B	Ceiling (Batts)				
12C	Ceiling (Blown)				
14	Final			1-28-84	Fowler

PLUMBING APPROVALS

15	Ground Plumb		
16	Water Piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	Final		

ELECTRICAL APPROVALS

26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring		
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	Final		

MECHANICAL APPROVALS

NO.	OPERATION	DATE	INSPECTOR
33	Ventilation System		
34	Planums & Ducts		
35	Furnace Comport.		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	Final		

ADDITIONAL INFORMATION

OP'N NO.

SEWAGE SYSTEM SIZE & LOCATION

Tank _____ Pit _____ L. Line _____

REAR OF PROPERTY LINE

P/L P/L

STREET NAME _____

STRUCTURAL PLANS FOR STORAGE BLDG. ARE THE SAME AS APPROVED ON PERMIT # 9712 BELOW. 12-28-81 Paige

EXISTING HORSE BARN (PERMIT # 009712)
(UNDER CONSTRUCTION)

336'

22'

STORAGE BLDG TO CONTAIN H.W. HEATER (GAS)

24'

PROPOSED STORAGE BLDG

12'

CONC. SLAB 12' 24'

DENOTES 4' BLK WALL

14116 Hwy 71
ELSINOR

GAS TO METER

PERMIT APPLICATION

County of Riverside
Department of Building and Safety

4080 Lemon St. 2nd Floor Riverside, CA 92501 Ph 787-6140	135 N. Alessandro Rd. Rm. 203 Banning, CA 92220 Ph 849-7312	880 N. State Street Hemet, CA 92343 Ph 658-4454	237 North "D" Street Perris, CA 92370 Ph 657-3908	45-209 Oasis St. Rm. 310 Indio, CA 92201 Ph 342-8271	760 N. Broadway Blythe, CA 92225 Ph 922-2670

This permit becomes void if work not commenced within 180 days from date of issuance, OR if work has been suspended or abandoned for a period of 180 days

LICENSED CONTRACTORS DECLARATION I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect

License Class C-61 302920 Lic Number 302920

Date JAN 6 Contractor Ray Kurtz

OWNER-BUILDER DECLARATION I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).)

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.).

☐ I am exempt under Sec. _____, B & P C. (Attach Certificate)

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION I hereby affirm that I have a certificate of consent to self-insure or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

Policy No. _____ Company _____

☐ Certified copy is hereby furnished

☐ Certified copy is filed with the County Building Inspection Department or County _____ Department

Date _____ Applicant _____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE This section need not be completed if the permit is for one hundred ($100) or less. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Date JAN 6, '81 Applicant _____

NOTICE TO APPLICANT If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION

☒ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend, will be made in connection with work authorized by this permit, and that no building structure, scaffolding, falsework, or demolition or dismantling thereof, will be more than thirty-six (36) feet high. (Chap. 3.2, Grp 2, Art 2, Sec 341, Title 8, C.A.C.)

☐ As owner-builder, I will not employ anyone to do work which would require a permit from the Division of Industrial Safety, as noted above, unless such person has a permit to do such work from that division.

☐ Division of Industrial Safety Permit No. _____

Date JAN 6 Applicant _____

CONSTRUCTION LENDING AGENCY: I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name _____

Lender's Address _____

I certify that I have read this application and state that the above information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this county to enter upon the above-mentioned property for inspection purposes.

Signature of Applicant or Agent _____ Date JAN 6, 1981

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION OF ENTRY I certify I have read this application and state that the information given is correct. I agree to comply with all state laws and county ordinances relating to building construction, and authorize a representative of the County of Riverside, Department of Building and Safety to enter upon the property for which I have applied for this permit for the purpose of making inspections.

Signature of Applicant or Agent _____ Date JAN 6, 1981

Print Applicant/Agent Name _____

APPLICANT NAME (L, F, MI)
QUINTANA JOSE

ADDRESS
14116 HWY 74

CITY/COMMUNITY/STATE/ZIP
ALBERHILL CA 917200000

JOB SITE ADDRESS/SPACE
14116 HWY 71

CITY/COMMUNITY/STATE/ZIP
ALBERHILL CA 917200000

BOK	PAG	PRC	C	TWN	RNG	SE	S
391	120	016	3	005S	005W	16	0

TRACT	LOT	MOD	SB
000000	0000	003	

TRACT NAME
POR N 1/2

OWNER NAME (L, F, MI)
QUINTANA JOSE

CONTRACTOR FIRM NAME
Ray's Mobile Home Service

ADDRESS
25753 Business Center Dr

CITY/COMMUNITY/STATE/ZIP

PHONE # _____ LICNC # _____

ARC/ENG FIRM NAME

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # _____ LICNC # _____

USE OF PERMIT
MH INSTALLATION

BL	ZON	FSB	SSB	SSB	RSB		OFC
03	R-R	306	050	060	100		RIV
ZONE ORD #		LOT SZ			END		SIDE
		000009	A				0000

APPL/PERMIT #	PS	DATE	005830
00010558	PI	01/07/82	

MBL HOME INSTL'TN $40.00

MOBILE HOME INSTAL'TN PERMIT

FILE COPY TOTAL FEE : $40.00

005830

MOBILE HOME INSTAL'TN PERMIT

TOTAL PERMIT COST IS $40.00

Nature of Situs Comment - -------- Action Taken ---------- Case Use No ------

18 MONTH LIMIT REST ROOM TO BE REMOVED

MBL HOME INSTL'TN $40.00

XOMA 284-2M (2/81)

APPLICANT NAME (L. F. MI)
QUINTANA JOSE

ADDRESS
14116 HWY 74

CITY/COMMUNITY/STATE/ZIP
ALBERHILL CA 917200000

JOB SITE ADDRESS/SPACE
14116 HWY 71

CITY/COMMUNITY/STATE/ZIP
ALBERHILL CA 917200000

SUR	PKG	PRC	C	TWN	RNG	SE	S
391	120	016	3	005S	005W	16	0

TRACT	LOT	MOD	SB
000000	0000	003	

TRACT NAME
POR N 1/2

OWNER NAME (L. F. MI)
QUINTANA JOSE

CONTRACTOR-FIRM NAME

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # | LICNC #

ARC/ENG FIRM NAME

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # | LICNC #

USE OF PERMIT
MH INSTALLATION

GL	ZON	FSB	SSB	SSB	RSB		OFC
03	R-R	300	050	060	100		RTU
ZONE ORD		LOT SZ				END	SIDE
		000009 A					0000

APPL/PRMT #: 00010550 | PS: PI | DATE: 01/07/82 | 005830

MBL HOME INSTL'TN $40.00

MOBILE HOME INSTAL'TN P E R M I T

TOTAL FEE: $40.00

INSPECTOR'S COPY

14116 Hwy 71

005830

MOBILE HOME INSTAL'TN P E R M I T

300

TOTAL PERMIT COST IS $40.00

Nature of Situs Comment - -------- Action Taken ---------- Case Use No ------
18 MONTH LIMIT REST ROOM TO BE REMOVED

MBL HOME INSTL'TN $40.00

Final By Tenant 1-8-82

FORM 284-208 (2/81)

NO	OPERATION	DATE	INSPECTOR
	BUILDING APPROVALS		
1	Set Back		
2	Ftgs & Frms	1-8-82	Fenton
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck		
7	Framing		
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L		
10A	Fireplace T.O.		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		
	INSULATION / Thick / "R" Value		
12A	Walls (Batts)		
12B	Ceiling (Batts)		
12C	Ceiling (Blown)		
14	Final	1-8-82	Fenton
	PLUMBING APPROVALS		
15	Ground Plumb		
16	Water Piping		
17	Rough Plumb	1-8-82	Fenton
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service	1-8-82	Fenton
24	Gas Test	1-8-82	Fenton
25	Final	1-8-82	Fenton
	ELECTRICAL APPROVALS		
26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring	1-8-82	Fenton
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	Final	1-8-82	Fenton

NO.	OPERATION	DATE	INSPECTOR
	MECHANICAL APPROVALS		
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Comport.		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	Final		

OP'N NO.	**ADDITIONAL INFORMATION**

SEWAGE SYSTEM SIZE & LOCATION

Tank Pit L. Line

REAR OF PROPERTY LINE

P/L P/L

STREET NAME

RIVERSIDE COUNTY DEPARTMENT OF BUILDING AND SAFETY

MOBILEHOME CERTIFICATE OF OCCUPANCY

1. Installation Permit No: A 05783

2. Address or Location: 14116 Hiway 71

3. Owner's Name: Nunnikhia J

4. Owner's Address: Same

5. Mobilehome:

(a) Insignia No. 208541 Serial No. 3643 Year Mfr. 1981

(b) Manufacturer Bonanza Model No. 24x56-4

Installation approved by: _____ (INSPECTOR) Date: 1-22-83

THIS CERTIFICATE IS VOID WHEN MOBILEHOME IS RELOCATED

284-130

DEPARTMENT OF BUILDING AND SAFETY
COUNTY OF RIVERSIDE

10558

MOBILEHOME INSTALLATION APPLICATION

☐ TRAILER PARK

DISTRICT NO 5

☒ INDIVIDUAL LOT

NAME OF PARK _____

ADDRESS _____ TELEPHONE NO. _____

OWNER/AGENT QUINTANA, J

ADDRESS 14116 LEMESAL LK ELSINORE SPACE NO. _____

MOBILEHOME INSTALLER PATIOS UNLIMITED

ADDRESS 25773 BUNDY CYN SUN CITY TELEPHONE NO. 679-1612

INSTALLERS CONTRACTOR'S LICENSE NO 302920

DATE OF MANUFACTURE OF MOBILE 81 WIDTH 14 LENGTH(LESS HITCH) 60

NEW ✓ RELOCATE _____ MANUFACTURER BROOKWOOD

MODEL 80506-A STATE INSIGNIA OR HUD LABEL: U-UNIT 208541 X-UNIT _____

SERIAL NUMBER 3663 ROOF LIVE LOAD 20 WIND LOAD 15

APPLICANT ROY LOERCH (PRINT NAME) APPLICANT Roy Loerch (SIGNATURE)

PARK OWNER/MANAGER _____ (PRINT NAME) PARK OWNER/MANAGER _____ (SIGNATURE)

* *

005797

COMMUNITY Elsinore ZONE RR CASE NO _____

LEGAL DESCRIPTION 391-120-016 POR N½ [redacted] T5S - R5W SEC 16

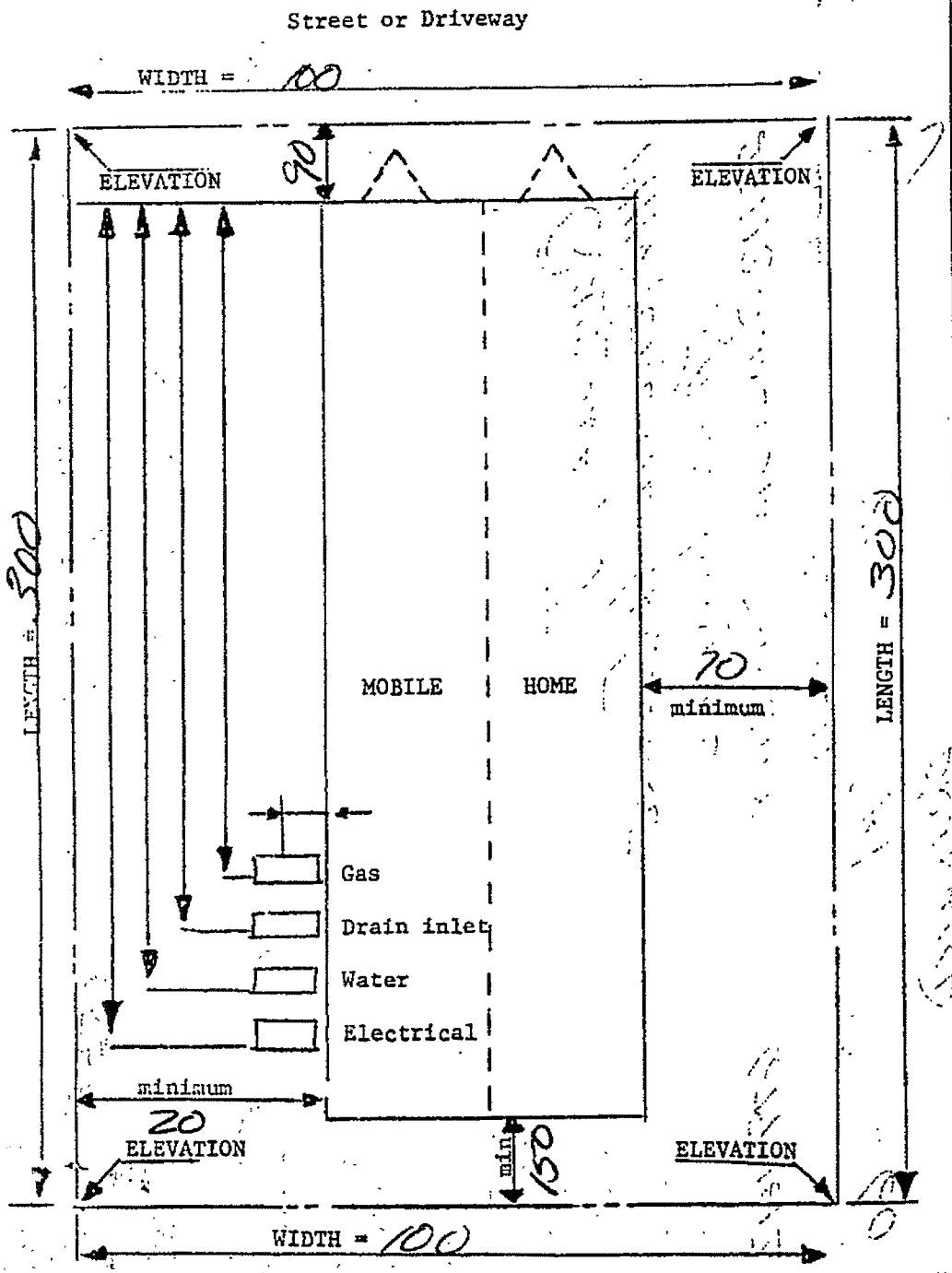
SETBACKS: FRONT 90 SIDE 20/70 REAR 150

DATE 1/7/82 SIGNATURE OF LAND USE OFFICIAL G Gibbens

9740

284-77 Rev. 8/77

MOBILEHOME INSTALLATION INFORMATION SHEET



Site Utility Service

Notes: (a) Utility connections shall be located outside the rear 1/3 of the mobilehome within 4 feet of the left wall.
(b) Show relative elevations of each corner of lot or site.

1. Gas: natural _____ LPG X.
   Riser size 3/4".
2. Drain Inlet: size 3".
3. Electrical Equipment:
   (a) Receptacle _____ Rating (amps) 100.
   (b) Connection for power supply assembly 1½ flex
   Circuit breaker rating (amps) 100.
   (c) Equipment rating (amps) 100.

Mobilehome Data

1. Size: length 60 width 14.
2. Electrical: Power supply cord _____.
   Ampere rating _____. OR
   power supply assembly _____. Ampere rating 100. Flexible conduit size 1½ flex
3. Gas supply inlet: Size 1".
   Gas connector, describe: 1" flex
4. Water connector, describe: 5/8 copper
5. Drain connector, describe: 3" ABS
6. Manufacturer: Brookwood
   Model: 8050GA Serial No.: 3663
   State insignia numbers: X unit: _____
   U unit: 208541
   Roof live load: 20 p.s.f.
   Wind load: 15 p.s.f.

284-79 6/74

PERMIT APPLICATION

County of Riverside
Department of Building and Safety

4080 Lemon St 9th Floor
Riverside CA 92501
Ph 787 5146

135 N Alessandro Rd Ste 200
Banning CA 92220
Ph 849 7312

860 N State Street
Hemet CA 92343
Ph 658 4854

237 North D Street
Perris CA 92370
Ph 657 3898

46 209 Oasis St Rm 310
Indio CA 92201
Ph 342 8371

150 N Broadway
Blythe CA 92225
Ph 922 2670

This permit becomes void if work not commenced within 180 days from date of issuance OR if work has been suspended or abandoned for a period of 180 days

☐

LICENSED CONTRACTORS DECLARATION I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect

☐

OWNER-BUILDER DECLARATION I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption Any violation of Section 7031 5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500))

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale If, however the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec 7044, Business and Professions Code The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.)

☐ I am exempt under Sec _____ B & P C (attach Certificate)

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION I hereby affirm that I have a certificate of consent to self insure or a certificate of Workers' Compensation Insurance or a certified copy thereof (Sec 3800 Lab C).

☐ Certified copy is hereby furnished

☐ Certified copy is filed with the County Building Inspection Department or County _____ Department

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE This section need not be completed if the permit is for one hundred ($100) or less I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California

Date _____ Applicant _____

NOTICE TO APPLICANT If after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION

☐ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend will be made in connection with work authorized by this permit and that no building structure scaffolding falsework, or demolition or dismantling thereof will be more than thirty-six (36) feet high (Chap 3 2, Grp 2 Art 2 Sec 341, Title 8, C A C).

☐ As owner builder I will not employ anyone to do work which would require a permit from the Division of Industrial Safety as noted above unless such person has a permit to do such work from the division

☐ Division of Industrial Safety Permit No _____

CONSTRUCTION LENDING AGENCY I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec 3097 Civ C)

Lender's Name _____

Lender's Address _____

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION OF ENTRY I certify I have read this application and state that the information given is correct I agree to comply with all state laws and county ordinances relating to building construction and authorize a representative of the County of Riverside Department of Building and Safety to enter upon the property for which I have applied for permit for the purpose of making inspections

X _____ 3-29-89
Signature of Applicant or Agent — Date

HARRY
Print Applicant's Agent Name

APPLICANT NAME (L, F, MI)	RALPH GILLETTE CONST
ADDRESS	33611 ORANGE
CITY/COMMUNITY/STATE/ZIP	ELSINORE CA 923300000
JOB SITE ADDRESS/SPACE	14116 HWY 71
CITY/COMMUNITY/STATE/ZIP	ALBERHILL CA 917200000
BOK / PAG / PRC / C	391 / 120 / 016 / 3
TWN / RNG / SE / S	005S / 005W / 16 / 0
TRACT / LOT / MOD / SB	000000 / 0000 / 003 /
TRACT NAME	POR N 1/2
OWNER NAME (L,F,MI) / PHONE #	QUINTANA, JOSE
CONTRACTOR FIRM NAME / LICNO #	RALPH GILLETTE CONST / 350691
ADDRESS	33611 ORANGE LK ELSINORE 92330
CITY/COMMUNITY/STATE/ZIP	ELSINORE CA 923300000
PHONE # / BLDG. INSPECTOR / FINAL DATE	714-674-2587
ARC/ENG FIRM NAME / LICNO #	
ADDRESS	
CITY/COMMUNITY/STATE/ZIP	
PLAN # / PLANS EXAMINER / APPROVE DATE	
USE OF PERMIT	DETACHED RESTROOM TO RANCH
BL / ZON / PSB / SSB / BSB / RSB / OFC	03 / R-R / 300 / 050 / 080 / 100 / RIV
ZONE ORD # / LOT SZ / END / SIDE	000009 / A / / 0000

APPLIPRVT #	PS	DATE	
00015353	PB	03/29/89	24190
CONSTRUCTION FEE			$44.50
PLUMBING FEE			$14.00
ELECTRICAL FEE			$3.96
ADD'L PLAN REV FEE			$28.92
SMI FEE			$0.25
TOTAL FEE			$91.63

CA | CA X | NC | COUNTER BY | COUNTER LOT

24190

STRUCTURAL (BUILDING) PERMIT

TOTAL PERMIT COST IS $91.63

Nature of Situs Comment ---------- Action Taken ---------- Case Use No ------
18 MONTH LIMIT REST ROOM TO BE REMOVED

CONSTRUCTION ESTIMATE (NOTE: Not to be used as property valuation)

Description	FCC	Group	Type	Sq Ft	Rate	Valuation
PRIMARY DWLG	101	R-3	WOOD	128	$27.60	$3532

Construction Fee based on Total Actual Valuation of $3532 is: $44.50

ELECTRICAL FEE COMPUTATIONS * Permit Fee (if applicable) FEE: $3.00
128 Sq. Ft. DWLG @ .0075 Per Sq. Ft. FEE: $0.96

PLUMBING FEE COMPUTATIONS * Permit Fee (if applicable) FEE: $4.00
FIXTURES-Bar Sink: 0 Drinking Fntn: 0 Flr Drain: 0
Kitchen Sink: 0 Laundry Tray: 0 Drinal: 0 Wtr Closet: 2
Lavatory: 2 Shower: 0 Tub: 0 Bidet: 0 Other: 0 FEE: $10.00

SMI FEE $0.25
ADD'L PLAN REV FEE $28.92

FORM 284-208 (11-81) FILE COPY

APPLICANT NAME (L, F, MI)	RALPH GILLETTE CONST
ADDRESS	33611 ORANGE
CITY/COMMUNITY/STATE/ZIP	ELSINORE CA 923300000
JOB SITE ADDRESS/SPACE	14116 HWY 71
CITY/COMMUNITY/STATE/ZIP	ALBERHILL CA 917200000

BOK	PAG	PRC	C	TWN	RNG	SE	S
391	120	016	3	00500	05W	16	0

TRACT	LOT	MOD	SB
000000	0000	003	

TRACT NAME	POR N 1/2
OWNER NAME (L,F,MI)	QUINTANA, JOSE
PHONE #	
CONTRACTOR-FIRM NAME	RALPH GILLETTE CONST
LICNC #	350691
ADDRESS	33611 ORANGE LK ELSINORE 92330
CITY/COMMUNITY/STATE/ZIP	ELSINORE CA 923300000
PHONE #	714 674-2507
BLDG INSPECTOR	
FINAL DATE	
ARC/ENG FIRM NAME	
LICNC #	
ADDRESS	
CITY/COMMUNITY/STATE/ZIP	
PLAN #	
PLANS EXAMINER	
APPROVE DATE	
USE OF PERMIT	DETACHED RESTROOM TO RANCH

BL	ZON	FSB	SSB	SSB	RSB		OFC
03	R-R	300	050	020	100		RIV

ZONE ORD #		LOT SZ			END	SIDE
		000007	A			0000

APPL/PRMT #	PS	DATE	
00015353	PD	03/27/02	24190

CONSTRUCTION FEE	$44.50
PLUMBING FEE	$14.00
ELECTRICAL FEE	$3.96
ADD'L PLAN REV FEE	$20.92
SMI FEE	$0.25
TOTAL FEE	$91.63

CA	CK	NC	COUNTER BY	COUNTER OUT
	X			

14116 Hwy 71 Alberhill

24190

STRUCTURAL (BUILDING) PERMIT

15353

021

TOTAL PERMIT COST IS $91.63

Nature of Situs Comment — Action Taken — Case Use No

10 MONTH LIMIT REST ROOM TO BE REMOVED

CONSTRUCTION ESTIMATE (NOTE: Not to be used as property valuation)

Description	FCC	Group	Type	Sq Ft	Rate	Valuation
PRIMARY DWLG	101	R 3	WOOD	120	$27.60	$3312

Construction Fee based on Total Actual Valuation of: $3312 is: $44.50

ELECTRICAL FEE COMPUTATIONS * Permit Fee (if applicable) FEE: $3.96

120 Sq. Ft. DWLG @ .0033 Per Sq. Ft. FEE: $0.26

PLUMBING FEE COMPUTATIONS * Permit Fee (if applicable) FEE: $14.00

FIXTURES-Bar Sink: 0 Drinking Fntn: 0 Flr Drain: 0

Kitchen Sink: 0 Laundry Trav: 0 Urinal: 0 Wtr Closet: 2

Lavatory: 2 Shower: 0 Tub: 0 Bidet: 0 Other: 0 FEE: $10.00

SMI FEE $0.25

ADD'L PLAN REV FEE $20.92

FORM 284-208 (11-81) INSPECTOR

Final By Fenton 5-13-02

NO.	OPERATION	DATE	INSPECTOR
	BUILDING APPROVALS		
1	Set Back		
2	Ftgs & Frms	4-16-82	Fowler
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck	4-16-82	Fowler
7	Framing	4-16-82	Fowler
8	Vents		
9	Garage Fire Wall		
10	Fireplace P L ☐		
10A	Fireplace T O ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade	5-13-82	Fowler
	INSULATION / Thick / "R" Value		
7A	Walls (Batts)		
12B	Ceiling (Batts)		
12C	Ceiling (Blown)		
14	**Final**	5-13-82	Fowler
	PLUMBING APPROVALS		
15	Ground Plumb	4-16-82	Fowler
16	Water Piping	4-30-82	Fowler
17	Rough Plumb	4-30-82	Fowler
18	Vents	4-30-82	Fowler
19	Sewage Disposal		
20	Sewer	5-13-82	Fowler
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	**Final**	5-13-82	Fowler
	ELECTRICAL APPROVALS		
26	Power Pole		
27	Conduit	4-16-82	Fowler
28	Service Entrance		
29	Wiring	4-30-82	Fowler
29A	Grounding Wire		
29B	Bonding		
30	Fixtures	5-13-82	Fowler
31	Service		
32	**Final**	5-13-82	Fowler

NO.	OPERATION	DATE	INSPECTOR
	MECHANICAL APPROVALS		
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Compart.		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	**Final**		
OPN NO	**ADDITIONAL INFORMATION**		

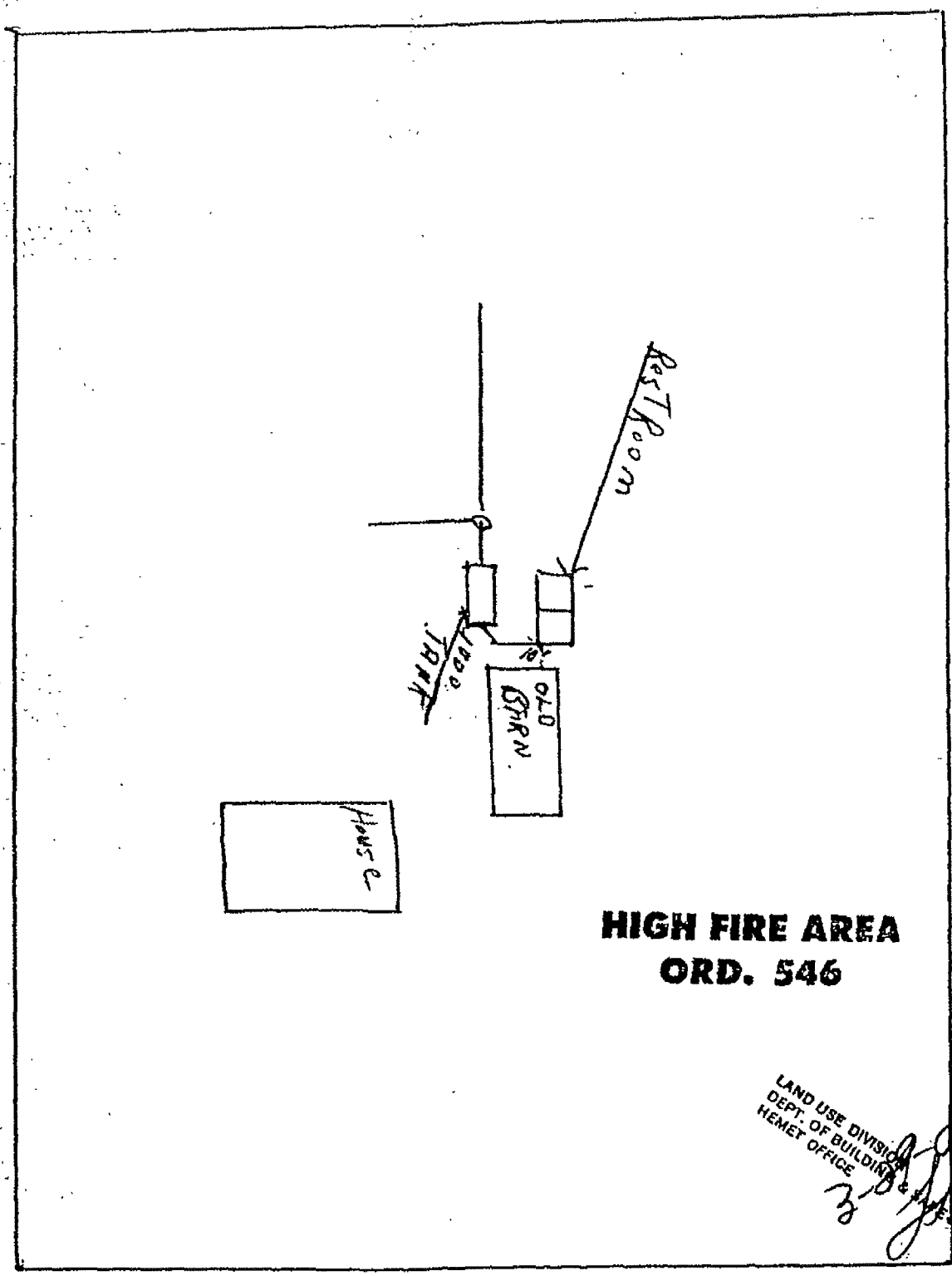
SEWAGE SYSTEM SIZE & LOCATION

Tank Pit L Line

REAR OF PROPERTY LINE

P/L P/L

STREET NAME


Rest Room
Path
OLD BARN
House
HIGH FIRE AREA
ORD. 546
LAND USE DIVISION
DEPT. OF BUILDING
HEMET OFFICE

Hwy 74

PERMIT APPLICATION

County of Riverside
Department of Building and Safety

4080 Lemon St. 2nd Floor
Riverside CA 92501
Ph. 787 6141

3525 Alessandro Rd. Rm. 202
Riverside CA 92507
Ph. 369 7312

8465 Limonite Ave.
Jurupa CA 92509
Ph. 685 8605

22103 Temecula Pkwy.
Temecula CA 92390
Ph. 694 6430

46-200 Oasis St. Rm. 110
Indio CA 92201
Ph. 342 8277

3403 W. 10th St.
Blythe CA 92225
Ph. 922 7600

This permit becomes void if work not commenced within 180 days from date of issuance. Or, if work has been suspended or abandoned for a period of 180 days

☐ LICENSED CONTRACTORS DECLARATION I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect

Date

☐ OWNER-BUILDER DECLARATION I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031 5, Business and Professions Code Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption Any violation of Section 7031 5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500)

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law)

H A B C Builder Certificate

☐ I am exempt under Sec.

Name

Date

WORKERS' COMPENSATION DECLARATION I hereby affirm that I have a certificate of consent to self-insure or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

☐ Certified copy is hereby furnished

☐ Certified copy is filed with the County Building Division Department of County

Department

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE This section need not be completed if the permit is for one hundred ($100) or less I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California

Date

Applicant

NOTICE TO APPLICANT If after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION

☐ I hereby certify that no excavation trench or more feet in depth into which a person is required to descend, and no demolition or dismantling thereof, will be made in connection with work authorized by this permit, and that no building, structure, scaffolding, falsework or temporary construction thereof will be more than thirty (30) feet high (Chap 3.2 Div 2 And 2 Sec 341 Title 8 C A L)

☐ As owner-builder I will not employ anyone to do work which would require a permit from the Division of Industrial Safety, as noted above, unless such person has a permit to do such work from the division

☐ Division of Industrial Safety Permit No

CONSTRUCTION LENDING AGENCY I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name

Lender's Address

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO ENTER I certify I have read this application and state that the information given is correct I agree to comply with all state laws and county ordinances relating to building construction and authorize a representative of the County of Riverside Department of Building and Safety to enter upon the property for which a permit applied for this permit for the purpose of making inspections

X

Signature of Applicant or Agent

Date

Print Applicant/Agent Name

APPLICANT NAME (L, F, MI)	RALPH GILLETTE CONST		
ADDRESS	33611 ORANGE ST		
CITY/COMMUNITY/STATE/ZIP	ELSINORE	CA	923300000
JOB SITE ADDRESS/SPACE	14116 HWY 71		
CITY/COMMUNITY/STATE/ZIP	ALBERHILL	CA	917200000

BOOK 391 | PAGE 120 | PRC 016 | C 3 | TWN 005S | RNG 05W | SEC 16 | LOT 0

TRACT 000000 | LOT 0000 | MAP | MOD 003 | SB

TRACT NAME POR N 1/2

OWNER'S NAME (L, F, MI) QUINTANA, JOSE | PHONE #

CONTRACTOR FIRM NAME | LICNS #

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # | BLDG INSPECTOR | FINAL DATE

ARCHTG FIRM NAME | LICNS #

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PLAN # | PLANS EXAMINER | APPROVE DATE

USE OF PERMIT INST WOOD FENCE

BL 03 | ZONE R-R | FLOOR 300 | SQFT 050 | GSQFT 060 | MAIN 100 | | FIRE RIV

ZONE ORD # | LOT SZ 000009 | A | | END | SIDE 0000

APPL PRMT # 00021768 | PS PZ | DATE 07/12/82 | 30878

INST WOOD FENCE $10.00

VAL 1,500.00

TOTAL FEE $10.00

CA | CK X | MC | COMMENTS | COMPLETED BY

30878

PERMIT FOR INST WOOD FENCE

TOTAL PERMIT COST IS $10.00

Nature of Situs Comment - ------- Action Taken ---------- Case Use No ------

18 MONTH LIMIT REST ROOM TO BE REMOVED $10.00

INST WOOD FENCE VAL 1,500.00

FORM 284 201 (11-81) FILE COPY

APPLICANT NAME (L.F.MI)
RALPH GILLETTE CONST

ADDRESS
33611 ORANGE ST

CITY/COMMUNITY/STATE/ZIP
ELSINORE CA 923300000

JOB SITE ADDRESS/SPACE
14116 HWY 71

CITY/COMMUNITY/STATE/ZIP
ALBERHILL CA 917290000

BOK	PAG	PHC	C	TWN	RNG	SE	S
391	120	016	3	005S	05W	16	0

TRACT	LOT	MOD	SB
000000	0000	003	

TRACT NAME
POR N 1/2

PHONE #

OWNER NAME (L.F.MI)
QUINTANA, JOSE

LICNC #

CONTRACTOR-FIRM NAME

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # | BLDG INSPECTOR | FINAL DATE

LICNC #

ARC/ENG FIRM NAME

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PLAN # | PLANS EXAMINER | APPROVAL DATE

USE OF PERMIT
INST WOOD FENCE

BL	ZON	FSB	SSB	SSB	RDS		OFC
03	R-R	300	050	060	100		R1U

ZONE ORD #		LOT SZ			END	SIDE
		000009	A			0000

APPL/PRMT #
00021768

PS
P1

DATE
07/12/88

30878

$10.00

INST WOOD FENCE

TOTAL FEE $10.00

CA	CA	NC	COUNTER BY	COUNTER LOT
	X			

30878
11758
NC

14116 Hiway 71

PERMIT FOR INST WOOD FENCE

TOTAL PERMIT COST $ 10.00

Nature of Site: Comment — TO BE REMOVED — Case Use No ——

$10.00

18 MONTH LIMIT REST ROOM

INST WOOD FENCE

FORM 284-208 (11-81) INSPECTOR

FINAL BX Fence 7-20-88

NO	OPERATION	DATE	INSPECTOR
	BUILDING APPROVALS		
1	Set Back		
2	Figs & Frms		
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck		
7	Framing		
8	Vents		
9	Garage Fire Wall		
10	Fireplace F.I. ☐		
10A	Fireplace F.O. ☐		
11	Exterior Lath		
12	Interior Lath		
12A	Drywall		
13	Finish Grade		
	INSULATION	Type	R Value
12A	Walls (Batts)		
12B	Ceiling (Batts)		
12C	Ceiling (Blown)		
14	**Final**		
	PLUMBING APPROVALS		
15	Ground Plumb		
16	Water Piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	**Final**		
	ELECTRICAL APPROVALS		
26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring		
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	**Final**		

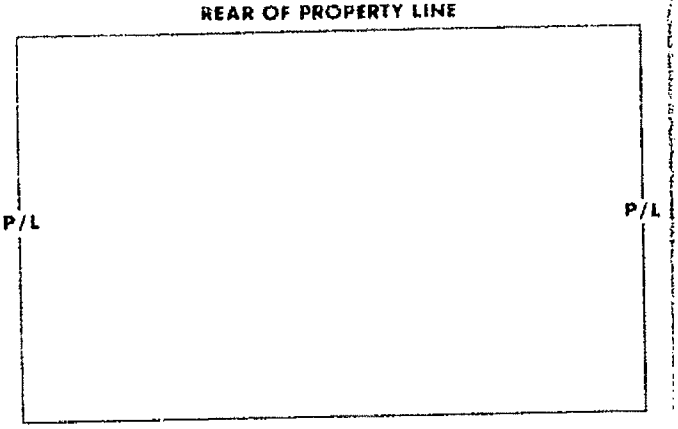
NO	OPERATION	DATE	INSPECTOR
	MECHANICAL APPROVALS		
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Comport		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	**Final**		

ADDITIONAL INFORMATION

SEWAGE SYSTEM SIZE & LOCATION

Type _____ Fr _____ L Line _____

REAR OF PROPERTY LINE



STREET NAME _____

PERMIT APPLICATION
County of Riverside
Department of Building and Safety

4080 Lemon St 2nd Floor, Riverside, CA 92501, Ph 787-6140 | 135 N. Alessandro Rd Ste 203, Banning CA 92220, Ph 849-7312 | 880 S. State Street, Hemet, CA 92343, Ph 658-4464 | 237 North "D" Street, Perris CA 92370, Ph 657-3658 | 46-209 Oasis St Ste 310, Indio, CA 92201, Ph 342-8271 | 100 N. Broadway, Blythe, CA 92225, Ph 922-2670

This permit becomes void if work not commenced within 180 days from date of issuance OR, if work has been suspended or abandoned for a period of 180 days

☑ LICENSED CONTRACTORS DECLARATION I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect

☐ OWNER-BUILDER DECLARATION I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.)

☐ I am exempt under Sec _____, B & P.C. (Attach Certificate).

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

☐ Certified copy is hereby furnished

☐ Certified copy is filed with the County Building Inspection Department or County _____ Department.

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE This section need not be completed if the permit is for one hundred ($100) or less. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION:

☐ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend, will be made in connection with work authorized by this permit, and that no building structure, scaffolding, falsework, or demolition or dismantling thereof, will be more than thirty-six (36) feet high (Chap. 3.2, Grp 2, Art 2, Sec 341, Title 8, C.A.C.).

☐ As owner-builder, I will not employ anyone to do work which would require a permit from the Division of Industrial Safety, as noted above, unless such person has a permit to do such work from the division

☐ Division of Industrial Safety Permit No. _____

CONSTRUCTION LENDING AGENCY: I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name _____

Lender's Address _____

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION OF ENTRY I certify I have read this application and state that the information given is correct. I agree to comply with all state laws and county ordinances relating to building construction, and authorize a representative of the County of Riverside, Department of Building and Safety to enter upon the property for which I have applied for a permit for the purpose of making inspections.

X [signature] 10-26-83
Signature of Applicant or Agent — Date

Ralph J. Gillette
Print Applicant/Agent Name

APPLICANT NAME (L,F,MI)	RALPH GILLETT CONST
ADDRESS	33611 ORANGE LN
CITY/COMMUNITY/STATE/ZIP	ELSINORE CA 923300000
JOB SITE ADDRESS/SPACE	14116 HWY 71
CITY/COMMUNITY/STATE/ZIP	ALBERHILL CA 917200000
BOK / PAG / PRC / C	391 / 120 / 016 / 3
TWN / RNG / SE / S	005S / 005W / 16 / 0
TRACT / LOT / MOD / SB	000000 / 0000 / 109 / 3
TRACT NAME	POR N 1/2
OWNER NAME (L,F,MI) / PHONE #	MOINTANA, JOSE
CONTRACTOR FIRM NAME / LICNO #	RALPH GILLETTE CONSTRUCTION / 350691
ADDRESS	33611 ORANGE STREET
CITY/COMMUNITY/STATE/ZIP	LAKE ELSINORE CA 923300000
PHONE # / BLDG INSPECTOR / FINAL DATE	714-674-2587
ARC/ENG FIRM NAME / LICNO #	
ADDRESS	
CITY/COMMUNITY/STATE/ZIP	
PLAN # / PLANS EXAMINER / APPROVE DATE	
USE OF PERMIT	30 STALL HORSE BARN
BL / ZON / FSB / FAB / FSB / FSB / OFC	03 / R-R / 300 / 050 / 060 / 100 / RIV
ZONE ORD # / LOT# / END / SIDE	000009 / A / 0000

APPL/PMT #	00049207
PB	PB
DATE	10/26/83
	130239
CONSTRUCTION FEE	$346.00
ADD'L PLAN REV FEE	$52.65
SMI FEE	$4.93
TOTAL FEE :	$403.58
CA / CK / NO / COUNTER B.I.	CA / X / / gp
COUNTER L.U.T.	

130239

STRUCTURAL (BUILDING) PERMIT

TOTAL PERMIT COST IS $403.58

CONSTRUCTION ESTIMATE (NOTE: Not to be used as property valuation)

Description	FCC	Group	Type	Sq Ft	Rate	Valuation
PRIMARY AGRIC	900	M-3	V-N	4440	$10.50	$46620
SECNDRY PRCH	900	PR	V-N	4256	$5.60	$23833

Construction Fee based on Total Actual Valuation of $70453 is: $346.00

SMI FEE $4.93
ADD'L PLAN REV FEE $52.65

CK 1570

COPY

APPLICANT NAME (L,F,M): RALPH GILLETT CONST
ADDRESS: 33611 ORANGE LN
CITY/COMMUNITY/STATE/ZIP: ELSINORE CA 92330
JOB SITE ADDRESS/SPACE: 14116 HWY 71
CITY/COMMUNITY/STATE/ZIP: ALBERHILL CA 91720
BOOK 391 | PAG 120 | PRC 016 | C 3 | TWN 05S | RNG 06W | SZ 16 | S 0
TRACT 000000 | LOT 0000 | MOD DUP | SB
TRACT NAME: PUR N 1/2
OWNER NAME (L,F,M): QUINTANA, JOSE | PHONE #
CONTRACTOR/FIRM NAME: RALPH GILLETTE CONSTRUCTION | LIC# 350691
ADDRESS: 33611 ORANGE STREET
CITY/COMMUNITY/STATE/ZIP: LAKE ELSINORE CA 92530
PHONE # | BLDG INSPECTOR: 2-Telstone | FINAL DATE: 1/12/87
ARC/ENG FIRM NAME | LIC#
ADDRESS
CITY/COMMUNITY/STATE/ZIP
PLAN # | PLANS EXAMINER | APPROVE DATE
USE OF PERMIT: 30 STALL HORSE BARN
BL U/S | ZON R-R | FOB 300 | BSB 650 | SSB 650 | REB 650 | OPC P.C.
ZONE ORD # | LOT SZ 1.0 ACRES | H | END | SIDE

APPLIPRMT # 00049207 | PB PB | DATE 10/26/86 | 130239

CONSTRUCTION FEE	$346.00
ADD'L PLAN REV FEE	$27.65
SMI FEE	$1.95
TOTAL FEE :	$375.60

CA | CK # | NC | COUNTER B.I. | COUNTER L.U.Y.

14116 Hwy 91
Alberhill

130239

49207

TOTAL PERMIT COST IS $375.60

DESCRIPTION FEE GROUP TYPE VALUATION FACTOR
PRIMARY AREA 346 B-1 U-N 92,000 $3.76 346.00
SECONDARY AREA 346 B-1 U-N 92,000 $3.76 346.00
CONSTRUCTION FEE BASED ON TOTAL BUILDING VALUATION OF $346.00

SMI FEE 1.95
ADD'L PLAN REV FEE 27.65

130016
119387

FORM 204-206 (11-82) INSPECTOR

NO.	OPERATION	DATE	INSPECTOR
	BUILDING APPROVALS		
1	Set Back		
2	Ftgs & Frms		
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck	11/16/83	[illegible]
7	Framing	1/12/84	[illegible]
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L. ☐	[illegible]	[illegible]
10A	Fireplace T.O. ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		
	INSULATION — Thick — "R" Value		
7A	Walls (Batts)		
12B	Ceiling (Batts)		
12C	Ceiling (Blown)		
14	Final	1/12/84	[illegible]
	PLUMBING APPROVALS		
15	Ground Plumb		
16	Water piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	Final		
	ELECTRICAL APPROVALS		
26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring		
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	Final		

NO.	OPERATION	DATE	INSPECTOR
	MECHANICAL APPROVALS		
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Compart.		
35	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	Final		

OP'N NO.	**ADDITIONAL INFORMATION**

SEWAGE SYSTEM SIZE & LOCATION

Tank Pit L.Line

REAR OF PROPERTY LINE

P/L P/L

STREET NAME

PERMIT APPLICATION

County of Riverside
Department of Building and Safety

4080 Lemon St 2nd Floor, Riverside, CA 92501, Ph 787-6140 | 135 N Alessandro Rd Rm 203, Banning, CA 92220, Ph 849-4312 | 830 N State Street, Hemet CA 92343, Ph 658-4461 | 777 North "D" Street, Perris CA 92370, Ph 657-3888 | 46-209 Bobs St Rm 310, Indio CA 92201, Ph 347-8271 | 160 N Broadway, Blythe CA 92225, Ph 922-7670

This permit becomes void if work not commenced within 180 days from date of issuance OR if work has been suspended or abandoned for a period of 180 days

☐ LICENSED CONTRACTORS DECLARATION I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

☐ OWNER-BUILDER DECLARATION. I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code. Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.)

☐ I am exempt under Sec. _____ B&P C (Attach Certificate)

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION. I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

☐ Certified copy is hereby furnished

☐ Certified copy is filed with the County Building Inspection Department or County _____ Department

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE. This section need not be completed if the permit is for one hundred ($100) or less. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION

☐ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend, will be made in connection with work authorized by this permit, and that no building structure, scaffolding, falsework, or demolition or dismantling thereof, will be more than thirty-six (36) feet high. (Chap. 3.2, Grp 2, Art 2, Sec 341, Title 8, C.A.C.).

☐ As owner-builder, I will not employ anyone to do work which would require a permit from the Division of Industrial Safety, as noted above, unless such person has a permit to do such work from the division.

☐ Division of Industrial Safety Permit No _____

CONSTRUCTION LENDING AGENCY. I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name _____

Lender's Address _____

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION OF ENTRY. I certify I have read this application and state that the information given is correct. I agree to comply with all state laws and county ordinances relating to building construction, and authorize a representative of the County of Riverside, Department of Building and Safety to enter upon the property for which I have applied for this permit for the purpose of making inspections.

X Harry E. Gillette 1-9-84

Signature of Applicant/Agent — Date

Harry E. Gillette

Print Applicant/Agent Name

APPLICANT NAME (L, F, MI)	RALPH GILLETTE CONSTRUCTION
ADDRESS	33611 ORANGE ST
CITY/COMMUNITY/STATE/ZIP	LAKE ELSINORE CA 923300000
JOB SITE ADDRESS/SPACE	14118 HWY 71
CITY/COMMUNITY/STATE/ZIP	ALBERHILL CA 917200000
BOOK 391 PAG 120 PRC 016 C 3 TWN 05S RNG 05W SE 16 B 0	
TRACT 000000 LOT 0000 MOD 109 SB	
TRACT NAME	POR N 1/2
OWNER NAME (L, F, MI)	QUINTANA, JOSE PHONE #
CONTRACTOR FIRM NAME	RALPH GILLETTE CONSTRUCTION LICENSE # 350691
ADDRESS	33611 ORANGE STREET
CITY/COMMUNITY/STATE/ZIP	LAKE ELSINORE CA 923300000
PHONE	714-674-2587 BLDG. INSPECTOR FINAL DATE
ARC/ENG FIRM NAME	LICNC #
ADDRESS	
CITY/COMMUNITY/STATE/ZIP	
PLAN #	PLANS EXAMINER APPROVE DATE
USE OF PERMIT	RETAINING WALL VAL 480.00
BI 03 ZON R-R FEE 300 050 060 100 OCC RIV	
ZONE ORD #	LOT SIZ 000009 A END SIDE 0000

APPL/PRMT #	00057437 PS PZ DATE 01/09/84 134315
	RETAINING WALL VAL 4 $0.00
TOTAL FEE	$15.00
CA	CK X NC COUNTER B.I. COUNTER L.U.T.

134315

PERMIT FOR RETAINING WALL VAL 4

TOTAL PERMIT COST IS $15.00

RETAINING WALL VAL 4 $0.00

003

FORM 284-206 (11-81) FILE COPY

APPLICANT NAME (L, F, MI): RALPH GILLETTE CONSTRUCTION

ADDRESS: 33611 ORANGE ST

CITY/COMMUNITY/STATE/ZIP: LAKE ELSINORE CA 923300000

JOB SITE ADDRESS/SPACE: 14116 HWY 71

CITY/COMMUNITY/STATE/ZIP: ALBERHILL CA 917200000

BOOK	PAGE	PARCEL	S		TWN	RNG	SE	S
391	120	016	3		005S	005W	16	D

TRACT	LOT		MOD	SB	
000000	0000		109		

TRACT NAME: FOR N 1/2

OWNER NAME (L, F, MI): QUINTANA, JOSE — PHONE #:

CONTRACTOR FIRM NAME: RALPH GILLETTE CONSTRUCTION — LICNC #: 350691

ADDRESS: 33611 ORANGE STREET

CITY/COMMUNITY/STATE/ZIP: LAKE ELSINORE CA 923300000

PHONE: 714-674-2507 — BLDG. INSPECTOR: [illegible] — FINAL DATE: 10-3-84

ARC/ENG FIRM NAME — LICNC #

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PLAN # — PLANS EXAMINER — APPROVE DATE

USE OF PERMIT: RETAINING WALL VAL 480.00

BLDG	ZONE	FRB	SRB	GSB	RSB		OCC
03	R-R	300	050	050	100		R1U

ZONE ORD # — LOT BZ: 000009 A — END — SIDE: 0000

APPL/PRMT #: 00057437 — PS: P2 — DATE: 01/09/84 — 134315

RETAINING WALL VAL 4 $0.00

TOTAL FEE: $15.00

CA	CK	NC	COUNTER B.I.	COUNTER L.U.T.
	X			

14116 HWY 71 ALBERHILL 134315

P E R M I T FOR RETAINING WALL VAL 4

TOTAL PERMIT COST IS $15.00 57437

RETAINING WALL VAL 4 $0.00

003

FORM 284-208 (11-81) INSPECTOR

BUILDING APPROVALS

NO.	OPERATION	DATE	INSPECTOR
1	Set Back		
2	Figs & Frms	1/12/84	
2A	Slab Grade		
3	Steel	1/12/84	
4	Grout Blocks	1/23/84	
5	Bond Beams	1/23/84	
6	Roof Deck		
7	Framing		
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L. ☐		
10A	Fireplace T.O. ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		
	INSULATION (Thick / "R" Value)		
7A	Walls (Batts)		
12B	Ceiling (Batts)		
12C	Ceiling (Blown)		
14	**Final**	10-3-84	

PLUMBING APPROVALS

15	Ground Plumb		
16	Water Piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	**Final**		

ELECTRICAL APPROVALS

26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring		
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	**Final**		

MECHANICAL APPROVALS

NO.	OPERATION	DATE	INSPECTOR
33	Ventilation System		
34	Planums & Ducts		
35	Furnace Compart.		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	**Final**		

ADDITIONAL INFORMATION

OP'N NO.

SEWAGE SYSTEM SIZE & LOCATION

Tank Pit Line

REAR OF PROPERTY LINE

P/L P/L

STREET NAME

PERMIT APPLICATION

County of Riverside Department of Building and Safety

4080 Lemon St. 2nd Floor, Riverside, CA 92501, Ph: 787-6140 | 135 N. Alexander Rd. Rm. 203, Banning, CA 92220, Ph: 849-7312 | 680 N. State Street, Hemet, CA 92343, Ph: 658-4464 | 37 North "D" Street, Perris, CA 92570, Ph: 657-3888 | 46-200 Oasis St. Rm. 310, Indio, CA 92201, Ph: 342-8271 | 160 N. Broadway, Blythe, CA 92225, Ph: 922-7670 | 37403 West Rd. # 102, Temecula, CA 92390-7261, Ph: 676-7736

401821

This permit becomes void if work not commenced within 180 days from date of issuance, OR, if work has been suspended or abandoned for a period of 180 days

☐ LICENSED CONTRACTORS DECLARATION: I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

Date _____ Applicant _____

☐ OWNER-BUILDER DECLARATION: I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).)

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.)

☐ I am exempt under Sec. _____, B. & P.C. (Attach Certificate).

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION: I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

☐ Certified copy is hereby furnished.

☐ Certified copy is filed with the County Building Inspection Department or County _____ Department

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE: This section need not be completed if the permit is for one hundred ($100) or less. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation laws of California.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION:

☐ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend will be made in connection with work authorized by this permit, and that no building structure, scaffolding, falsework, or demolition or dismantling thereof, will be more than thirty-six (36) feet high (Chap. 3.2, Grp 2, Art 2, Section 341 Title 8, C.A.C.)

☐ As owner-builder, I will not employ anyone to do work which would require a permit from the Division of Industrial Safety, as noted above, unless such person has a permit to do such work from the division.

☐ Division of Industrial Safety Permit No. _____

CONSTRUCTION LENDING AGENCY: I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name _____

Lender's Address _____

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION OF ENTRY: I certify that I have read this application and state that the information given is correct. I agree to comply with all state laws and county ordinances relating to building construction, and authorize a representative of the County of Riverside, Department of Building and Safety to enter upon the property for which I have applied for this permit for the purpose of making inspections.

X Mark Marcum 12/30/87

Signature of Applicant or Agent Date

Print Applicant/Agent Name

APPLICANT NAME (L,F,MI): MARK, MARCUM

ADDRESS: 18266 VAN BUREN

CITY/COMMUNITY/STATE/ZIP: RIVERSIDE CA 92504

JOB SITE ADDRESS/SPACE: 14116 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91720

BOK: 391 | PAG: 120 | PRC: 016 | C: 3 | TWN: 005S | RNG: 005W | SE: 16 | S: 0

TRACT: 000000-00 | LOT: 000 | MOD: 109 | SB:

TRACT NAME:

OWNER NAME (L,F,MI): HARRIS, RUSSELL | PHONE #:

CONTRACTOR-FIRM NAME: D/B | LICNC #: 0794716F

ADDRESS: 18266 VAN BUREN

CITY/COMMUNITY/STATE/ZIP: RIVERSIDE CA 92504

PHONE #: 714-780-2242 | BLDG INSPECTOR: | FINAL DATE:

ARC/ENG FIRM NAME: | LICNC #:

ADDRESS:

CITY/COMMUNITY/STATE/ZIP:

PHONE #: | PLANS EXAMINER: | APPROVE DATE:

USE OF PERMIT: BARN 1440 SQ FT

BL: 00 | ZON: | FSB: 020 | SSB: 017 | SSB: 010 | RSB: 100 | OFC: RIV

ZONE ORD #: R-R | LOT SZ: 009.48 | END: 0000 | SIDE:

14116 TEMESCAL CANYON

CORONA CA 91720

LOG #: 00177861 | PS | DATE: 12/30/87 | 401821

BUILDING	$136.60
S.M.I.P TAX	$1.40
ELECTRICAL	$21.00

217.3
dc 90-794
dc 2-8-21
dc 2-16

TOTAL FEE : $159.00

CA | CK: X | NC | COUNTER BY | COUNTER LOT

401821

0002 MULTIPLE PERMIT

BUILDING FCC CD: 328 TOTAL FEES $136.60
Valuation: Curr 19771 Old
Variance Review Fee -3.90

# of Floors 1 # of Bedrooms # of Rooms
PRIMARY STRUCTURE: FCC CD: 328
Desc: AGRICX3 Group: M-1 Type: V-N
Sq-Ft 1440 Occupancy Load 0 Rate 13.73 Valuation 19771
Building Fee 140.50

ELECTRICAL TOTAL FEES $21.00
Other Fee: 1440 Sq-ft AGRIC @ .0125 / Sq-ft Fee 18.00
Processing Fee 3.00

FILE COPY

FORM 284-208 (1-87)

APPLICANT NAME (LFM): HARR, HARCUM

ADDRESS: 18766 VAN BUREN

CITY/COMMUNITY/STATE/ZIP: RIVERSIDE CA 92504

JOB SITE ADDRESS/SWC: 14116 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91720

BOK	PAG	PRC	SC		TWN	RNG	SE	QQ
391	120	016			005S	005W	16	

TRACT	LOT		MOD	SB	
000000-00	000	1	09		

TRACT NAME:

OWNER NAME (LFM): HARRIS, RUSSELL — PHONE #:

CONTRACTOR FIRM NAME: [illegible] 07 — LICNC #: 594716F

ADDRESS: 18266 VAN BUREN

CITY/COMMUNITY/STATE/ZIP: RIVERSIDE CA 92504

PHONE #: 714-780-2242 — BLDG INSPECTOR: Beebeatte — FINAL DATE: 5/5/93

ARC/ENG FIRM NAME — LICNC #:

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # — PLANS EXAMINER — APPROVE DATE

USE OF PERMIT: BARN 1440 SQ FT

BL	ZON	FSB	SSB	SSB	RSB		OFC
		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

ZONE GRD #	LOT SZ			BND	SIDE

LOG # 00177861 — PS — DATE 12/30/92 — **401821**

BUILDING	$136.60
S.M.I.P TAX	$1.40
ELECTRICAL	$21.00

TOTAL FEE: $159.00

CA	CK	NO	COUNTER BL	COUNTER L.U.T.

14116 TEMESCAL CYN

401821

0002 Corona MULTIPLE PERMIT

BUILDING — FCC CD: 328 — TOTAL FEES $136.60

Valuation: Curr 19721 Old — Variance Review Fee -3.90

# of Floors 1 # of Bedrooms — # of Rooms

PRIMARY STRUCTURE: — FCC CD: 328

Desc: AGRICX3 Group: M-1 Type: V-N

Sq-Ft 1440 Occupancy Load 0 Rate 13.73 Valuation 19721

Building Fee 140.50

1440 Sq-Ft. Barn

ELECTRICAL — TOTAL FEES $21.00

Other Fee: 1440 Sq-ft AGRIC @ .0125 / Sq-ft Fee 18.00

Processing Fee 3.00

INSPECTOR'S

FORM 284-208 (1-87)

F/C

BUILDING APPROVALS

NO.	OPERATION	DATE	INSPECTOR
1	Set Back		
2	Ftgs & Frms	4/13/88	Beckwith
2A	S[illegible] Grade	4/	
3	Steel	4/15/88	Beckwith
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck		
7	Framing	5/5/88	Beckwith
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L. ☐		
10A	Fireplace T.O. ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		

	INSULATION	Thick	"R" Value		
7A	Walls (Batts)				
12B	Ceiling (Batts)				
12C	Ceiling (Blown)				
14	**Final**			5/5/88	Beckwith

PLUMBING APPROVALS

15	Ground Plumb		
16	Water Piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	**Final**		

ELECTRICAL APPROVALS

26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring	5/5/88	Beckwith
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	**Final**	5/5/88	Beckwith

MECHANICAL APPROVALS

NO	OPERATION	DATE	INSPECTOR
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Comport		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	**Final**		

ADDITIONAL INFORMATION

OPN NO

SEWAGE SYSTEM SIZE & LOCATION

Tank Pit [illegible]

REAR OF PROPERTY LINE

P/L P/L

STREET NAME

Department of Building and Safety

COUNTY OF RIVERSIDE,

TO: Dist. RIV

ADDRESS: 14116 TEMESCAL Date 2/2/88

CORRECTION NOTICE 10:00 AM

Permit No. 401821

1) PROVIDE SUPPLEMENTAL PLAN CHECK ON BREEZEWAY - NOT ON PLAN - MUST BE STAMPED BY ENGINEER - 2 COPIES SUBMITTED TO BUILDING DEPARTMENT.

2) PROVIDE WELDER'S CERTIFICATE FOR FIELD WELDS

3) ELECTRICAL IS NOT COMPLETE

4) PLAN SHOWS POST SPACING @ 8½' THEY'RE INSTALLED @ 12' REVISE PLAN AS IN #1 ABOVE

5) DETAIL 'C' SHOWS BOLTED DETAIL NOT CAST INTO CONCRETE

PROVIDE ENGINEERED "AS BUILT" PLAN - 2 COPIES SUBMITTED FOR PLAN CHECK

Jed Beckwith

Inspector

DO NOT REMOVE FROM JOBSITE

284-205 (rev. 1/83) DISTRIBUTION: WHITE-Job, CANARY-Inspector, PINK-Office

Department of Building and Safety

COUNTY OF RIVERSIDE

TO: Dist. RIV

ADDRESS: 14116 TEMESCAL CYN Date 1/11/88

CORRECTION NOTICE 10:40

Permit No. 401821

1) GRADING PERMIT REQUIRED FOR FILL IN EXCESS OF 12" BELOW STRUCTURE (2 7003 APPEN. 1985 UBC) - ~~PRIOR~~ OBTAIN PERMIT - PROVIDE COMPAC TION REPORT

2) FOOTINGS ARE TO BE 24" BELOW NATURAL GRADE (2907, 29A UBC 1985)

3) PAGE 15 OF CALC'S REQUIRES 4-#4's @ BOTTOM + TWO #4's AT TOP - STEEL IS TO BE 3" FROM EARTH (UBC 2607(H))

4) SOME FOOTINGS MISSING - SEE FOUNDATION PLAN.

Ted Beckwith

Inspector

DO NOT REMOVE FROM JOBSITE

284-205 (rev. 1/83) DISTRIBUTION: WHITE-Job, CANARY-Inspector, PINK-Office

Department of Building and Safety

COUNTY OF RIVERSIDE

TO: Dist. RIV

ADDRESS: 14116 TEMESCAL CYN Date 1/6/88

CORRECTION NOTICE 1145AM

Permit No. 401821

1) ANY CHANGES TO THE APPROVED PLAN MUST BE APPROVED BY ENGINEER DESIGNING PLAN AND RE SUBMITTED TO THE BUILDING DEPARTMENT FOR SUPPLEMENTAL PLAN CHECK. FOOTINGS MUST BE 1'6" WIDE BY 4'6" DEEP FOR SIDE COLUMNS (PER CALC'S) AND 3'0" SQUARE BY 12" DEEP WITH STEEL AS PER DETAIL 'C' ON PAGE 2

2) DO NOT POUR CONCRETE UNTIL RESOLVED.

Jed Beebe

Inspector

DO NOT REMOVE FROM JOBSITE

284-205 (rev. 1/83) DISTRIBUTION: WHITE-Job, CANARY-Inspector, PINK-Office

LEGAL DESCRIPTION FOR PARCEL NO. 391120016-3

9.48 ACRES M/L IN POR NE 1/4 OF SEC 16 T5S R5W

FOR TOTAL DESCRIPTION SEE ASSESSORS MAPS

BROOKWOOD, COMMODORE 1981

STREET AND MAILING ADDRESS

14116 TEMESCAL CANYON ROAD

CORONA, CA 91719

DEPARTMENT OF BUILDING AND SAFETY
COUNTY OF RIVERSIDE

OWNER-BUILDER VERIFICATION

14116 TEMESCAL Cyn., Corona
Address

An "owner-builder" building permit has been applied for in your name and bearing your signature.

Please complete and return this information in the envelope provided at your earliest convenience to avoid unnecessary delay in processing and issuing your building permit. No building permit will be issued until this verification is received.

1. I personally plan to provide the major ~~labor~~ and materials for construction of the proposed property improvement (yes ~~or no~~) YES

2. I (have/~~have not~~) HAVE signed an application for building permit for the proposed work.

3. I have contracted with the following person (firm) to provide the proposed construction:

   Name NONE Phone _____

   Address _____ City _____

   Contractors License No. _____

4. I plan to provide portions of the work, but I have hired the following person to coordinate, supervise, and provide the major work:

   Name NONE Phone _____

   Address _____ City _____

   Contractors License No. _____

5. I will provide some of the work but I have contracted (hired) the following persons to provide the work indicated:

Name	Address	Phone	Type of Work

I DECLARE UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

PROPERTY OWNER: Mark Marcum 12-30-87
(Signed) (Date)

284-2002 Rev: 1/83

DEPARTMENT OF BUILDING AND SAFETY
COUNTY OF RIVERSIDE

OWNER-BUILDER INFORMATION

Dear Property Owner:

An application for a building permit has been submitted in your name listing yourself as the builder of the property improvements specified.

For your protection you should be aware that as owner-builder you are the responsible party of record on such a permit. Building permits are not required to be signed by property owners unless they are personally performing their own work. If your work is being performed by someone other than yourself, you may protect yourself from possible liability if that person applies for the proper permit in his or her name.

Contractors are required by law to be licensed and bonded by the State of California and, where required, to have a business license from the city or county. They are also required by law to put their license number on all permits for which they apply.

If you plan to do your own work, with the exception of various trades that you plan to subcontract, you should be aware of the following information for your benefit and protection.

If you employ or otherwise engage any persons other than your immediate family, and the work (including materials and other costs) is $200 or more for the entire project, and such persons are not licensed as contractors or subcontractors, then you may be an employer.

If you are an employer, you must register with the state and federal government as an employer and you are subject to several obligations including state and federal income tax withholding, federal social security taxes, workers' compensation insurance, disability insurance costs, and unemployment compensation contributions.

There may be financial risks for you if you do not carry out these obligations, and these risks are especially serious with respect to workers' compensation insurance.

For more specific information about your obligations under federal law, contact the Internal Revenue Service (and, if you wish, the U.S. Small Business Administration). For more specific information about your obligations under state law, contact the Department of Benefit Payments and the Division of Industrial Accidents.

If the structure is intended for sale, property owners who are not licensed contractors are allowed to perform their work personally or through their own employees, without a licensed contractor or subcontractor, only under limited conditions.

A frequent practice of unlicensed persons professing to be contractors is to secure an "owner-builder" building permit, erroneously implying that the property owner is providing his or her own labor and material personally. Building permits are not required to be signed by property owners unless they are performing their own work personally.

Information about licensed contractors may be obtained by contacting the Contractors' State License Board in your community or at 1020 N Street, Sacramento, California 95814.

Please complete and return the enclosed owner-builder verification form so that we can confirm that you are aware of these matters. The building permit will not be issued until the verification is returned.

Sincerely,

DEPARTMENT OF BUILDING AND SAFETY

Leopoldo Rojo, Jr.

Leopoldo Rojo, Jr.
Director

284-2001 7/80

Permit Application

County of Riverside Department of Building and Safety

4080 Lemon St. 2nd Floor Riverside, CA 92501 Ph. 787-4146	135 N. Alessandro Rd. Ste. 203 Beaumont, CA 92220 Ph. 845-7310	12375 E. 28th Street San Bernardino, CA 92383 Ph. 884-7555	178 N. Williamson Ave. Hemet, CA 92370 Ph. 652-3096	46-990 Oasis St. Ste. 310 Indio, CA 92201 Ph. 342-8277	180 W. Broadway Blythe, CA 92225 Ph. 922-4909	37600 Sky Rd. #102 Temecula, CA 92590-2561 Ph. 676-7230

418464

This permit becomes void if work not commenced within 180 days from date of issuance OR if work has been suspended or abandoned for a period of 180 days.

☐

LICENSED CONTRACTOR'S DECLARATION: I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

☑

OWNER-BUILDER DECLARATION: I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.)

☐ I am exempt under Sec. _____, B. & P.C. (Attach Certificate)

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION: I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C.)

☑ Certified copy is hereby furnished

☐ Certified copy is filed with the County Building Inspection Department or County _____ Department

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE: (This section need not be completed if the permit is for one hundred ($100) or less.) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT NOTIFICATION

☐ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend, will be made in connection with work authorized by this permit, and that no building, structure, scaffolding, falsework or demolition or shoring thereof, will be more than thirty six (36) feet high. (Chap. 3.2, Grp 2, Art 2, Section 341, Title 8, C.A.C.)

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☐ Division of Industrial Safety Permit No. _____

CONSTRUCTION LENDING AGENCY: I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name _____

Lender's Address _____

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X _____ 3-10-88

Signature of Applicant or Agent — Date

Print Applicant/Agent Name

APPLICANT NAME (LF,MI): HARRIS, MELODY BROOK

ADDRESS: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

JOB SITE ADDRESS/SPACE: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

BOK	PAG	PRC	C		TWN	RNG	SE	SC
391	120	002	0		005S	005W	14	0

TRACT	LOT	MAP	SB
002458-00	000	99999	

TRACT NAME: COC 2458

OWNER NAME (LF,MI): HARRIS, MELODY BROOK — PHONE #

CONTRACTOR-FIRM NAME: O/B — LIC. NO.: 0210068E

ADDRESS: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE ZIP: CORONA CA 91719

PHONE #: 714-674-9247 — BLDG INSPECTOR — FINAL DATE

ARC/ENG FIRM NAME — LIC. #

ADDRESS

CITY/COMMUNITY/STATE-ZIP

PHONE # — PLANS EXAMINER — APPROVAL DATE

USE OF PERMIT: MH SITE PREP 550 SQ FT

BL	ZON	FSB	SSB	RSB	RSB	OFC
		600	015	600	010	RIU

ZONE ORD # R-R — LOT SZ — DAM — SIDE

14114 TEMESCAL CANYON

LEAD #: 00183547 — PS — DATE: 03/10/88 — 418464

MOBILE HOME $35.00

V#2650

TOTAL FEE: $35.00

CA	CK	MC	COUNTER BY	COUNTER LOT
	X			

CORONA CA 91719

418464

0002 MOBILE HOME

MOBILE HOMES
Sewage Disposal 1
Water cndtner 0
Lot gas pipe 1
Sewer hookup 0
Water pipe 1
Gas repair 0

TOTAL FEES		$35.00
Lot Service	1 Fee	15.00
Water repair	0 Fee	5.00
Riser	0 Fee	5.00
Processing Fee		10.00

FILE COPY

FORM 284-708 (1-87)

APPLICANT NAME (LF,MI)
HARRIS, MELODY BROOK

ADDRESS
14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP
CORONA CA 91719

JOB SITE ADDRESS/SPACE
14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP
CORONA CA 91719

BOK	PAG	PRC	C	TWN	RNG	SE	S
391	120	002	0	0055	0050	16	0

TRACT	LOT	MOD	SB
002458-00	000	99995	

TRACT NAME
COC 2458

OWNER NAME (LF,MI)
HARRIS, MELODY BROOK

PHONE #

CONTRACTOR/FIRM NAME
D/B

LICNC #
0210068E

ADDRESS
14114 TEMESCAL CANYON

CITY, COMMUNITY, STATE/ZIP
CORONA CA 91719

PHONE #
714-674-9242

BLDG INSPECTOR

FINAL DATE
6-2258

ARC/ENGR FIRM NAME

LICNC #

ADDRESS

CITY, COMMUNITY/STATE/ZIP

PHONE #

PLANS EXAMINER

APPROVE DATE

USE OF PERMIT
MH SITE PREP 550 SQ FT

DL	ZON	FSB	SSB	SSB	RSB		OFC

ZONE ORD #		LOT SZ			BLD	SIDE

LOG #
00183542

FS

DATE
07/10/88

418464

MOBILE HOME $ 35.00

VERIFIED

TOTAL FEE $

CA	CK	MC	COUNTER BY	COUNTER DAT.

14114 Temescal Cyn.
Corona

418464

0002 MOBILE HOME

MOBILE HOMES
Sewage Disposal 1
Water cndtnr 0
Lot gas pipe 1
Sewer hookup 0
Water pipe 1
Gas repair 0

TOTAL FEES $35.00
Lot Service 1 Fee 14.00
Water repair 0 Fee 5.00
Riser 0 Fee 5.00
Processing Fee 16.00

MH Site Prep
550 Sq. Ft.

INSPECTOR'S

FORM 284-208 (1-87)

BUILDING APPROVALS

NO	OPERATION	DATE	INSPECTOR
1	Set Back		
2	Pigs & Fins		
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck		
7	Framing		
8	Vents		
9	Garage Fire Wall		
10	Fireplace P L ☐		
10A	Fireplace F O ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		

	INSULATION	Thick	"R" Value		
12A	Walls (Batts)				
12B	Ceiling (Batts)				
12C	Ceiling (Blown)				
14	**Final**				

PLUMBING APPROVALS

15	Ground Plumb		
16	Water Piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal	6-22-88	BECKWITH
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service	6-22-88	Bunny
24	Gas Test TO LPG TANK -	6-22-88	Bunny
25	**Final**	6-22-88	Bunny

ELECTRICAL APPROVALS

26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring		
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	**Final**		

MECHANICAL APPROVALS

NO	OPERATION	DATE	INSPECTOR
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Compart		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	**Final**		

OP'N NO

ADDITIONAL INFORMATION

6-22-88 - CONDUCTOR TO METER PANEL - METER HAS YET TO BE INSTALLED - Bunny
6-30-88 - NO JOB CARD Bunny OR PAPER WORK -
7-1-88 - SEE CORR Bunny.

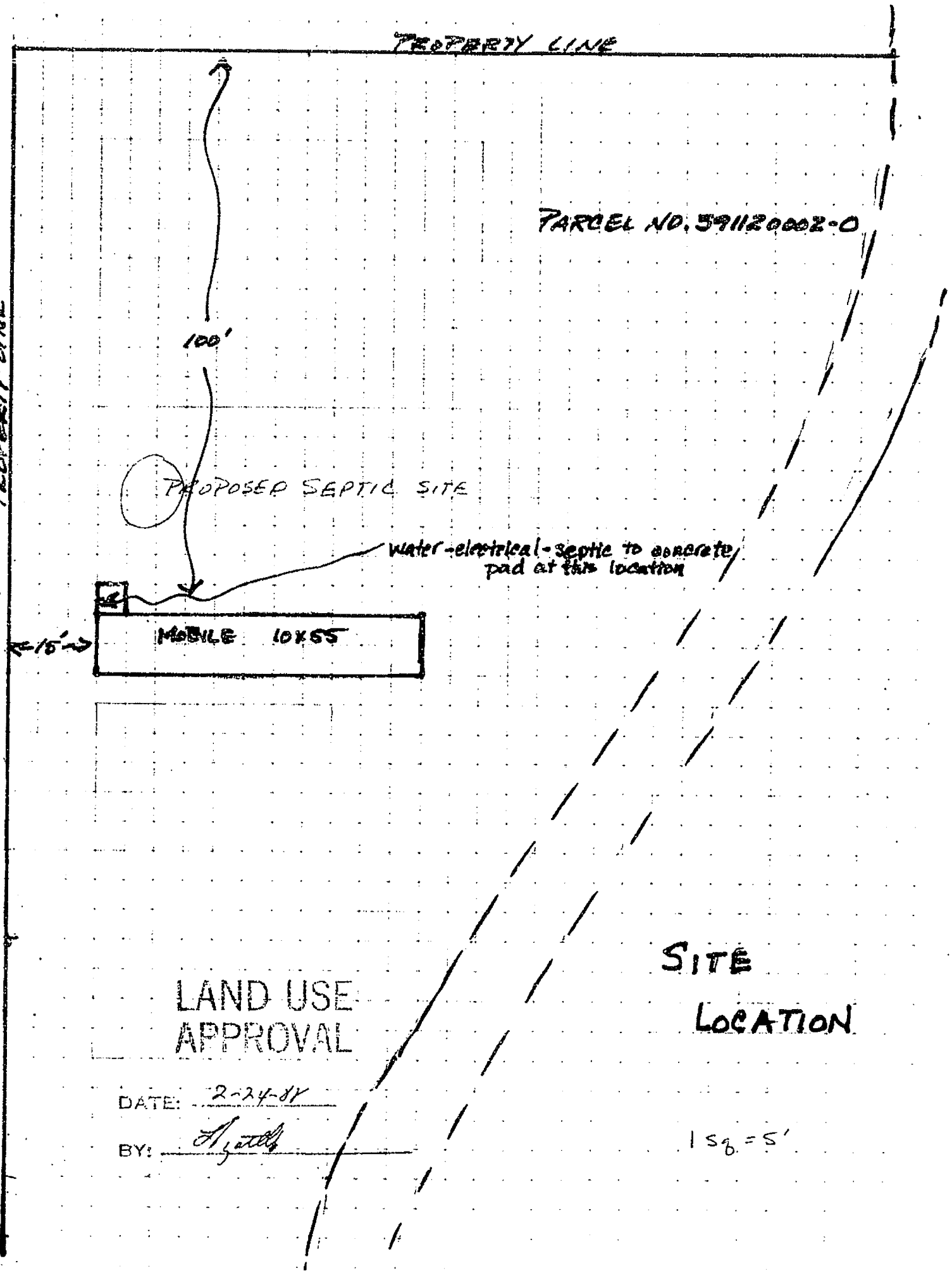
SEWAGE SYSTEM SIZE & LOCATION

Tank _____ Pit _____ L Line _____

REAR OF PROPERTY LINE

P/L P/L

STREET NAME _____


PROPERTY LINE
PARCEL NO. 591120002-0
PROPERTY LINE
100'
PROPOSED SEPTIC SITE
water-electrical-septic to concrete pad at this location
MOBILE 10x55
<-15'->
LAND USE APPROVAL
DATE: 2-24-84
BY:
SITE LOCATION
1 sq. = 5'

Scale 1" = 40'

COUNTY OF RIVERSIDE, ENVIRONMENTAL HEALTH SERVICES DIVISION
PERMIT APPLICATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

391 - 120 002

Applicant: Submit this form with 3 four copies of a scaled plot plan (1-20 scale) drawn to County specifications required on the attached check list. A non-refundable filing fee of $40 is required when the application is submitted. Check must be made payable to the County of Riverside.

Building Department Application Log # 183547

HEALTH DEPT RIVERSIDE CO 40.00 1238 40.00 TOTL 40.00 CHEK

SECTION A

Name (Owner, Agent, Contractor, Etc.)	Mailing Address		
BROOK HARRIS	14114 Temescal Canyon Rd		
City	State	Zip Code	Telephone
Corona	CA	91719	(714) 674-9247
*Job Property Address	*City or Community	*Legal Description of Property (Lot, PM, TR)	
14114 Temescal Canyon Rd		3 of 16 T5S R5W	
*Assessor's Parcel No	Water Agency or Well	Use of Permit	Planning Case # COC 2458
391-120-002	Well	SFD MH Site Preparation Etc	Lot Size 15.73 Ac

Brook Harris — Signature of Applicant

March 8, 1988 — Date

*The above information must be verified from Building Application

STAFF USE — DO NOT WRITE BELOW THIS LINE

SECTION B

Perc test required

			Initial	Date
Certification of Existing S.D. System required.	☐ Yes	☐ No		
WQCB Clearance required.	☐ Yes	☐ No		
Soils-feasibility report required.	☒ Yes	☐ No		2-24-88
Special feasibility boring report required.	☐ Yes	☐ No		
Detailed contour plot plans required.	☐ Yes	☐ No		
Staff Specialist approval required.	☐ Yes	☐ No		

Lot Inspection Date

Soils/boring report by AMPAC — Project # 88-2644 — Date 2/27/88

Soils Map Page 107 — Soil Type 105 — Approved by — Date 3/10/88

Type of System:	No. of Bedrooms	(1) Septic Tank	Soil Rate Required
☐ Existing ☑ New ☐ Additional ☐ Replacement	2 Mod M.H	750 Gals.	30 / 100

(2) Leach line sq. ft.	Sidewall allowance		Leach bed Sq. Ft. of bottom area
(Bottom trench area) 225 sq ft	____ ft. rock/____ Sq. Ft. per running ft. ☑ N/A	Install 1 Line(s) 25 Ft. Long, 3' Ft. wide with min. 12" inches rock below drain lines	N/A

Leach lines/bed-special design for slope:	(3) Pit Diameter	No. Pits	Pit Bl	Seepage Pit total depth
Applicable ____ N/A ✓ Overburden factor: ____	☐ 5' ☐ 6'			Max. allowable depth

REMARKS

SECTION C

This application is approved/~~denied~~ for the design of a subsurface disposal system as indicated on the accompanied plot plan using the requirements set forth in Section B above. A building permit is necessary for the installation of the above-designed system.

(1) Septic tank and sewer lines must be 50' from any wells
(2) Leach lines must be 100' min. from any wells including expansion area
(3) Seepage pits must be 150' min. from any wells including expansion area

Signature of Health Official

3/10/88 — Date

RECEIPT NO. 1545 — Issued by — Date

District: ☐ Riverside ☐ Indio ☐ Hemet ☐ Perris ☐ Rancho Calif. ☐ Blythe

Distribution: WHITE—Office file YELLOW—Applicant PINK—Bldg. Dept. GOLDENROD—Pending File

DOH SAN 122 (Rev 8/87)

EAST RD

PROJECT NO. 88-2694

American Pacific Soils Labs, Inc.

DATE 2/27/88

PERCOLATION TEST SITES
EXPLORATORY BORINGS

tank and sewer lines must be 50 ft.
any wells, including expansion areas.
leach lines must be 100 ft. minimum and
seepage pits must be 150 ft. minimum from
any wells.

COUNTY OF RIVERSIDE
DEPARTMENT OF HEALTH

11' x 20'

FOOD ESTABLISHMENT
TRAILER PARK
MOTEL, APT., HOTEL
SCHOOL (2 hotels #)
PUBLIC SOURCE
SEWAGE DISPOSAL
750 GAL SEPTIC TANK
225 SQ. FT. OF LEACH LINE
X SEEPAGE PIT
CONNECTION TO SEWER
SEWAGE FLOW LIMIT
SEWAGE LINE LAYOUT
SWIMMING POOL

Percolation and Soils Investigation and Plan(s) Checked Approved

3/10/88 By Jerma & Stallings

100'

1000

15'

10 X 55' MOBILE - 2 bed

NORTH RD

1

2

3

75' X 3'

75' X 3' EXPANSION AREA

4

5 Dist Across Road

APPLICANT

HARRIS RANCH
14114 TEMESCAL CNYN RD
PTN OF 391-120-002-0

JOBSITE

14114 TEMESCAL C.RD.

SYSTEM DESIGN

10 X 50 2 B.R. MOBILE
750 GAL SEPTIC TANK
225 SQ.FT. BOTTOM AREA
OF TRENCHES, MIN.
1 LINE, 75' X 36". MIN.
1 FT. ROCK BENEATH DRAIN LINES.

Log# 183547

LAND USE
APPROVAL

DATE: 3/10/88

BY: Eulogio

0002 APPLICATION

0002 PROJECT HOLDS

Date	Status	Department	Reason/Action
02/24/88	H	B & S	HEALTH CLEARANCE OK RPhillips 3/10/88 No ACTION taken on above hold
02/24/88	H	B & S	ROAD CLEARANCE OK John M. Byrd 3-10-88 gains access from private easement No ACTION taken on above hold
02/24/88	H	B & S	ELSINORE UHD & LAKE ELSINORE SD PRIOR INSTAL No ACTION taken on above hold
02/24/88	H	B & S	HOLD No ACTION taken on above hold

0002 NO CASE CONDITIONS

0002 SITUS COMMENTS

Date	Department	Comment/Action
02/24/88	B & S	HIGH FIRE AREA

0002 NO SITUS HOLDS

John Byrd

APPLICANT

RM 284-208 (1-87)

Department of Building and Safety
COUNTY OF RIVERSIDE

TO: Dist. RIV.

ADDRESS: 14114 TEMESCAL CANYON Date 7-5-85

CORRECTION NOTICE

Permit No.

(2) 200 AMP METER IS TO POWER MOBILE ONLY IF ANY WIRING IS TO BE ADDED A PERMIT WILL BE REQUIRED AND PROPER INSPECTIONS MADE

Inspector

DO NOT REMOVE FROM JOBSITE

284-205 (rev. 1/83) DISTRIBUTION: WHITE-Job, CANARY-Inspector, PINK-Office

Department of Building and Safety
COUNTY OF RIVERSIDE

TO: Dist.

ADDRESS: 14114 Tamarisk Date 6-16-98

CORRECTION NOTICE

Permit No. 418469

(1) Gas Line must be 3/4" Min to Mobile home.

(2) Main Service pole must be Installed on Service pedestal.

(3) Risers on Gasline must be vertical

(4) Install gas shut off Valve at Mobile home.

Inspector

DO NOT REMOVE FROM JOBSITE

284-205 (rev. 1/83) DISTRIBUTION: WHITE-Job, CANARY-Inspec

Department of Building and Safety

COUNTY OF RIVERSIDE

TO: Dist. R1

ADDRESS: 14114 TEMESCAL CANYON Date 6-30-81

CORRECTION NOTICE

Permit No.

(1) MUST HAVE JOB CARD AT JOB SITE

CALL FOR REINSPECTION -

Inspector

DO NOT REMOVE FROM JOBSITE

284-205 (rev. 1/83) DISTRIBUTION: WHITE-Job, CANARY-Inspector, PINK-Office

Department of Building and Safety
COUNTY OF RIVERSIDE

TO: Dist. R/I

ADDRESS: 14114 TEMESCAL Date 2-1-05

CORRECTION NOTICE

Permit No.

O STF PREP PERMIT OK

OK TO POWER GAS & ELEC TRENCHES

MUST HAVE PAPERWORK ON MOBILE

HOME SERIAL # MANUFACTURE

HOD #'S ECT.

NEED PAPERWORK TO FILL OUT

CERTIFICATE OF OCCUPANCY-

IF HAVE QUESTIONS PLEASE

CALL MORRIS - 8:00 - 8:30 AM.

Inspector

DO NOT REMOVE FROM JOBSITE

284-205 (rev. 1/83) DISTRIBUTION: WHITE-Job, CANARY-Inspector, PINK-Office

PERMIT APPLICATION

County of Riverside Department of Building and Safety

4080 Lemon St. 2nd Floor Riverside, CA 92501 Ph: 787-8146	135 N. Alessandro Rd, Ste 210 Banning, CA 92220 Ph: 849-7312	1370 S. State Street San Jacinto, Ca 92383 Ph: 654-7655	170 N. Williams Ave. Perris, Ca 92370 Ph: 657-3696	46-208 Oasis St. Ste 310 Indio, CA 92201 Ph: 342-8271	180 N Broadway Blythe, CA 92225 Ph: 922-2870	27403 Ynez Rd. # 102 Temecula CA 92390-2761 Ph: 676-7720

418700

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Date _____ Applicant _____

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Lender's Name _____

Lender's Address _____

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X Brook Harris
Signature of Applicant or Agent

3-17-88
Date

Print Applicant/Agent Name

APPLICANT NAME (LFAM): BROOK, HARRIS

ADDRESS: 14116 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

JOB SITE ADDRESS/SPACE: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

BOK	PAD	PRC	C	TWN	RNG	SE	S
391	120	002	0	005S	005W	14	0

TRACT	LOT	MSD	SB
002458-00	000	99999	

TRACT NAME: COC 2458

OWNER NAME (LFAM): HARRIS, MELODY BROOK PHONE #

CONTRACTOR-FIRM NAME: O/B LICNO # 0210068E

ADDRESS: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

PHONE # 714-674-9247 BLDG INSPECTOR FINAL DATE

ARC/ENGINEER NAME LICNO #

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # PLANS EXAMINER APPROVE DATE

USE OF PERMIT: MH INSTALL 550 SQ FT

BL	ZON	FSB	SSB	SSB	RSB		OEC
		600	015	600	010		R1U

ZONE ORD #		LOT SZ			END	SIDE
R-R						

14114 TEMESCAL CANYON

CORONA CA 91719

LOG #	PS	DATE	
00185963		03/17/88	418700

MOBILE HOME	$80.00
V26669	
TOTAL FEE :	$80.00

CA	CK	NC	COUNTER BY	COUNTER LOT
	X		LD	

418700

0002 MOBILE HOME

MOBILE HOMES TOTAL FEES $80.00

Make TOWN & COUNTRY Model SN55105404239

Install 1 Site prep 0 Fxd Fndtn Reg 0 Reinspectn 0 Fee 70.00

Processing Fee 10.00

FILE COPY

FORM 284-208 (1-87)

APPLICANT NAME (L,F,M): BROOK, HARRIS

ADDRESS: 14116 TEMESCAL CANYON

CITY, COMMUNITY/STATE/ZIP: CORONA CA 91719

JOB SITE ADDRESS/SPACE: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

BOOK	PAG	PRC	S		TWN	RNG	SE	S
391	120	002	0		005S	005W	16	0

TRACT	LOT		BLOCK	
002458-00	000	99999		

TRACT NAME: COC 2458

OWNER NAME (L,F,M): HARRIS, MELODY BROOK PHONE #:

CONTRACTOR-FIRM NAME: O/B LICNO.: 021006BE

ADDRESS: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

PHONE #: 714-674-9247 BLDG INSPECTOR: [signature] FINAL DATE: 6-22-88

ARC/ENG FIRM NAME: LICNO.:

ADDRESS:

CITY/COMMUNITY/STATE/ZIP:

PHONE # PLANS EXAMINER APPROVE DATE

USE OF PERMIT: MH INSTALL 550 SQ FT

BL	ZON	FSO	SSB	SSB	HSB		OFC
		600	015	600	010		R1U

ZONE ORD #		LOT SZ			END	SIDE
1						

JOB # 00185963 PB DATE 03/17/88 418700

MOBILE HOME	$80.00
V2669	
TOTAL FEE :	$80.00

CA	OK	INC	COUNTER BL	COUNTER LUT.

14114 Temescal Cyn.
Corona
0002 MOBILE HOME

418700

MOBILE HOMES
Make TOWN & COUNTRY Model SN55105404239 TOTAL FEES $80.00
Install 1 Site prep 0 Fxd Fndtn Req 0 Reinspectn 0 Fee 70.00
Processing Fee 10.00

MH Install 550 S.F.

INSPECTOR'S

FORM 284-208 (1-87)

NO.	OPERATION	DATE	INSPECTOR
	BUILDING APPROVALS		
1	Set Back		
2	Figs & Frms JACK STANDS	6-22-88	Bunch
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck		
7	Framing		
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L. ☐		
10A	Fireplace T.O. ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		

	INSULATION	Thick	"R" Value		
7A	Walls (Batts)				
12B	Ceiling (Batts)				
12C	Ceiling (Blown)				
14	**Final**			6-22-88	Bunch
	PLUMBING APPROVALS				
15	Ground Plumb				
16	Water Piping				
17	Rough Plumb				
18	Vents				
19	Sewage Disposal				
20	Sewer			6-22-88	Bunch
21	Water Heater				
22	Water Softener				
23	Water Service				
24	Gas Test			6-22-88	
25	**Final**			6-22-88	Bunch
	ELECTRICAL APPROVALS				
26	Power Pole				
27	Conduit				
28	Service Entrance				
29	Wiring				
29A	Grounding Wire				
29B	Bonding RING OUT OK			6-22-88	Bunch
30	Fixtures				
31	Service				
32	**Final**			6-22-88	Bunch

NO.	OPERATION	DATE	INSPECTOR
	MECHANICAL APPROVALS		
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Compart.		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	**Final**		

OPN NO.	**ADDITIONAL INFORMATION**
	6-22-88 · MOBILE HOME PASSED HOLD C OF O. UNTIL METER PANEL IS INSTALLED & INSPECTED. Bunch

SEWAGE SYSTEM SIZE & LOCATION

Tank Pit L.Line

REAR OF PROPERTY LINE

P/L P/L

STREET NAME

Job Address 14114 Tesnescal Canyon Rd.					
Use of Permit M/H Install (550 ☒)					
Land Use Plan Check Approval			Date 3-16-88 Init SPaul		
Log #			Plan Check #		
CLEARANCES	DATE	INIT	CLEARANCES	DATE	INIT
Health			School #1 LCSD	3/17/88	EW
Road			School #2 VHSD	3/17/88	EW
Planning			Fire		
Land Use Building Permit Approval Date 3/17/88				Init EW.	
Grading Permit #			Building Permit #		

(I)

HIGH FIRE AREA
ORD. 584

ELSINORE UNION HIGH SCHOOL DISTRICT

1201 West Graham Avenue • Lake Elsinore, California 92330 • 714 674-8771

№ 5503

APPLICATION FOR AND CERTIFICATION OF PAYMENT OF SCHOOL FACILITY FEE

APPLICATION

LEGAL DESCRIPTION: APN NO.: 391-120-002-0

TRACT: 2458 LOT(S): 0

ADDRESS: 14114 Tomescal Canyon, Corona, Ca 91719

PLAN CHECK/INSTALLATION PERMIT NO.: 418656

APPLICANT: Melody Harris PHONE NO. (674-9247

ADDRESS: 14116 Tomescal Canyon, Corona, Ca 91719

(X) OWNER ( ) AUTHORIZED AGENT

TYPE OF DEVELOPMENT:
- ( ) RESIDENTIAL
- ( ) SINGLE FAMILY
- ( ) MULTI-FAMILY
- ( ) GARAGE EXEMPT
- ( ) OTHER
- (X) MOBILEHOME
- ( ) COMMERCIAL
- ( ) INDUSTRIAL
- ( ) ADDITIONAL SQ. FT.

SQ. FT. 550

(IF FINAL BUILDING PERMIT IS OVER 20 SQUARE FEET MORE OR LESS THAN THIS NUMBER, APPLICANT MUST ADJUST FEE PAID ACCORDINGLY.)

WE CERTIFY THAT THE ABOVE INFORMATION IS TRUE.

DATE 3/16/88 APPLICANT [signature]

TITLE owner

CERTIFICATION

TO: ( ) CITY OF LAKE ELSINORE (X) COUNTY OF RIVERSIDE

THIS CERTIFIES THAT SCHOOL FACILITY FEES IMPOSED PURSUANT TO:

(X) CALIFORNIA GOVERNMENT CODE, SECTION 53080
( ) CALIFORNIA GOVERNMENT CODE, SECTION 65970
( ) PRE-1987 LEGAL AUTHORITY - DATED

IN THE TOTAL AMOUNT OF .75 X SQUARE FEET, OR $412.50 (TOTAL AMOUNT OF FEE), HAVE BEEN PAID TO THE DISTRICT FOR THE ABOVE-LISTED PROPERTIES AND THAT BUILDING PERMITS FOR THIS SQUARE FOOTAGE IN THIS PROPOSED DEVELOPMENT MAY NOW BE ISSUED BY YOUR JURISDICTION.

CHECK NO.: 2667

[signature]
AUTHORIZED REPRESENTATIVE

[signature]
BY

REVISED
EUHSD/11-87

LAKE ELSINORE SCHOOL DISTRICT
545 Chaney Street, Lake Elsinore, Ca. 92330
(714) 674-7731

CERTIFICATION OF FEE PAYMENT

County of Riverside (✓) City of Lake Elsinore ( ) Date 3/16/88 No. 0909

Project Owner Name Melody Harris

Address 14116 Temescal Gyn. Corona Ca 91719

Telephone Number 674-9247 Building Permit # 418656

Project Address 14116 Temescal Gyn.
Corona, Ca

Tract # 2458 Lot # _____ Square Footage 550

Type of Development:	Residential	Commercial/Industrial
	( ) Single Family	( ) Commercial
	( ) Multi-Family	( ) Industrial
	(X) Mobile Home	( ) Addition
	( ) Addition	

* If final building permit is over 20 square feet more or less than this number, applicant must adjust fee paid accordingly.

Fees paid by Lane Telephone # _____
(If other than owner)

This certifies that school facility fees imposed pursuant to (✓) Resolution 1986-87-14, ( ) Mitigation Agreement in the amount of (✓) $.75 ( ) $.125 x 550 square feet or $ 412.50 (total amount of fees), have been paid to the District for the property listed above, and that building permits for this square footage in this proposed project may now be issued by your jurisdiction.

LAKE ELSINORE SCHOOL DISTRICT

By Medrel S. McCarty
Superintendent

Collected By L. Lovern

Date 3/16/88

Collector: Attach a copy of County or City Plan Check Application Form to District Copy.

Distribution of Copies: White to District; Pink and Yellow to Payee.

MOBILEHOME INSTALLATION ACCEPTANCE

I.D. NO. _____

PERMIT NO. 41700

ADDRESS OR LOCATION OF MOBILEHOME: 14114 TRISTAL CANYON

Owner's name: BROOK HARRIS

Owner's address: SAME

INSIGNIA OR HUD NUMBER: AAO - 9369

MANUFACTURER'S NAME: MOBILE - TOWN & COUNTRY

SERIAL NUMBER OR V.I.N SN 55105464535 YEAR OF MANUFACTURE. 1979

Ramirez (Official Approving Installation) 7.5.83 (Date) 787.6146 (Phone)

IF THE MOBILEHOME IS MOVED OR RELOCATED, THE MOBILEHOME INSTALLATION ACCEPTANCE SHALL BECOME INVALID. THIS FORM SHALL NOT BE USED WHEN THE MOBILEHOME IS INSTALLED ON A FOUNDATION SYSTEM.

284-130 (Rev. 3/82)

DISTRIBUTION: WHITE-Owner, CANARY-Permittee, PINK-Office Files

PERMIT APPLICATION

County of Riverside Department of Building and Safety

4080 Lemon St. 2nd Floor, Riverside, CA 92501, Ph: 787-8148 | 135 N. Alessandro Rd Ste. 103, Beaumont, CA 92220, Ph: 849-7317 | 1370 S. State Street, San Jacinto, CA 92583, Ph: 654-7855 | 170 N. Williamson Ave., Perris, Ca 92570, Ph: 657-3864 | 46 200 Oasis St Ste 310, Indio, CA 92201, Ph: 342-8271 | 150 N. Broadway, Blythe CA 92225, Ph: 922-7670 | 37403 Hwy 79 #102, Temecula CA 92592-2581, Ph: 676-7750

418703

This permit becomes void if work not commenced within 180 days from date of issuance, OR, if work has been suspended or abandoned for a period of 180 days

☐ LICENSED CONTRACTORS DECLARATION: I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

Date _____ Licensee _____

☐ OWNER-BUILDER DECLARATION: I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500).):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.)

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.)

☐ I am exempt under Sec. _____, B & P C (Attach Certificate)

Date _____ Owner _____

WORKERS' COMPENSATION DECLARATION: I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation insurance, or a certified copy thereof (Sec. 3800, Lab C.)

☐ Certified copy is hereby furnished.

☐ Certified copy is filed with the County Building Inspection Department or County _____ Department.

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE: This section need not be completed if the permit is for one hundred ($100) or less. I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Date _____ Applicant _____

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

DIVISION OF INDUSTRIAL SAFETY PERMIT CERTIFICATION

☐ I hereby certify that no excavation five (5) or more feet in depth into which a person is required to descend will be made in connection with work authorized by this permit, and that no building structure, scaffolding, falsework, or demolition or dismantling thereof, will be more than thirty-six (36) feet high (Chap. 3.2, Grp 2, Art 2, Section 341, Title 8, C.A.C.)

☐ As owner-builder, I will not employ anyone to do work which would require a permit from the Division of Industrial Safety, as noted above, unless such person has a permit to do such work from the division.

☐ Division of Industrial Safety Permit No. _____

CONSTRUCTION LENDING AGENCY: I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.)

Lender's Name _____

Lender's Address _____

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION OF ENTRY: I certify that I have read the application and state that the information given is correct. I agree to comply with all state laws and county ordinances relating to building construction, and authorize a representative of the County of Riverside, Department of Building and Safety to enter upon the property for which I have applied for this permit for the purpose of making inspections.

X M. Brook Harris 3-17-88

Signature of Applicant or Agent — Date

Print Applicant/Agent Name

APPLICANT NAME (L,F,M): HARRIS, MELODY BROOK

ADDRESS: 14116 TEMESCAL CANYON ROAD

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

JOB SITE ADDRESS/SPACE: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

BOK	PAG	PRC	C		TWN	RNG	SE	S
391	120	002	0		005S	005W	16	0

TRACT	LOT	MOD	SB
002458-00	000	99999	

TRACT NAME: COC 2458

OWNER NAME (L,F,M): HARRIS, MELODY BROOK — PHONE #

CONTRACTOR-FIRM NAME: O/B — LIC-C: 0210068E

ADDRESS: 14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP: CORONA CA 91719

PHONE: 714-674-9247 — BLDG INSPECTOR — FINAL DATE

ARC/ENG FIRM NAME — LICNC #

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE # — PLANS EXAMINER — APPROVE DATE

USE OF PERMIT: AGRIC BARN 41X74

BL	ZON	FSD	SSB	SSD	RSB		OCC
		600	015	600	010		RIV

ZONE OVID #		LOT SZ			END	SIDE
R-R						

LOG # 00186038 — PS — DATE 03/17/88 — 418703

BUILDING	REVIEW	$182.25
BUILDING		$243.00
S.M.I.P TAX		$1.68

√21669
16-21

TOTAL FEE: $426.93

CA	CK	NC	COUNTER BY	COUNTER LOT
	X		KD/BT	

14114 TEMESCAL CANYON

CORONA CA 91719

418703

0002 B U I L D I N G

BUILDING — TOTAL FEES $182.25

Valuation: Curr 23756 — Plan Review Fee 182.25

# of Floors 1 # of Bedrooms # of Rooms

PRIMARY STRUCTURE:

Desc: AGRIC Group: M-1 Type: V-N

Sq-Ft 3034 Occupancy Load 0 Rate 7.83 Valuation 23756

SECONDARY STRUCTURES:

BUILDING — TOTAL FEES $243.00

# of Floors 1 # of Bedrooms FCC CD: 328 # of Rooms FCC CD: 328

PRIMARY STRUCTURE:

Desc: AGRIC Group: M-1 Type: V-N

Sq-Ft 3034 Occupancy Load 0 Rate 7.83 Valuation 23756

Building Fee 243.00

APPLICANT NAME (L,F,MI)
HARRIS, MELODY BROOK

ADDRESS
14116 TEMESCAL CANYON ROAD

CITY/COMMUNITY/STATE/ZIP
CORONA CA 91719

JOB SITE ADDRESS/SPACE
14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP
CORONA CA 91719

BOK	PAG	PRC	C	TWN	RNG	SE	S
391	120	002	0	005S	005W	16	

TRACT	LOT	MOD	BB
002458-00	000	99999	

TRACT NAME
COC 2458

OWNER NAME (L,F,MI)
HARRIS, MELODY BROOK

PHONE #

CONTRACTOR FIRM NAME
O/B

LIC/NC #
0210068E

ADDRESS
14114 TEMESCAL CANYON

CITY/COMMUNITY/STATE/ZIP
CORONA CA 91719

PHONE #	BLDG INSPECTOR	FINAL DATE
714-674-9247	Beckwith	5/23/88

ARC/ENG FIRM NAME

LIC/NC #

ADDRESS

CITY/COMMUNITY/STATE/ZIP

PHONE #	PLANS EXAMINER	APPROVE DATE

USE OF PERMIT
AGRIC BARN 41X74

BL	ZONE	FSB	SSB	SSB	RSB		OFC
		600	015	600	010		RIV

ZONE CHG #	LOT SZ			END	SIDE

LOC #
00186038

PB

DATE
03/17/88

418703

BUILDING REVIEW	$182.25
BUILDING	$243.00
S.M.I.P TAX	$1.68

√2669
16-21

TOTAL FEE $426.93

CA	CK	MC	COUNTER B.L.	COUNTER L.U.

14114 Temesal Cyn.
Corona

418703

0002 BUILDING

BUILDING
Valuation: Curr 23756

TOTAL FEES $182.25
Plan Review Fee 182.25

# of Floors 1 # of Bedrooms # of Rooms
PRIMARY STRUCTURE:
Desc: AGRIC Group: M-1 Type: V-N
Sq-Ft 3034 Occupancy Load 0 Rate 7.83 Valuation 23756
SECONDARY STRUCTURES:

BUILDING FCC CD: 328 TOTAL FEES $243.00
# of Floors 1 # of Bedrooms # of Rooms
PRIMARY STRUCTURE: FCC CD: 328
Desc: AGRIC Group: M-1 Type: V-N
Sq-Ft 3034 Occupancy Load 0 Rate 7.83 Valuation 23756
Building Fee 243.00

Agric Barn 41 x 74

F/C
66

INSPECTOR'S

FORM 284-208 (1-87)

NO.	OPERATION	DATE	INSPECTOR
	BUILDING APPROVALS		
1	Set Back		
2	Figs & Frms	4/19/88	Beckwith
2A	Slab Grade		
3	Steel		
4	Grout Blocks		
5	Bond Beams		
6	Roof Deck		
7	Framing	5/23/88	Beckwith
8	Vents		
9	Garage Fire Wall		
10	Fireplace P.L. ☐		
10A	Fireplace T.O. ☐		
11	Exterior Lath		
12	Internal Lath		
12A	Drywall		
13	Finish Grade		

	INSULATION	Thick	"R" Value		
7A	Walls (Batts)				
12B	Ceiling (Batts)				
12C	Ceiling (Blown)				
14	**Final**			5/23/88	Beckwith

	PLUMBING APPROVALS		
15	Ground Plumb		
16	Water Piping		
17	Rough Plumb		
18	Vents		
19	Sewage Disposal		
20	Sewer		
21	Water Heater		
22	Water Softener		
23	Water Service		
24	Gas Test		
25	**Final**		

	ELECTRICAL APPROVALS		
26	Power Pole		
27	Conduit		
28	Service Entrance		
29	Wiring		
29A	Grounding Wire		
29B	Bonding		
30	Fixtures		
31	Service		
32	**Final**		

NO.	OPERATION	DATE	INSPECTOR
	MECHANICAL APPROVALS		
33	Ventilation System		
34	Plenums & Ducts		
35	Furnace Compart.		
36	Inlets & Outlets		
37	Combustion Air		
38	Compressor		
39	Appl. Clearance		
40	Fire Damper		
41	Smoke Detection Device		
42	Commercial Hood		
43	**Final**		

OP'N NO.	**ADDITIONAL INFORMATION**

SEWAGE SYSTEM SIZE & LOCATION

Tank Pit L.Line

REAR OF PROPERTY LINE

P/L P/L

STREET NAME

150'

15'

65' PARKING

15

600'

TRACTOR

HAY

SHED

74 x 41 Ag Barn proposed

60'

Existing mobile

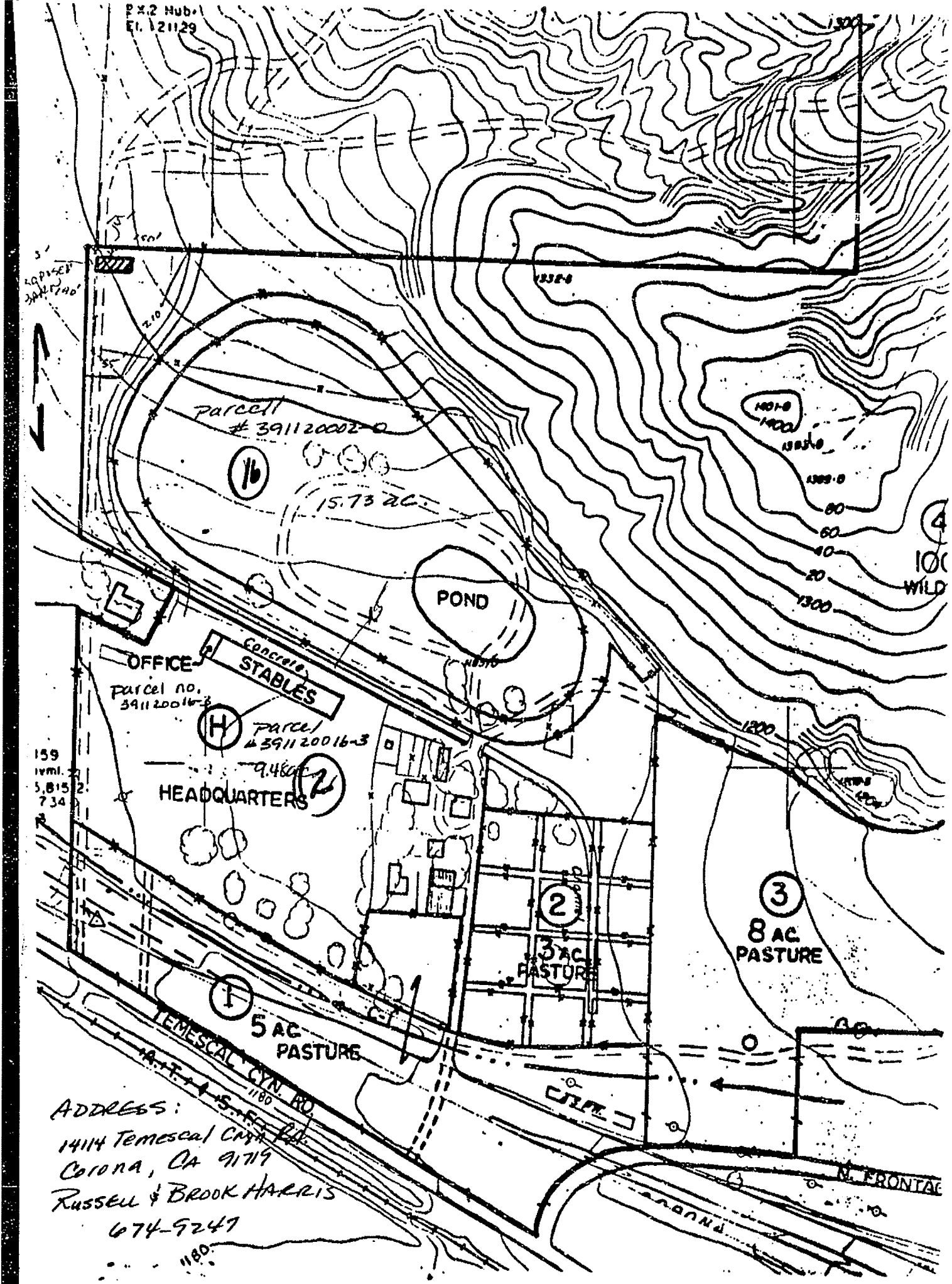
LAND USE APPROVAL

DATE: 3/17/88

BY: E Vigil

600'

SITE LOCATION


Parcel # 391120002-0
16
15.73 AC.
POND
OFFICE
Concrete
STABLES
Parcel no. 391120016-8
H
Parcel # 391120016-3
9.48 AC.
HEADQUARTERS
2
3 AC. PASTURE
3
8 AC. PASTURE
1
5 AC. PASTURE
TEMESCAL CYN. RD.
ADDRESS:
14114 Temescal Canyon Rd.
Corona, CA 91719
Russell & Brook Harris
674-9247

Appendix E

Site Parcel Information & Percolation Investigation Report

RUBICON
Engineering Corporation

Proposed Alberhill Substation Parcels

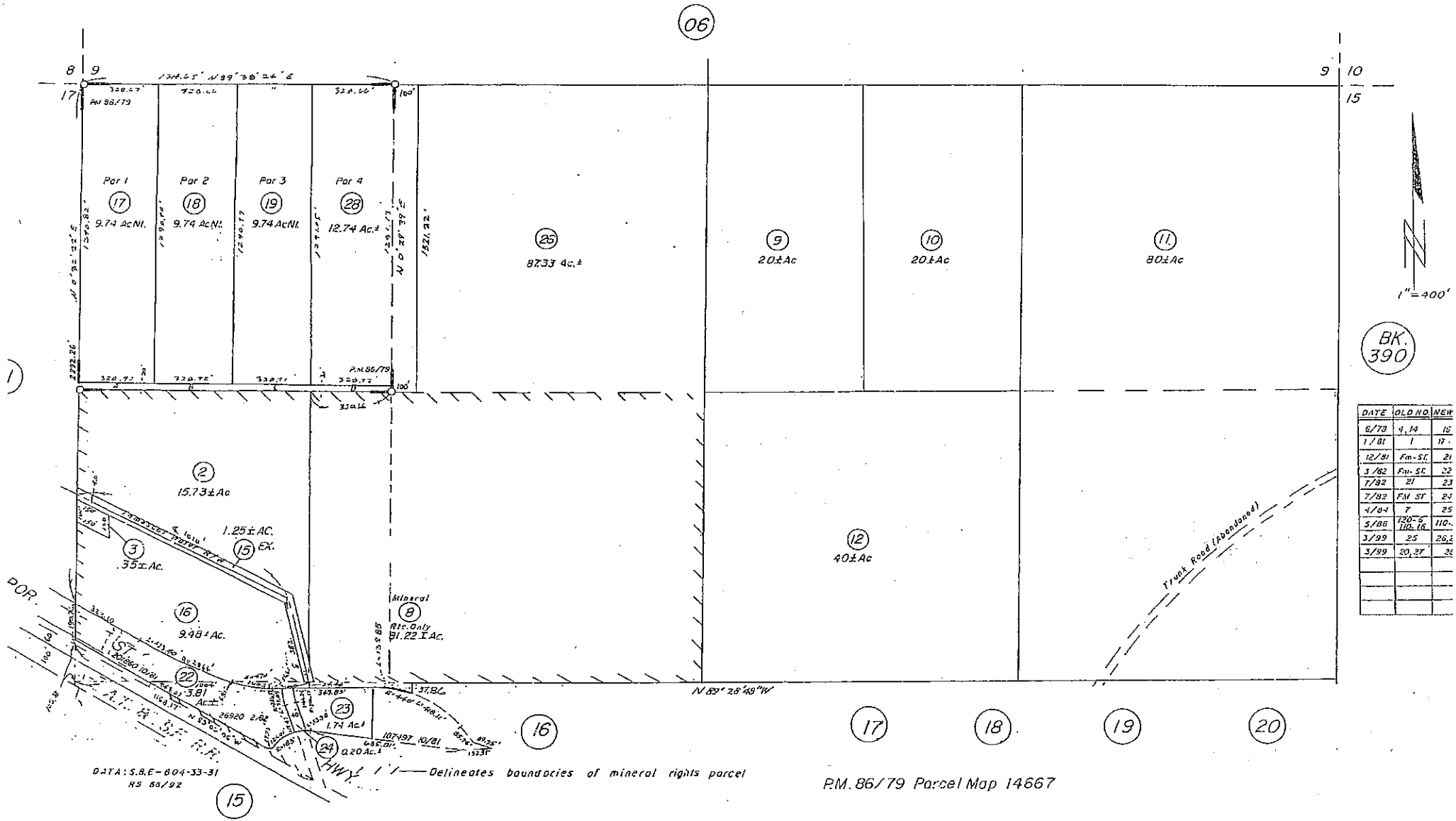
Parcel Info				
Assessor Parcel No.	Property Owner	Contact Person	Site Location	R/W Required (Acres)
Proposed Substation Site				
391-120-002, 016, 022, 024 & 026	Keeler Trust c/o Infinite Realty, attn: Mauricio Gomez 28602 Midsummer Ln. Menifee, CA 92584	Dan Powers,CBRE Broker o (714) 939-2138 c (714) 325-6486 dan.powers@cbre.com	14116 Temescal Canyon Rd., Lake Elsinore, CA 92530	116.55
391-120-023 & 391-160-021	William & Elaine Smith c/o Wm. E. Doud & Co. attn: Ernie George 350 E. 17th St. #111-B Costa Mesa, CA 92627 (949) 675-3700 erniegeorge@sbcglobal.net	Dan Powers,CBRE Broker o (714) 939-2138 c (714) 325-6486 dan.powers@cbre.com	Concordia Ranch Rd. Lake Elsinore, CA 92530	3.33
391-160-022	Eleanor Shattuck Trust c/o Matthew Rae, Esq. 600 John St. Manhatten Beach, CA 90266	Dan Powers,CBRE Broker o (714) 939-2138 c (714) 325-6486 dan.powers@cbre.com	Concordia Ranch Rd. Lake Elsinore, CA 92530	2.73
391-120-003	Tom & Bridget Boyle 14016 Temescal Canyon Rd. Corona, CA 92883 (951) 454-3976	Tom Boyle	14016 Temescal Canyon Rd., Corona, CA 92883	0.35
391-120-015	Elsinore Valley Municipal Water District (EVMWD) c/o Greg Kowalski, Sr. Engineer 31315 Chaney St. Lake Elsinore, CA 92531	Greg Kowalski, Sr. Engineer o (951) 674-3146 x8349	Temescal Canyon Rd. & Concordia Ranch Rd. Lake Elsinore, CA 92530	1.27

18-4

391-12

T.R.A. 6530

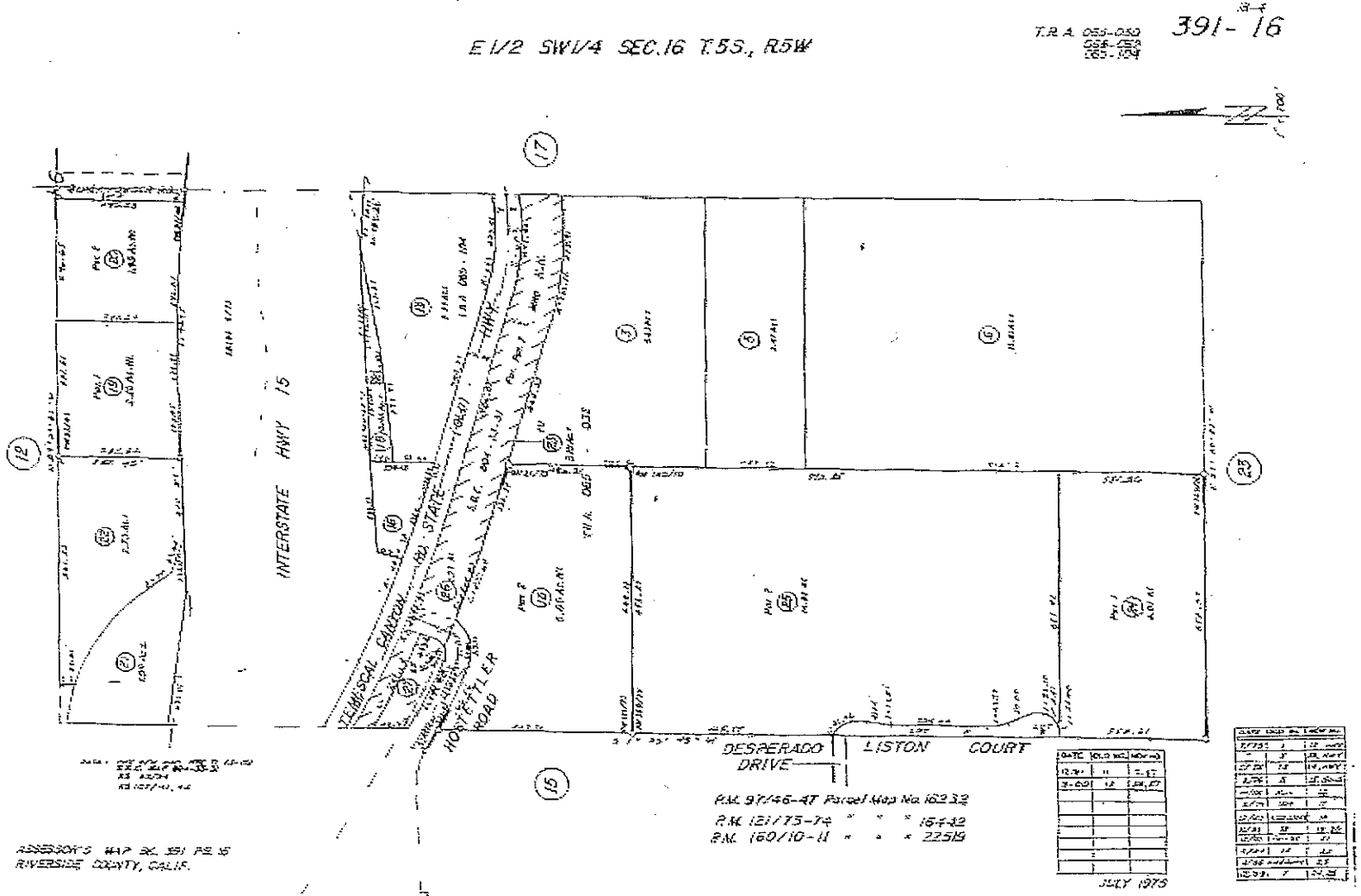
N 1/2 SEC. 16, T5S, R5W

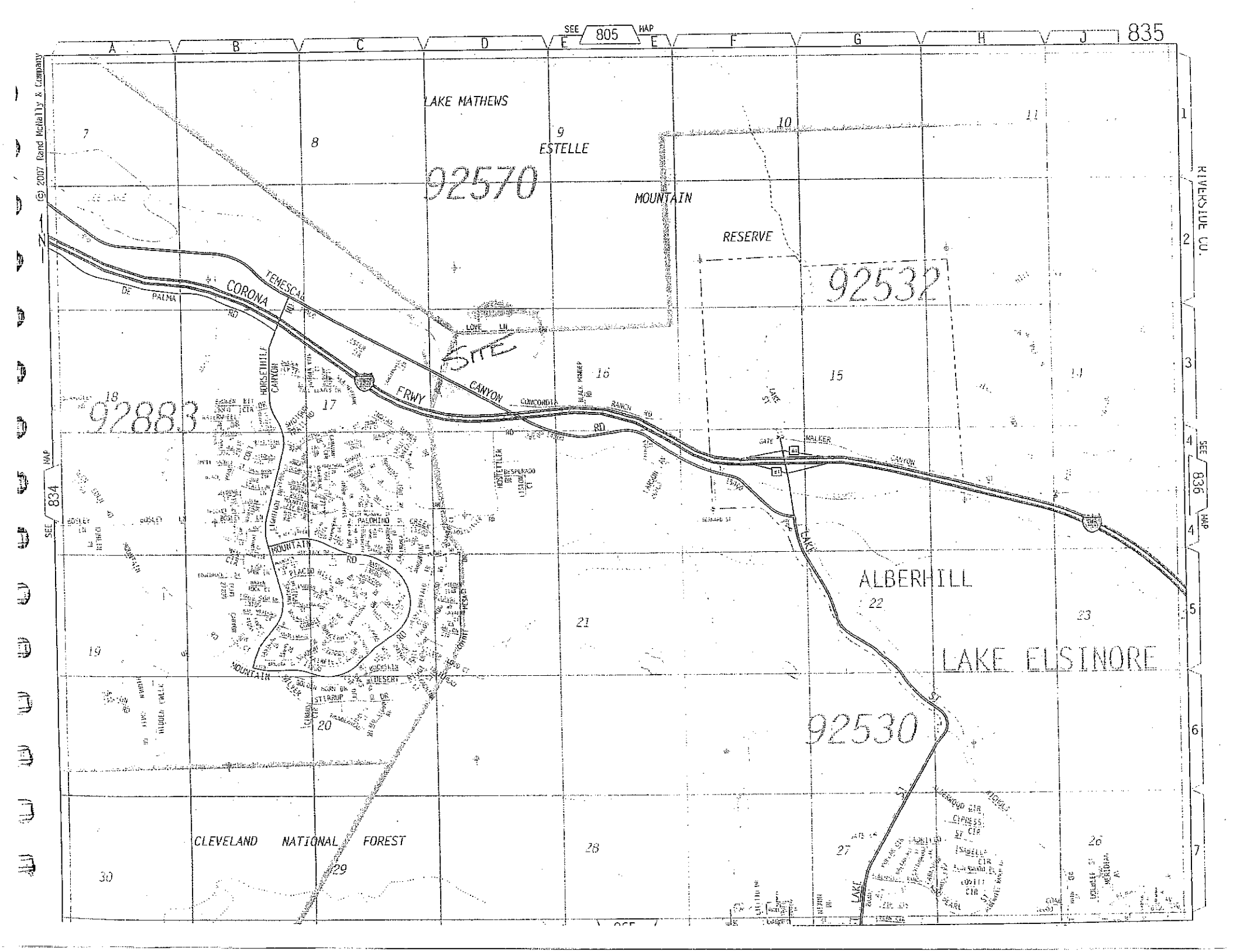


DATE	OLD NO	NEW
6/79	4,14	16
1/81	1	17
12/81	Fm-5[illegible]	21
5/82	Fm-5[illegible]	22
7/82	21	23
7/82	FM ST	24
4/84	7	25
5/86	120-6 110-16	110-
3/99	25	26,[illegible]
3/99	20,27	3[illegible]

ASSESSOR'S MAP BK 391 PG 12
RIVERSIDE COUNTY, CALIF.

APR 05 1999


E 1/2 SW1/4 SEC. 16 T.5S., R5W
T.R.A. 055-050
391-16
INTERSTATE HWY 15
TEMESCAL CANYON RD
STATE HWY
HOOVER ROAD
DESPERADO DRIVE
LISTON COURT
P.M. 97/46-47 Parcel Map No. 16232
P.M. 121/75-79 " " " 16442
P.M. 160/10-11 " " " 22519
ASSESSOR'S MAP BK. 391 PG. 16
RIVERSIDE COUNTY, CALIF.
JULY 1975


SEE 805 MAP
835
A
B
C
D
E
F
G
H
J
© 2007 Rand McNally & Company
LAKE MATHEWS
ESTELLE
MOUNTAIN
RESERVE
92570
92532
92883
92530
CORONA
TENESCAL
DE PALMA RD
FRWY
CANYON
LOVE LN
SITE
HORSETHIEF CANYON
CONCORDIA
BLACK HORSE
RANCH RD
WALKER CANYON
GATE
LAKE ST
HOSTETTLER
PALOMINO
MOUNTAIN RD
ALBERHILL
LAKE ELSINORE
CLEVELAND NATIONAL FOREST
SEE 834 MAP
SEE 836 MAP
RIVERSIDE CO.
1
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500kV Route Corridors
Aerial Overview

March 4, 2009

SERRANO-VALLEY

390-100-002

390-110-003

390-250-004

391-060-006

390-100-016

390-100-010

391-120-009

391-120-010

391-120-011

391-120-026

391-120-012

391-120-002

391-120-016

391-120-022

391-120-015

391-120-023

391-160-021

391-160-022

391-160-019

391-160-020

391-170-019

391-180-028

391-180-027

391-170-016

391-190-015

391-200-016

390-110-007

390-110-006

390-250-003

390-120-010

390-120-015

390-120-012

390-120-016

SITE

Water Tank

Wash

VALLEY-ELSINORE-IVYGLEN

Walker

Ceram c Factory

Ownership List

Potential Site (County of Riverside TLMA GIS, 4/2008)

Study Area Corridors 500 Ft.

Conceptual Tower Locations (SCE, 11/24/08)

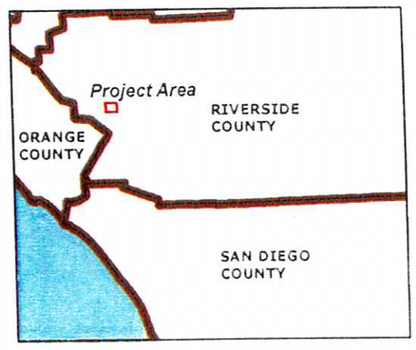
Conceptual Routes (SCE, 11/24/2008)

Air Photo:USDA-FSA, 2006.

DRAFT

N
W E
S

0 Feet 1,000



Features depicted herein are planning level accuracy and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.
© Corporate Real Estate Department, RED – Survey and Mapping

CONFIDENTIAL - Contains Critical Energy Infrastructure Information
Contact Corporate Security (27910) for handling/storage requirements, if any questions

EDISON

500kV Route Corridors
Aerial Overview

May 14, 2009

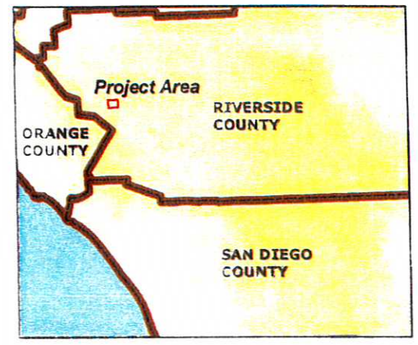
- Received TEP
- Parcels
- Existing 500 kV (SCE, 2006)
- Existing 115-161 kV (SCE, 2008)
- Roadways (TBM, 2008)

Air Photo:USDA-FSA, 2006.

DRAFT

N
W E
S

Feet
0 1,000



Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale. Always consult with the proper legal documents or agencies regarding such features.
© Corporate Real Estate Department, RED - Survey and Mapping

CONFIDENTIAL - Contains Critical Energy Infrastructure Information
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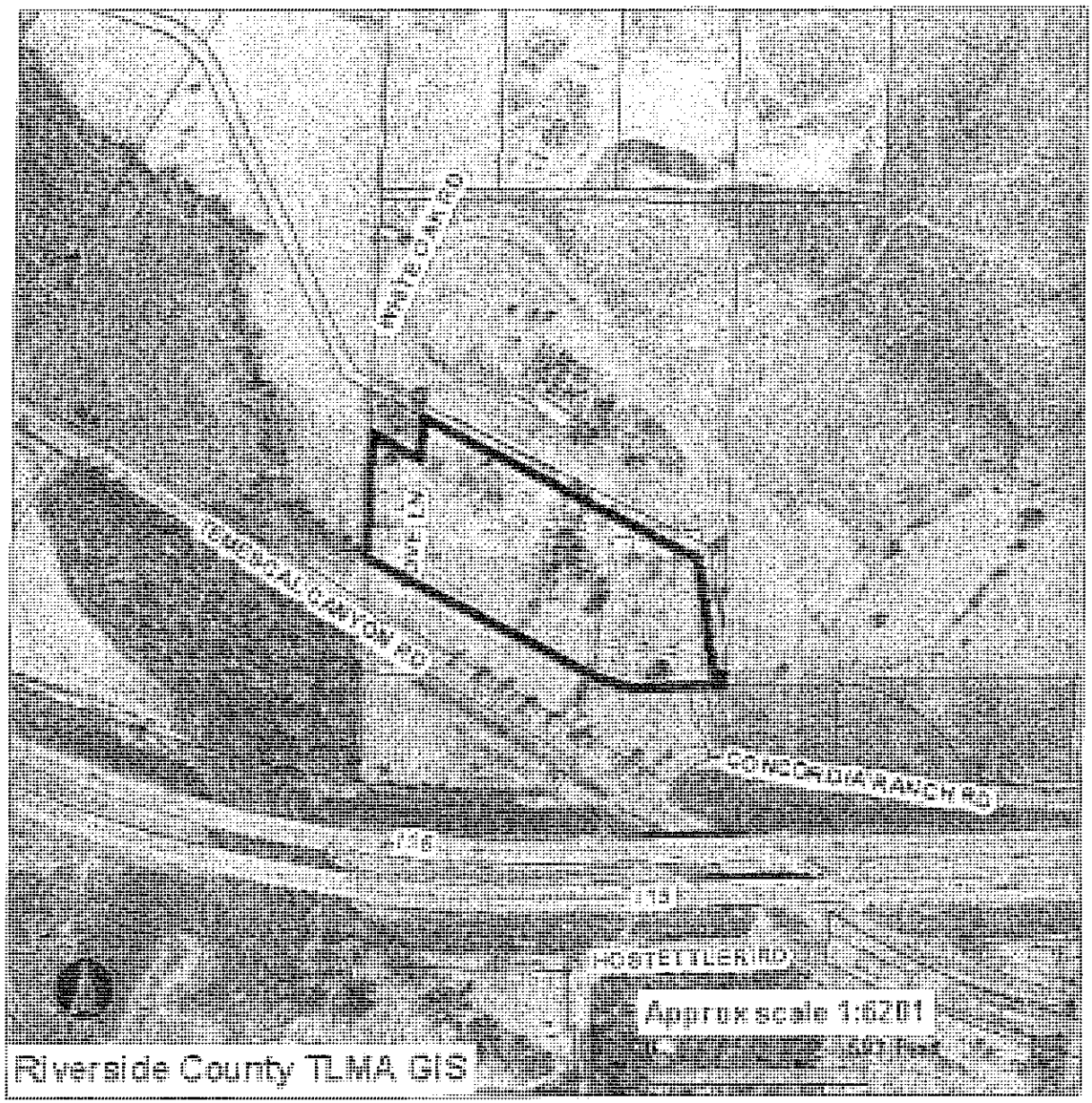
EDISON

RIVERSIDE COUNTY GIS



Selected parcel(s):
391-120-016

LEGEND

☐ SELECTED PARCEL ☐ PARCELS ☐ CITY BOUNDARY

IMPORTANT
This information is made available through the Riverside County Geographic Information System. The information is for reference purposes only. It is intended to be used as base level information only and is not intended to replace any recorded documents or other public records. Contact appropriate County Department or Agency if necessary. Reference to recorded documents and public records may be necessary and is advisable.

FULL REPORT
APN(s): 391-120-016-3

OWNER NAME / ADDRESS: - 391-120-016
ANGELA CORNELIO
14116 HIGHWAY 71
PERRIS, CA. 92570

RIVERSIDE COUNTY GIS

Selected parcel(s):
391-120-016

LEGEND

SELECTED PARCEL PARCELS CITY BOUNDARY

IMPORTANT
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REPORT PRINTED ON...Wed Feb 18 11:18:02 2009

MAIL TO NAME/ADDRESS:	- 391-120-016 - (SEE OWNER) - 14116 TEMESCAL CANYON RD - CORONA CA. 92883
APN CAME FROM:	- 391-120-016 - CAME FROM: 391-120-004
LOT SIZE:	- 391-120-016 - RECORDED LOT SIZE IS: 9.48 ACRES
PROPERTY CHARACTERISTICS:	- 1. 391-120-016 - NO PROPERTY DESCRIPTION AVAILABLE - 2. 391-120-016 - WOOD FRAME, 2174 SQFT., 3 BDRM/ 2.25 BATH, 1 STORY, CONST'D 1973, SHAKE ROO CENTRAL HEATING, CENTRAL COOLING,
ELEVATION (APPROXIMATE):	- 1180/1188 FEET
LEGAL DESCRIPTION:	- APN: 391120016 - RECORDED BOOK/PAGE: NOT AVAILABLENOT AVAILABLE - SUBDIVISION NAME: NOT AVAILABLE - LOT/PARCEL: NOT AVAILABLE - TRACT NUMBER: NOT AVAILABLE - APN: 391120016 - RECORDED BOOK/PAGE: NOT AVAILABLE - SUBDIVISION NAME: NOT AVAILABLE - LOT/PARCEL: NOT AVAILABLE - TRACT NUMBER: NOT AVAILABLE
BASE YEAR ASSESSMENT:	- 391-120-016 - BASE YEAR: 1998
TOWNSHIP/RANGE:	- T5SR5W SEC 16
CEMETERY DISTRICTS:	- ELSINORE CEMETERY DISTRICT
CITY BOUNDARY/SPHERE:	- CITY: NOT WITHIN A CITY - CITY SPHERE: LAKE ELSINORE - ANNEXATION DATE: NO DATE AVAILABLE - LAFCO CASE #: NO CASE # AVAILABLE - PROPOSALS: NONE
COMMUNITY:	- IN OR PARTIALLY WITHIN HORSETHIEF CANYON. SEE MAP FOR MORE INFORMATION
2001 SUPERVISORIAL DISTRICT:	- BOB BUSTER, DISTRICT 1 as established by County Ordinance 813, August 14, 2001
AREA PLAN:	- ELSINORE
COACHELLA VALLEY MULTI-SPECIES HABITAT CONSERVATION PLAN FEE AREA:	- NOT WITHIN THE COACHELLA VALLEY MSHCP FEE AREA
COACHELLA VALLEY MULTI-SPECIES HABITAT CONSERVATION PLAN - CONSERVATION AREA:	- NOT IN A CONSERVATION AREA
WESTERN RIVERSIDE MULTI-SPECIES HABITAT CONSERVATION PLAN FEE AREA:	- IN OR PARTIALLY WITHIN THE WESTERN RIVERSIDE MSHCP FEE AREA. SEE MAP FOR MORE INFORMATION.
WESTERN RIVERSIDE COUNTY MSHCP AREA PLAN:	- ELSINORE

WESTERN RIVERSIDE COUNTY MSHCP CELL GROUP:	- H
WESTERN RIVERSIDE COUNTY MSHCP CELL NUMBER:	- 3649 - 3749

IMPORTANT NOTICE: On October 7, 2003, the County of Riverside adopted a new General Plan. The General Plan provides new land use designation all parcels in the unincorporated area of Riverside County. For any parcel, the General Plan may provide for a different type of land use than is provided under existing zoning. During the next one to two years, the County will undertake a program to review all the zoning in the unincorporated area, and wh necessary, change the zoning, following advertised public hearings, to conform to the County's new General Plan. Until then, please be advised that ther may be a difference between the zoning and General Plan designations on any parcel. This may result in, at a minimum, the need to change the zoning before desired development may proceed. For further information, please contact the Riverside County Planning Department offices in Riverside at (951 3200, in Murrieta at (951) 600-6170, or in Indio at (760) 863-8277.

LANDUSE DESIGNATION:	Click here for landuse descriptions. - LI • CHECK MAP TO CONFIRM LANDUSE DESIGNATION • FOR MORE INFORMATION ABOUT LANDUSE DESIGNATIONS, CALL THE COUNTY'S PLANNING DEPARTMENT AT 951-955-3200.
ZONING CLASSIFICATION(S) ORD. 348:	Click here for zoning classifications. - M-SC (CZ 5845) • CHECK MAP TO CONFIRM ZONING CLASSIFICATIONS • FOR MORE INFORMATION ABOUT ZONING CLASSIFICATIONS, CALL THE COUNTY'S PLANNING DEPARTMENT AT 951-955-3200.
ZONING DISTRICT/AREA:	- ALBERHILL AREA
OUTDOOR BILLBOARDS:	- PERMITTED BY SPECIFIC ZONING(S) M-SC
SPECIFIC PLAN:	- NOT WITHIN A SPECIFIC PLAN

NOTE: Non-mapped Policy Area issues may exist on this parcel. Please contact the Planning Department at (951)955-3200 for more information.

MAPPED POLICY AREAS:	- TEMESCAL WASH POLICY AREA - WARM SPRINGS POLICY AREA
GENERAL PLAN POLICY OVERLAY:	- NOT IN A GENERAL PLAN POLICY OVERLAY AREA
DEVELOPMENT AGREEMENT #:	- NOT IN A DEVELOPMENT AGREEMENT AREA
REDEVELOPMENT AREAS:	- NOT IN A REDEVELOPMENT AREA
AGRICULTURE PRESERVE:	- NOT IN AN AGRICULTURE PRESERVE
AIRPORT INFLUENCE AREAS:	- NOT IN AN AIRPORT INFLUENCE AREA
AIRPORT COMPATIBLITY ZONES:	- NOT IN AN AIRPORT COMPATIBILTY ZONE

Planning Case Map information may not be complete, current, or up-to-date for this area. Please contact the Planning Department if more information is needed.

PLANNING CASE(S):	- NO PLANNING CASES DESCRIPTION: NOT APPLICABLE APPLIED DATE: NOT APPLICABLE STATUS: NOT APPLICABLE
DEV. IMP. FEE AREA ORD. 659:	- ELSINORE
2000 CENSUS TRACT:	- 042007
1990 FARMLAND DESIGNATION:	- NOT A IN FARMLAND DESIGNATION
2000 CENSUS DESIGNATION:	- CENSUS DESIGNATION REPORT IS NOT AVAILABLE
INDIAN TRIBAL LANDS:	- NOT IN A TRIBAL LAND
SCHOOL DISTRICT:	- LAKE ELSINORE UNIFIED
ROAD & BRIDGE DISTRICT:	- NOT IN A DISTRICT

ROADBOOK PAGE:	- 35
* BOUNDARIES ARE APPROXIMATIONS. USE FOR REFERENCE ONLY. SURVEY INFORMATION MUST BE CONSULTED OR PREPARED TO ACCURATELY DETERMINE ANY RIGHT-OF-WAY BOUNDARY.	
CETAP CORRIDORS:	- NOT IN A CETAP CORRIDOR.
CIRCULATION ELEMENT ULTIMATE RIGHT-OF-WAY ROADS:	- NOT IN A CIRCULATION ELEMENT RIGHT-OF-WAY
EAST T.U.M.F. ORD. 673:	- NOT WITHIN THE EASTERN TUMF FEE AREA
WEST T.U.M.F. ORD. 824:	- IN OR PARTIALLY WITHIN THESE FEE AREAS. SEE MAP FOR MORE INFORMATION. - SOUTHWEST
WATER DISTRICT:	- WESTERN MUNICIPAL WATER DISTRICT (WMWD)
FLOOD CONTROL DISTRICT:	- RIVERSIDE COUNTY FLOOD CONTROL DISTRICT
FLOOD PLAIN REVIEW:	- THIS PARCEL MAY BE SUBJECT TO A FLOOD MANAGEMENT REVIEW. CONTACT THE FLOOD PLAIN MANAGEMENT SECTION AT (951) 955-1200.
WATERSHED:	- SANTA ANA RIVER
VEGETATION:	- RESIDENTIAL/URBAN/EXOTIC
SKR FEE AREA ORD. 663.10:	- IN OR PARTIALLY WITHIN A FEE AREA. SEE MAP FOR MORE INFORMATION.
HANS/ERP PROJECT:	- NONE
FAULT ZONE:	- NOT IN A FAULT ZONE
FAULTS:	WITHIN A 1/2 MILE OF - WALKER CANYON FAULT CONTACT THE COUNTY'S CHIEF ENGINEERING GEOLOGIST AT (951)955-6863.
LIQUEFACTION POTENTIAL:	- LOW
SUBSIDENCE:	- SUSCEPTIBLE
HIGH FIRE AREA ORD. 787:	- IN HIGH FIRE AREA - Grading And Building Permit Applications Require Fire Dept Clearance To Permit Issuance.
STATE RESPONSIBILITY AREAS:	- STATE RESPONSIBILITY AREA
LIGHTING ORD. 655:	- ZONE B, 40.98 MILES.
COUNTY SERVICE AREA:	- NOT IN A COUNTY SERVICE AREA.
BUILDING PERMIT(S):	-BXX982449 DESCRIPTION: HORSE BARN APPLIED DATE: 11/12/1998 STATUS AS OF 02/18/2009: EXPIRED -BNR970112 DESCRIPTION: BARN APPLIED DATE: 11/03/1997 STATUS AS OF 02/18/2009: FINAL
CODE COMPLAINTS:	-CV982041 CONSTRUCTION WITHOUT PERMIT APPLIED DATE: Aug. 27, 1998 STATUS: COMPLETED
ENVIRON. HEALTH CASE(S):	- NO ENVIRONMENTAL CASES
TAX RATE AREAS:	- 065-030 • COUNTY FREE LIBRARY • COUNTY STRUCTURE FIRE PROTECTION • COUNTY WASTE RESOURCE MGMT DIST • CSA 152 • ELSINORE AREA ELEM SCHOOL FUND • ELSINORE VAL MUN WTR IMP DIST 1

- ELSINORE VALLEY CEMETERY
- ELSINORE VALLEY MUNICIPAL WATER
- FLOOD CONTROL ADMINISTRATION
- FLOOD CONTROL ZONE 2
- GENERAL
- GENERAL PURPOSE
- LAKE ELSINORE UNIF IMP NO 96-1
- LAKE ELSINORE UNIFIED
- METRO WATER WEST 1302999
- MT SAN JACINTO JUNIOR COLLEGE
- RIV CO REG PARK & OPEN SPACE
- RIV. CO. OFFICE OF EDUCATION
- RIVERSIDE CORONA RESOURCE CONSER
- WESTERN MUNICIPAL WATER

SURFACE MINES: - NO SURFACE MINES

PALEONTOLOGICAL SENSITIVITY: - LOW POTENTIAL.
FOLLOWING A LITERATURE SEARCH, RECORDS CHECK AND A FIELD SURVEY, AREAS BE DETERMINED BY A QUALIFIED VERTEBRATE PALEONTOLOGIST AS HAVING LOW POTENTIAL FOR CONTAINING SIGNIFICANT PALEONTOLOGICAL RESOURCES SUBJEC ADVERSE IMPACTS.

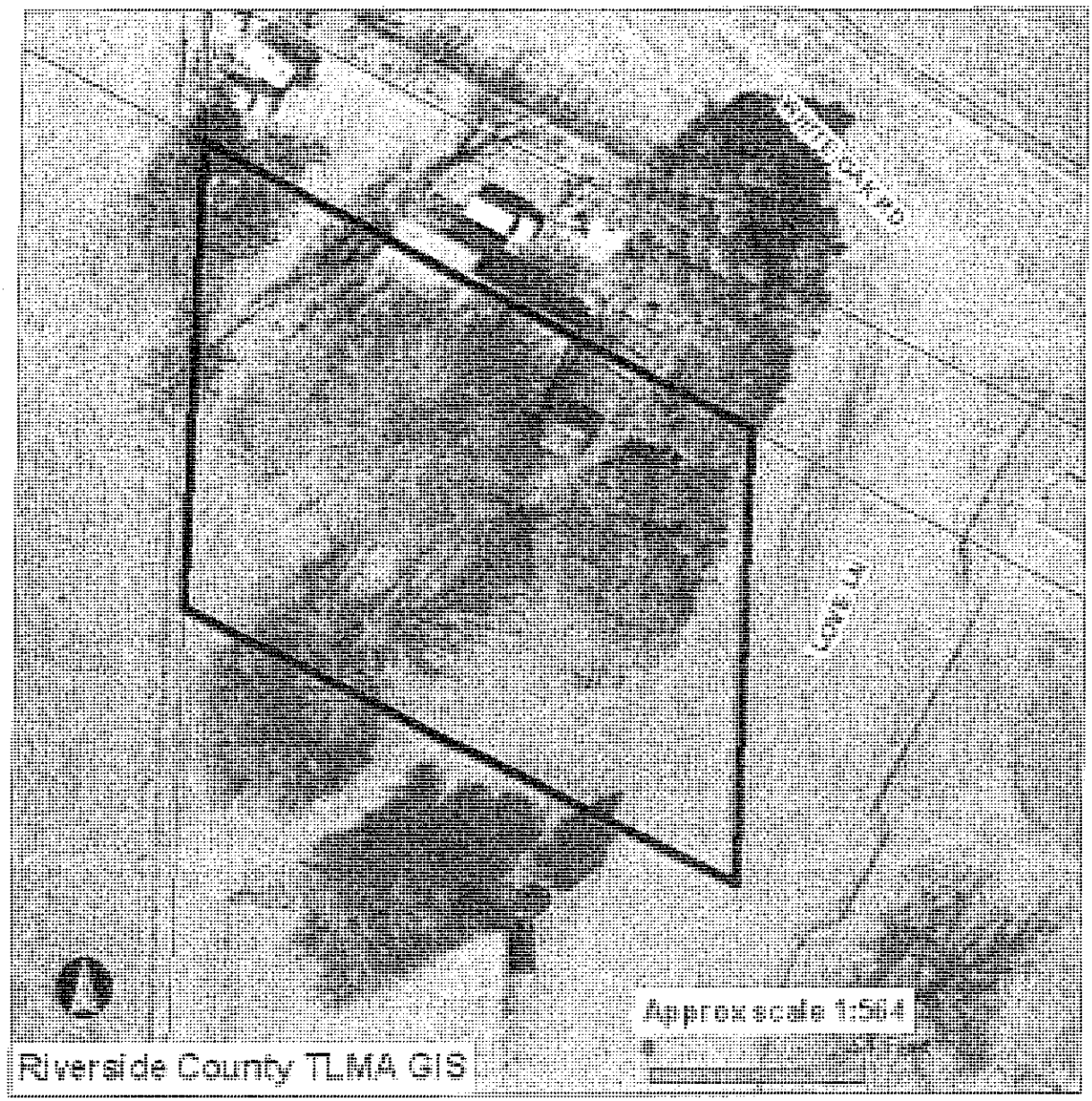
COMMUNITY FACILITY DISTRICTS: - NAME: NOT IN A COMMUNITY FACILITY DISTRICT
- DISTRICT NUMBER: NOT AVAILABLE

THOMAS BROS. MAPS PAGE/GRID: - PAGE 835- GRID D3

SPECIAL NOTES: - NO SPECIAL NOTES

REPORT PRINTED ON...Wed Feb 18 11:16:45 2009

RIVERSIDE COUNTY GIS



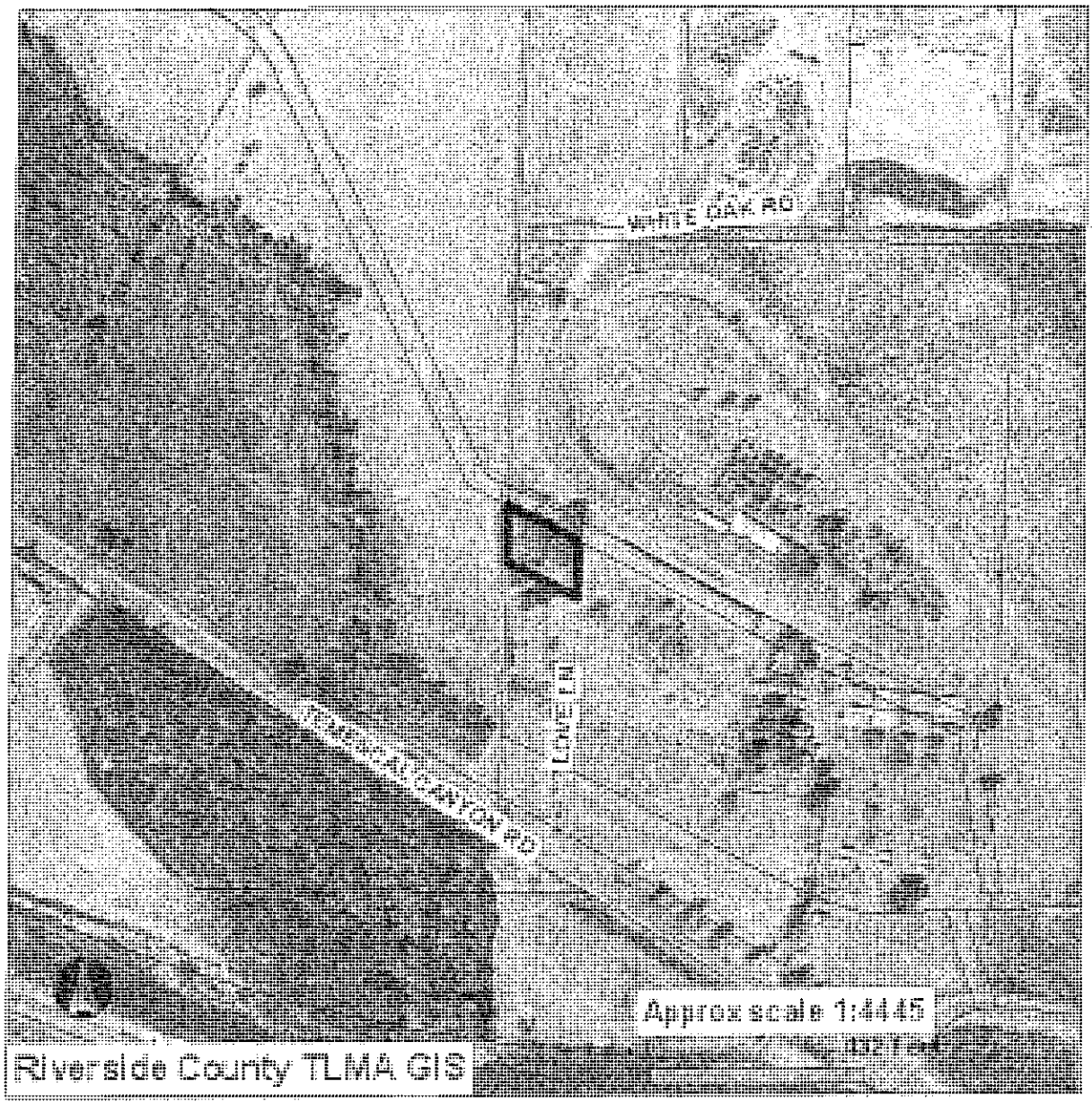
Selected parcel(s):
391-120-003

LEGEND

SELECTED PARCEL | PARCELS | CITY BOUNDARY

REPORT PRINTED ON...Wed Feb 18 11:11:08 2009

RIVERSIDE COUNTY GIS



Selected parcel(s):
391-120-003

LEGEND

☐ SELECTED PARCEL ☐ PARCELS ☐ CITY BOUNDARY

IMPORTANT
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FULL REPORT
APN(s): 391-120-003-1

OWNER NAME / ADDRESS:

- 391-120-003
THOMAS JOSEPH BOYLE
BRIDGET BOYLE
14116 HIGHWAY 71
LAKE ELSINORE, CA. 92530

MAIL TO NAME/ADDRESS:	- 391-120-003 - (SEE OWNER) - 14016 TEMESCAL CANYON RD - CORONA CA. 92883
APN CAME FROM:	- 391-120-003 - CAME FROM: 180-400-066
LOT SIZE:	- 391-120-003 - RECORDED LOT SIZE IS: 0.35 ACRES MAPPED LOT SIZE IS APPROX.: 0.382 ACRES
PROPERTY CHARACTERISTICS:	- 1. 391-120-003 - NO PROPERTY DESCRIPTION AVAILABLE
ELEVATION (APPROXIMATE):	- 1184/1188 FEET
LEGAL DESCRIPTION:	- APN: 391120003 - RECORDED BOOK/PAGE: NOT AVAILABLE - SUBDIVISION NAME: NOT AVAILABLE - LOT/PARCEL: NOT AVAILABLE - TRACT NUMBER: NOT AVAILABLE
BASE YEAR ASSESSMENT:	- 391-120-003 - BASE YEAR: 1981
TOWNSHIP/RANGE:	- T5SR5W SEC 16
CEMETERY DISTRICTS:	- ELSINORE CEMETERY DISTRICT
CITY BOUNDARY/SPHERE:	- CITY: NOT WITHIN A CITY - CITY SPHERE: LAKE ELSINORE - ANNEXATION DATE: NO DATE AVAILABLE - LAFCO CASE #: NO CASE # AVAILABLE - PROPOSALS: NONE
COMMUNITY:	- IN OR PARTIALLY WITHIN HORSETHIEF CANYON. SEE MAP FOR MORE INFORMATION
2001 SUPERVISORIAL DISTRICT:	- BOB BUSTER, DISTRICT 1 as established by County Ordinance 813, August 14, 2001
AREA PLAN:	- ELSINORE
COACHELLA VALLEY MULTI-SPECIES HABITAT CONSERVATION PLAN FEE AREA:	- NOT WITHIN THE COACHELLA VALLEY MSHCP FEE AREA
COACHELLA VALLEY MULTI-SPECIES HABITAT CONSERVATION PLAN - CONSERVATION AREA:	- NOT IN A CONSERVATION AREA
WESTERN RIVERSIDE MULTI-SPECIES HABITAT CONSERVATION PLAN FEE AREA:	- IN OR PARTIALLY WITHIN THE WESTERN RIVERSIDE MSHCP FEE AREA. SEE MAP FOr MORE INFORMATION.
WESTERN RIVERSIDE COUNTY MSHCP AREA PLAN:	- ELSINORE
WESTERN RIVERSIDE COUNTY MSHCP CELL GROUP:	- H
WESTERN RIVERSIDE COUNTY MSHCP CELL NUMBER:	- 3649

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LANDUSE DESIGNATION:	Click here for landuse descriptions. - LI • CHECK MAP TO CONFIRM LANDUSE DESIGNATION • FOR MORE INFORMATION ABOUT LANDUSE DESIGNATIONS, CALL THE COUNTY'S PLANNING DEPARTMENT AT 951-955-3200.
ZONING CLASSIFICATION(S) ORD. 348:	Click here for zoning classifications. - M-SC (CZ 5845) • CHECK MAP TO CONFIRM ZONING CLASSIFICATIONS • FOR MORE INFORMATION ABOUT ZONING CLASSIFICATIONS, CALL THE COUNTY'S PLANNING DEPARTMENT AT 951-955-3200.
ZONING DISTRICT/AREA:	- ALBERHILL AREA
OUTDOOR BILLBOARDS:	- PERMITTED BY SPECIFIC ZONING(S) M-SC
SPECIFIC PLAN:	- NOT WITHIN A SPECIFIC PLAN

NOTE: Non-mapped Policy Area issues may exist on this parcel. Please contact the Planning Department at (951)955-3200 for more information.

MAPPED POLICY AREAS:	- TEMESCAL WASH POLICY AREA - WARM SPRINGS POLICY AREA
GENERAL PLAN POLICY OVERLAY:	- NOT IN A GENERAL PLAN POLICY OVERLAY AREA
DEVELOPMENT AGREEMENT #:	- NOT IN A DEVELOPMENT AGREEMENT AREA
REDEVELOPMENT AREAS:	- NOT IN A REDEVELOPMENT AREA
AGRICULTURE PRESERVE:	- NOT IN AN AGRICULTURE PRESERVE
AIRPORT INFLUENCE AREAS:	- NOT IN AN AIRPORT INFLUENCE AREA
AIRPORT COMPATIBLITY ZONES:	- NOT IN AN AIRPORT COMPATIBILTY ZONE

Planning Case Map information may not be complete, current, or up-to-date for this area. Please contact the Planning Department if more information is needed.

PLANNING CASE(S):	- NO PLANNING CASES DESCRIPTION: NOT APPLICABLE APPLIED DATE: NOT APPLICABLE STATUS: NOT APPLICABLE
DEV. IMP. FEE AREA ORD. 659:	- ELSINORE
2000 CENSUS TRACT:	- 042007
1990 FARMLAND DESIGNATION:	- NOT A IN FARMLAND DESIGNATION
2000 CENSUS DESIGNATION:	- CENSUS DESIGNATION REPORT IS NOT AVAILABLE
INDIAN TRIBAL LANDS:	- NOT IN A TRIBAL LAND
SCHOOL DISTRICT:	- LAKE ELSINORE UNIFIED
ROAD & BRIDGE DISTRICT:	- NOT IN A DISTRICT
ROADBOOK PAGE:	- 35

* BOUNDARIES ARE APPROXIMATIONS. USE FOR REFERENCE ONLY. SURVEY INFORMATION MUST BE CONSULTED OR PREPARED TO ACCURATELY DETERMINE ANY RIGHT-OF-WAY BOUNDARY.

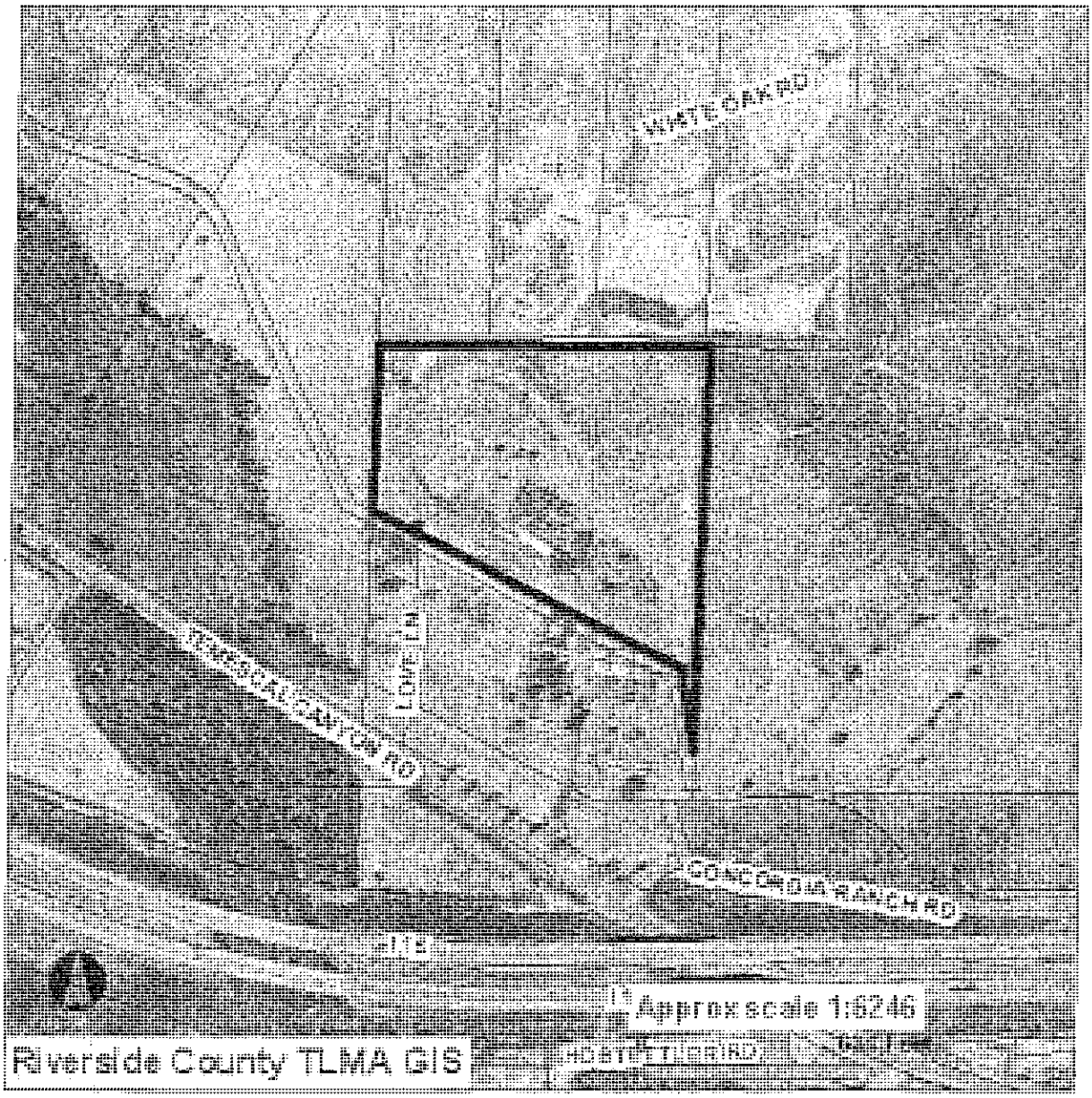
CETAP CORRIDORS:	- NOT IN A CETAP CORRIDOR.
CIRCULATION ELEMENT ULTIMATE RIGHT-OF-WAY ROADS:	- NOT IN A CIRCULATION ELEMENT RIGHT-OF-WAY

EAST T.U.M.F. ORD. 673:	- NOT WITHIN THE EASTERN TUMF FEE AREA
WEST T.U.M.F. ORD. 824:	- IN OR PARTIALLY WITHIN THESE FEE AREAS. SEE MAP FOR MORE INFORMATION. - SOUTHWEST
WATER DISTRICT:	- WESTERN MUNICIPAL WATER DISTRICT (WMWD)
FLOOD CONTROL DISTRICT:	- RIVERSIDE COUNTY FLOOD CONTROL DISTRICT
FLOOD PLAIN REVIEW:	- NOT REQUIRED.
WATERSHED:	- SANTA ANA RIVER
VEGETATION:	- RESIDENTIAL/URBAN/EXOTIC
SKR FEE AREA ORD. 663.10:	- IN OR PARTIALLY WITHIN A FEE AREA. SEE MAP FOR MORE INFORMATION.
HANS/ERP PROJECT:	- NONE
FAULT ZONE:	- NOT IN A FAULT ZONE
FAULTS:	WITHIN A 1/2 MILE OF - WALKER CANYON FAULT CONTACT THE COUNTY'S CHIEF ENGINEERING GEOLOGIST AT (951)955-6863.
LIQUEFACTION POTENTIAL:	- LOW
SUBSIDENCE:	- SUSCEPTIBLE
HIGH FIRE AREA ORD. 787:	- IN HIGH FIRE AREA - Grading And Building Permit Applications Require Fire Dept Clearance To Permit Issuance.
STATE RESPONSIBILITY AREAS:	- STATE RESPONSIBILITY AREA
LIGHTING ORD. 655:	- ZONE B, 41.18 MILES.
COUNTY SERVICE AREA:	- NOT IN A COUNTY SERVICE AREA.
BUILDING PERMIT(S):	-BZ247040 DESCRIPTION: INSP TO CONVERT BARN TO FEED STORE APPLIED DATE: 01/06/2004 STATUS AS OF 02/18/2009: FINAL
CODE COMPLAINTS:	- NO CODE COMPLAINTS
ENVIRON. HEALTH CASE(S):	- NO ENVIRONMENTAL CASES
TAX RATE AREAS:	- 065-030 • COUNTY FREE LIBRARY • COUNTY STRUCTURE FIRE PROTECTION • COUNTY WASTE RESOURCE MGMT DIST • CSA 152 • ELSINORE AREA ELEM SCHOOL FUND • ELSINORE VAL MUN WTR IMP DIST 1 • ELSINORE VALLEY CEMETERY • ELSINORE VALLEY MUNICIPAL WATER • FLOOD CONTROL ADMINISTRATION • FLOOD CONTROL ZONE 2 • GENERAL • GENERAL PURPOSE • LAKE ELSINORE UNIF IMP NO 96-1 • LAKE ELSINORE UNIFIED • METRO WATER WEST 1302999 • MT SAN JACINTO JUNIOR COLLEGE • RIV CO REG PARK & OPEN SPACE • RIV. CO. OFFICE OF EDUCATION • RIVERSIDE CORONA RESOURCE CONSER • WESTERN MUNICIPAL WATER
SURFACE MINES:	- NO SURFACE MINES

PALEONTOLOGICAL SENSITIVITY:	- LOW POTENTIAL. FOLLOWING A LITERATURE SEARCH, RECORDS CHECK AND A FIELD SURVEY, AREAS BE DETERMINED BY A QUALIFIED VERTEBRATE PALEONTOLOGIST AS HAVING LOW POTENTIAL FOR CONTAINING SIGNIFICANT PALEONTOLOGICAL RESOURCES SUBJEC ADVERSE IMPACTS.
COMMUNITY FACILITY DISTRICTS:	- NAME: NOT IN A COMMUNITY FACILITY DISTRICT - DISTRICT NUMBER: NOT AVAILABLE
THOMAS BROS. MAPS PAGE/GRID:	- PAGE 835- GRID D3
SPECIAL NOTES:	- NO SPECIAL NOTES

REPORT PRINTED ON...Wed Feb 18 11:09:49 2009

RIVERSIDE COUNTY GIS



Selected parcel(s):
391-120-002

LEGEND

☐ SELECTED PARCEL ☐ PARCELS ☐ CITY BOUNDARY

FULL REPORT
APN(s): 391-120-002-0

OWNER NAME / ADDRESS: - 391-120-002
ANGELES CORNELIO KEELER
14114 TEMESCAL CANYON RD
CORONA, CA, 92883

MAIL TO NAME/ADDRESS:	- 391-120-002 - (SEE OWNER) - 2262 SALT AIR DR - SANTA ANA CA. 92705
APN CAME FROM:	- 391-120-002 - CAME FROM: 180-400-327
LOT SIZE:	- 391-120-002 - RECORDED LOT SIZE IS: 15.73 ACRES MAPPED LOT SIZE IS APPROX.: 16.988 ACRES
PROPERTY CHARACTERISTICS:	- 1. 391-120-002 - NO PROPERTY DESCRIPTION AVAILABLE
ELEVATION (APPROXIMATE):	- 1192/1360 FEET
LEGAL DESCRIPTION:	- APN: 391120002 - RECORDED BOOK/PAGE: NOT AVAILABLE - SUBDIVISION NAME: NOT AVAILABLE - LOT/PARCEL: NOT AVAILABLE - TRACT NUMBER: NOT AVAILABLE
BASE YEAR ASSESSMENT:	- 391-120-002 - BASE YEAR: 1998
TOWNSHIP/RANGE:	- T5SR5W SEC 16
CEMETERY DISTRICTS:	- ELSINORE CEMETERY DISTRICT
CITY BOUNDARY/SPHERE:	- CITY: NOT WITHIN A CITY - CITY SPHERE: LAKE ELSINORE - ANNEXATION DATE: NO DATE AVAILABLE - LAFCO CASE #: NO CASE # AVAILABLE - PROPOSALS: NONE
COMMUNITY:	- IN OR PARTIALLY WITHIN HORSETHIEF CANYON. SEE MAP FOR MORE INFORMATION
2001 SUPERVISORIAL DISTRICT:	- BOB BUSTER, DISTRICT 1 as established by County Ordinance 813, August 14, 2001
AREA PLAN:	- ELSINORE
COACHELLA VALLEY MULTI-SPECIES HABITAT CONSERVATION PLAN FEE AREA:	- NOT WITHIN THE COACHELLA VALLEY MSHCP FEE AREA
COACHELLA VALLEY MULTI-SPECIES HABITAT CONSERVATION PLAN - CONSERVATION AREA:	- NOT IN A CONSERVATION AREA
WESTERN RIVERSIDE MULTI-SPECIES HABITAT CONSERVATION PLAN FEE AREA:	- IN OR PARTIALLY WITHIN THE WESTERN RIVERSIDE MSHCP FEE AREA. SEE MAP FOR MORE INFORMATION.
WESTERN RIVERSIDE COUNTY MSHCP AREA PLAN:	- ELSINORE
WESTERN RIVERSIDE COUNTY MSHCP CELL GROUP:	- H
WESTERN RIVERSIDE COUNTY MSHCP CELL NUMBER:	- 3649

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before desired development may proceed. For further information, please contact the Riverside County Planning Department offices in Riverside at (951 3200, in Murrieta at (951) 600-6170, or in Indio at (760) 863-8277.

LANDUSE DESIGNATION:	Click here for landuse descriptions. - LI • CHECK MAP TO CONFIRM LANDUSE DESIGNATION • FOR MORE INFORMATION ABOUT LANDUSE DESIGNATIONS, CALL THE COUNTY'S PLANNING DEPARTMENT AT 951-955-3200.
ZONING CLASSIFICATION(S) ORD. 348:	Click here for zoning classifications. - M-SC (CZ 5845) • CHECK MAP TO CONFIRM ZONING CLASSIFICATIONS • FOR MORE INFORMATION ABOUT ZONING CLASSIFICATIONS, CALL THE COUNTY'S PLANNING DEPARTMENT AT 951-955-3200.
ZONING DISTRICT/AREA:	- ALBERHILL AREA
OUTDOOR BILLBOARDS:	- PERMITTED BY SPECIFIC ZONING(S) M-SC
SPECIFIC PLAN:	- NOT WITHIN A SPECIFIC PLAN

NOTE: Non-mapped Policy Area issues may exist on this parcel. Please contact the Planning Department at (951)955-3200 for more information.

MAPPED POLICY AREAS:	- WARM SPRINGS POLICY AREA
GENERAL PLAN POLICY OVERLAY:	- NOT IN A GENERAL PLAN POLICY OVERLAY AREA
DEVELOPMENT AGREEMENT #:	- NOT IN A DEVELOPMENT AGREEMENT AREA
REDEVELOPMENT AREAS:	- NOT IN A REDEVELOPMENT AREA
AGRICULTURE PRESERVE:	- NOT IN AN AGRICULTURE PRESERVE
AIRPORT INFLUENCE AREAS:	- NOT IN AN AIRPORT INFLUENCE AREA
AIRPORT COMPATIBLITY ZONES:	- NOT IN AN AIRPORT COMPATIBILTY ZONE

Planning Case Map information may not be complete, current, or up-to-date for this area. Please contact the Planning Department if more information is needed.

PLANNING CASE(S):	- COC02458 DESCRIPTION: NOT AVAILABLE APPLIED DATE: 11/20/1987 STATUS AS OF 02/18/2009: NOTINLMS
DEV. IMP. FEE AREA ORD. 659:	- ELSINORE
2000 CENSUS TRACT:	- 042007
1990 FARMLAND DESIGNATION:	- GRAZING LAND
2000 CENSUS DESIGNATION:	- CENSUS DESIGNATION REPORT IS NOT AVAILABLE
INDIAN TRIBAL LANDS:	- NOT IN A TRIBAL LAND
SCHOOL DISTRICT:	- LAKE ELSINORE UNIFIED
ROAD & BRIDGE DISTRICT:	- NOT IN A DISTRICT
ROADBOOK PAGE:	- 35

* BOUNDARIES ARE APPROXIMATIONS. USE FOR REFERENCE ONLY. SURVEY INFORMATION MUST BE CONSULTED OR PREPARED TO ACCURATELY DETERMINE ANY RIGHT-OF-WAY BOUNDARY.

CETAP CORRIDORS:	- NOT IN A CETAP CORRIDOR.
CIRCULATION ELEMENT ULTIMATE RIGHT-OF-WAY ROADS:	- NOT IN A CIRCULATION ELEMENT RIGHT-OF-WAY
EAST T.U.M.F. ORD. 673:	- NOT WITHIN THE EASTERN TUMF FEE AREA

WEST T.U.M.F. ORD. 824:	- IN OR PARTIALLY WITHIN THESE FEE AREAS. SEE MAP FOR MORE INFORMATION. - SOUTHWEST
WATER DISTRICT:	- WESTERN MUNICIPAL WATER DISTRICT (WMWD)
FLOOD CONTROL DISTRICT:	- RIVERSIDE COUNTY FLOOD CONTROL DISTRICT
FLOOD PLAIN REVIEW:	- NOT REQUIRED.
WATERSHED:	- SANTA ANA RIVER
VEGETATION:	- RESIDENTIAL/URBAN/EXOTIC - RIVERSIDEAN SAGE SCRUB
SKR FEE AREA ORD. 663.10:	- IN OR PARTIALLY WITHIN A FEE AREA. SEE MAP FOR MORE INFORMATION.
HANS/ERP PROJECT:	- NONE
FAULT ZONE:	- NOT IN A FAULT ZONE
FAULTS:	WITHIN A 1/2 MILE OF - WALKER CANYON FAULT CONTACT THE COUNTY'S CHIEF ENGINEERING GEOLOGIST AT (951)955-6863.
LIQUEFACTION POTENTIAL:	- LOW
SUBSIDENCE:	- SUSCEPTIBLE
HIGH FIRE AREA ORD. 787:	- IN HIGH FIRE AREA - Grading And Building Permit Applications Require Fire Dept Clearance To Permit Issuance.
STATE RESPONSIBILITY AREAS:	- STATE RESPONSIBILITY AREA
LIGHTING ORD. 655:	- ZONE B, 41.00 MILES.
COUNTY SERVICE AREA:	- NOT IN A COUNTY SERVICE AREA.
BUILDING PERMIT(S):	- NO BUILDING PERMITS
CODE COMPLAINTS:	- NO CODE COMPLAINTS
ENVIRON. HEALTH CASE(S):	- NO ENVIRONMENTAL CASES
TAX RATE AREAS:	- 065-030 · COUNTY FREE LIBRARY · COUNTY STRUCTURE FIRE PROTECTION · COUNTY WASTE RESOURCE MGMT DIST · CSA 152 · ELSINORE AREA ELEM SCHOOL FUND · ELSINORE VAL MUN WTR IMP DIST 1 · ELSINORE VALLEY CEMETERY · ELSINORE VALLEY MUNICIPAL WATER · FLOOD CONTROL ADMINISTRATION · FLOOD CONTROL ZONE 2 · GENERAL · GENERAL PURPOSE · LAKE ELSINORE UNIF IMP NO 96-1 · LAKE ELSINORE UNIFIED · METRO WATER WEST 1302999 · MT SAN JACINTO JUNIOR COLLEGE · RIV CO REG PARK & OPEN SPACE · RIV. CO. OFFICE OF EDUCATION · RIVERSIDE CORONA RESOURCE CONSER · WESTERN MUNICIPAL WATER
SURFACE MINES:	- NO SURFACE MINES
PALEONTOLOGICAL SENSITIVITY:	- LOW POTENTIAL. FOLLOWING A LITERATURE SEARCH, RECORDS CHECK AND A FIELD SURVEY, AREAS

	BE DETERMINED BY A QUALIFIED VERTEBRATE PALEONTOLOGIST AS HAVING LOW POTENTIAL FOR CONTAINING SIGNIFICANT PALEONTOLOGICAL RESOURCES SUBJEC ADVERSE IMPACTS.
COMMUNITY FACILITY DISTRICTS:	- NAME: NOT IN A COMMUNITY FACILITY DISTRICT - DISTRICT NUMBER: NOT AVAILABLE
THOMAS BROS. MAPS PAGE/GRID:	- PAGE 835- GRID D3
SPECIAL NOTES:	- NO SPECIAL NOTES

REPORT PRINTED ON...Wed Feb 18 11:14:03 2009

Scale 1"=40'

COUNTY OF RIVERSIDE, ENVIRONMENTAL HEALTH SERVICES DIVISION
PERMIT APPLICATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

241 - 12 (2 [illegible]

Applicant: Submit this form with ~~four~~ 3 copies of a scaled plot plan (1-20 scale) drawn to County specifications required on the attached check list. A non-refundable filing fee of $40 is required when the application is submitted. Check must be made payable to the County of Riverside.

Building Department Application Log # 183247

SECTION A

Name (Owner Agent Contractor Etc.)	Mailing Address
BROOK HARRIS	14116 Temescal Cnyn Rd

City	State	Zip Code	Telephone
Corona	CA	91719	(714) 674-9247

*Job Property Address	*City or Community	*Legal Description of Property (Lot PM TR)
14114 Temescal Cnyn Rd.		Sec 16 T5S R5W

*Assessor's Parcel No	Water Agency or Well	Use of Permit	Planning Case #	Lot Size
391-12-052	Well	SFD MH Site Preparation Etc	[illegible]	15.72

Signature of Applicant: Brook Harris Date: March 8, 1988

*The above information *must be verified* from *Building Application*

STAFF USE — DO NOT WRITE BELOW THIS LINE

SECTION B

			Initial	Date
Certification of Existing S.D. System required.	☐ Yes	☐ No	[illegible]	2-24-88
WQCB Clearance required.	☐ Yes	☐ No		
Soils feasibility report required. — Perc test required — Original Signature	☒ Yes	☐ No		
Special feasibility boring report required.	☐ Yes	☐ No		
Detailed contour plot plans required.	☐ Yes	☐ No		
Staff Specialist approval required.	☐ Yes	☐ No		

Lot Inspection Date: _____

Soils/boring report by: Am I Corp. Project # 88-2641 Date: 3/2/88

Soils Map Page: 105 Soil Type: YbE2 Approved by: [illegible] Date: 3/16/88

Type of System	No. of Bedrooms	(1) Septic Tank	Soil Rate Required
☐ Existing ☑ New ☐ Additional ☐ Replacement	3+Mstr	750 Gals.	3 d/in/ft

(2) Leach line sq. ft	Sidewall allowance	Install	Leach bed Sq. Ft. of bottom area
(Bottom trench area) 750 sq ft	_____ ft. rock/_____ Sq. Ft. per running ft. ☑ N/A	1 Line(s) 75' Ft. Long, 3' Ft. wide with min. 12" inches rock below drain lines	1/A

Leach lines/beds special design for slope:	(3) Pit Diameter	No. Pits	Pit Bl	Seepage Pit total depth / Max. allowable depth
Applicable _____ N/A ☑ Overburden factor _____	☐ 5' ☐ 6'			

SECTION C

REMARKS

This application is approved/denied for the design of a subsurface disposal system as indicated on the accompanied plot plan using the requirements set forth in Section B above. A building permit is necessary for the installation of the above-designed system.

(1) Septic tank and sewer lines must be 50' from any wells
(2) Leach lines must be 100' min. from any wells including expansion area
(3) Seepage pits must be 150' min. from any wells including expansion area

Signature of Health Official: [illegible] Date: 3/16/88

RECEIPT NO 15415 Issued by [illegible] Date 3-16-88

District: ☑ Riverside ☐ Indio ☐ Hemet ☐ Perris ☐ Rancho Calif. ☐ Blythe

EAST

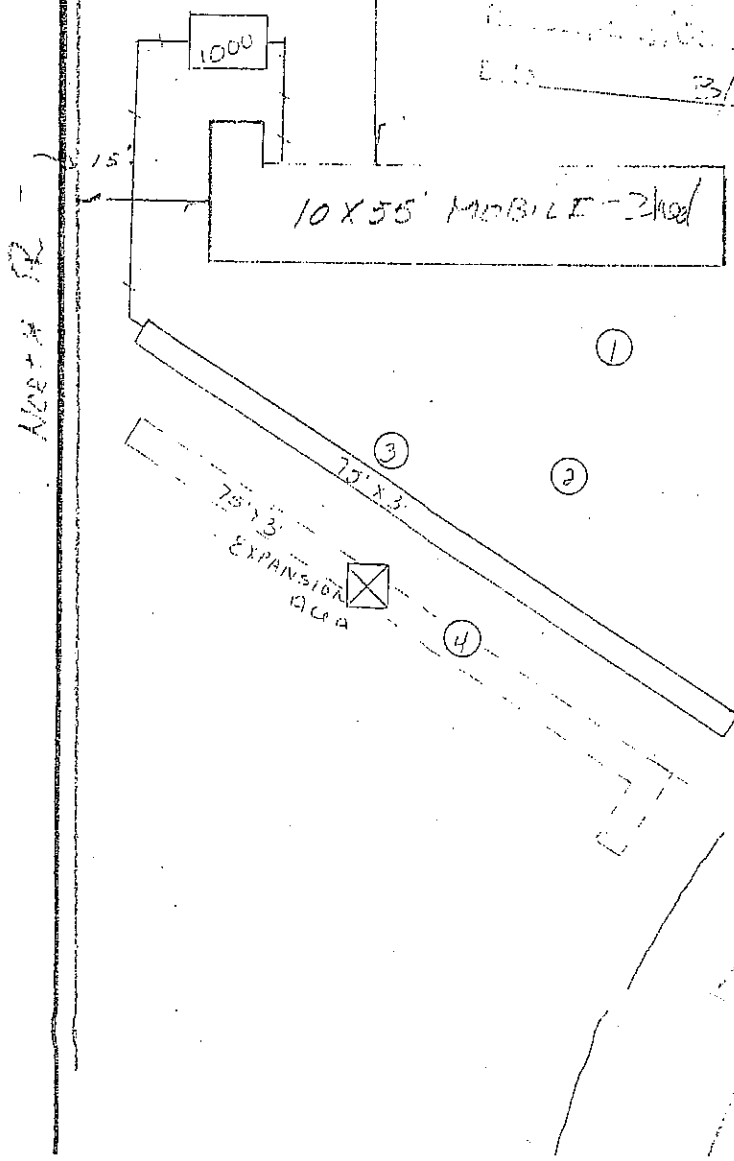
American/Pacific Soils Labs, Inc.

PROJECT NO. 88-2694

DATE 2/27/88

PERCOLATION TEST SITES

EXPLORATORY BORINGS



APPLICANT

HARRIS RANCH
14114 TEMESCAL CNYN RD
PTN OF 391-120-002-0

JOBSITE

14114 TEMESCAN C.RD.

SYSTEM DESIGN

10 X 50 2 B.R. MOBILE
750 GAL SEPTIC TANK
225 SQ.FT. BOTTOM AREA
OF TRENCHES, MIN.
1 LINE, 75' X 36". MIN.
1 FT. ROCK BENEATH DRAIN LINE

AM/PAC

500 HARRINGTON ST., SUITE J
CORONA, CA 91720
(714) 735-8677

1398 STATE ST., SUITE A
SAN JACINTO, CA., 92383
(714) 654-5366

1-800-527-7372

14114 TEMESCAL CANYON ROAD
(HARRIS RANCH PROPERTY)
PTN OF 391-120-002-0

PROJECT 88-2694 -- 2/27/88

ORIGINAL

Percolation Investigation

American/Pacific Soils Labs, Inc.

P.O. BOX 545 ▫ NORCO, CALIFORNIA 91760 ▫ (714) 735-8677

American/Pacific Soils Labs, Inc.

PROJECT REPORT
88-2694 -- 2/27/88

OWNER OR PERSON REQUESTING REPORT

HARRIS RANCH
14116 OLD TEMESCAL ROAD
CORONA, CA., 91719 674-9247

LOCATION OF PROJECT

N.W.CORNER OF HARRIS RANCH.
14114 OLD TEMESCAL ROAD, CORONA.
LOCATED ON PORTION OF 15.73 ACRES IN N½ OF SECTION 16, T5S,R5W

PROPOSED DEVELOPMENT

CARETAKER MOBILE, 2 B.R. 10 X 50 WITH LEACH LINE SYSTEM.

DESCRIPTION OF PROPERTY

MOBILE SITE IS LOCATED ON LARGE HORSE RANCH. SEE ATTACHED PLOT PLAN SHOWING OVER-ALL LOCATIONS. NO OTHER SYSTEMS OR WELLS LOCATED IN THE AREA WHERE MOBILE IS TO BE PLACED. NO DETRIMENTAL FEATURES NOTED IN NORTHWEST PORTION OF THE PROPERTY. SEE ATTACHED PLOT PLAN AND DESIGN OF THE SYSTEM.

SPECIAL USE OF A BACKHOE AND PROTECTION OF THE TEST SITES WERE UTILIZED DUE TO THE NATURE OF THE SURROUNDING SITE AND PRESENCE OF HORSES, ETC..

TEST DATA

DESIGN RATE: 11.11 MIN/INCH
MINIMUM AREA REQUIRED: 30 SQ.FT./100 GAL/DAY

750 GALLON SEPTIC TANK (2 B.R.MOBILE)
225 SQ.FT. BOTTOM AREA OF TRENCHES, MIN. 75 FT. OF 36" WIDE TRENCH, MIN.

EXPLORATORY BORING ON 2/27/88 USING CASE EXTENDAHOE, PERCOLATION TEST SITES BORED USING CONTINUOUS FLIGHT AUGER RIG.. ALL SITES COVERED IMMEDIATELY DUE TO PRESENCE OF ANIMALS.. 15 FT BORE ABSOLUTELY DRY AFTER 4 HOURS OF OBSERVATION.

AM/PAC

PROJECT 88-2694 -- 2/27/88

CONCLUSIONS, CONTINUED

BASED ON THE DATA PRESENTED IN THIS REPORT AND USING THE RECOMMENDATIONS SET FORTH HEREIN, IT IS THE OPINION OF THE UNDERSIGNED THAT THERE IS SUFFICIENT AREA ON EACH LOT IN QUESTION TO SUPPORT AN INDIVIDUAL SEWAGE SYSTEM THAT WILL MEET THE CURRENT CODES AND STANDARDS OF THE RIVERSIDE COUNTY HEALTH DEPARTMENT. BASED ON THE DATA PRESENTED IN THE REPORT AND THE TESTING INFORMATION ACCUMULATED, IT IS THE OPINION OF THE UNDERSIGNED THAT THE GROUNDWATER TABLE WILL NOT ENCROACH WITHIN THE CURRENT ALLOWABLE LIMITS SET FORTH BY COUNTY AND STATE REQUIREMENTS.

HORSE CORRALS OR ANIMAL PENS, IF CONTEMPLATED, MUST NOT BE PLACED OVER LEACH LINES. DRIVEWAYS, EITHER PAVED OR UNPAVED MUST NOT BE PLACED OVER LEACH LINES. THE PROPOSED PROJECT SHALL BE LOCATED SO THAT THE SEWAGE DISPOSAL SYSTEM AND THE COUNTY'S REQUIREMENT FOR A 100% EXPANSION AREA, IN THE EVENT OF FAILURE OF THE SYSTEM, SHALL BE BY GRAVITY FLOW. THE ORIGINAL LEACH LINE AND ALL REQUIRED EXPANSION AREAS SHALL BE LOCATED IN NATURAL, UNDISTURBED SOIL AND AT THE DEPTH OF THE TESTS PERFORMED.

NOTE: THE REPORT STAMPED "ORIGINAL" MUST BE SUBMITTED TO THE COUNTY OF RIVERSIDE WHEN APPLICATION IS MADE AS THE RIVERSIDE COUNTY ENVIRONMENTAL HEALTH DEPARTMENT WILL NOT ACCEPT THE REPORT STAMPED "COPY".

THE CONCLUSIONS AND RECOMMENDATIONS PROVIDED IN THIS REPORT WERE DERIVED FROM DATA GATHERED FROM OUR FIELD INVESTIGATIONS AND ENGINEERING ANALYSIS, USING METHODS MEETING THE STANDARD PRACTICES AT THIS TIME. THIS REPORT IS BASED ON CONDITIONS EXISTING AT THE TIME OF THE INVESTIGATION.. ANY ENVIRONMENTAL CHANGES, WHETHER NATURAL OR CAUSED BY MAN, MAY ALTER OR NEGATE THE CONCLUSIONS OR RECOMMENDATIONS HEREIN. NO WARRANTY IS MADE OR IMPLIED BY THE SUBMITTAL OF THIS REPORT NOR BY ANY ORAL OR WRITTEN AGREEMENT. ANY LIABILITY IN CONNECTION HEREWITH IS LIMITED TO THE FEE CHARGED FOR THIS REPORT.

THANK YOU FOR THE OPPORTUNITY TO BE OF SERVICE. IF YOU SHOULD HAVE ANY QUESTIONS CONCERNING THIS REPORT, PLEASE FEEL FREE TO CONTACT THE UNDERSIGNED AT YOUR CONVENIENCE.

ANY REVISIONS OF THIS REPORT MAY BE SUBJECT TO ADDITIONAL CHARGES.

ORIGINAL

C.A. RICHARDS
CERTIFIED ENGINEERING
GEOLOGIST #50

BILL BALLLINGER, PRESIDENT
AMERICAN PACIFIC SOILS LABS, INC.

AM/PAC

PROJECT NO. 8526974

DATE 2/27/85

Field Percolation Test Data

TEST NO. 1

DEPTH 30 in.

SOIL TYPE

Sands - Some gravel

DESIGN RATE 10.00 MIN/INCH

No.	Time	Inch drop
1	25	DRY
2	25	9.2
3	10	4.1
4	10	3.4
5	10	2.9
6	10	2.5
7	10	1.7
8	10	1.0

MINIMUM AREA REQUIRED

25 Ft^2/100 Gallons/Day

TEST NO. 2

DEPTH 38 in.

SOIL TYPE

Sands

DESIGN RATE 11.11 MIN/INCH

No.	Time	Inch drop
1	25	DRY
2	25	8.3
3	10	3.7
4	10	4.1
5	10	2.4
6	10	1.9
7	10	1.3
8	10	.9

MINIMUM AREA REQUIRED

30 Ft^2/100 Gallons/Day

TEST NO. 3

DEPTH 36 in.

SOIL TYPE

Sands

DESIGN RATE 10.00 MIN/INCH

No.	Time	Inch drop
1	25	DRY
2	25	9.0
3	10	5.9
4	10	4.6
5	10	3.8
6	10	2.2
7	10	1.7
8	10	1.0

MINIMUM AREA REQUIRED

25 Ft^2/100 Gallons/Day

TEST NO. 4

DEPTH 42 in.

SOIL TYPE

Sands

DESIGN RATE 11.11 MIN/INCH

No.	Time	Inch drop
1	25	10.9
2	25	8.0
3	10	4.9
4	10	4.1
5	10	2.5
6	10	3.7
7	10	1.3
8	10	.9

MINIMUM AREA REQUIRED

30 Ft^2/100 Gallons/Day

DESIGN RATE

11.11 MIN/INCH

MINIMUM AREA REQUIRED

30 Ft^2/100 Gallons/Day

PROJECT 88-2694 BORING LOG

EXPLORATORY BORE
SOIL PROFILE DATA

DATE 2/27/88

FT	GS	DESCRIPTION
	SP	TANNISH BROWN SANDS, FINE TO MED. GRAIN, OCCASIONAL COBBLE AND SMALL GRAVELS.
		DRY AND LOOSE
5		
	SP	TANNISH BROWN TO MED. BROWN SANDS, FINE TO MED GRAIN, OCCASIONAL SMALL TO MEDIUM COBBLE, FIRM AND DRY.
10		
		DRY..
15		EOB. NO GROUNDWATER ENCOUNTERED
20		

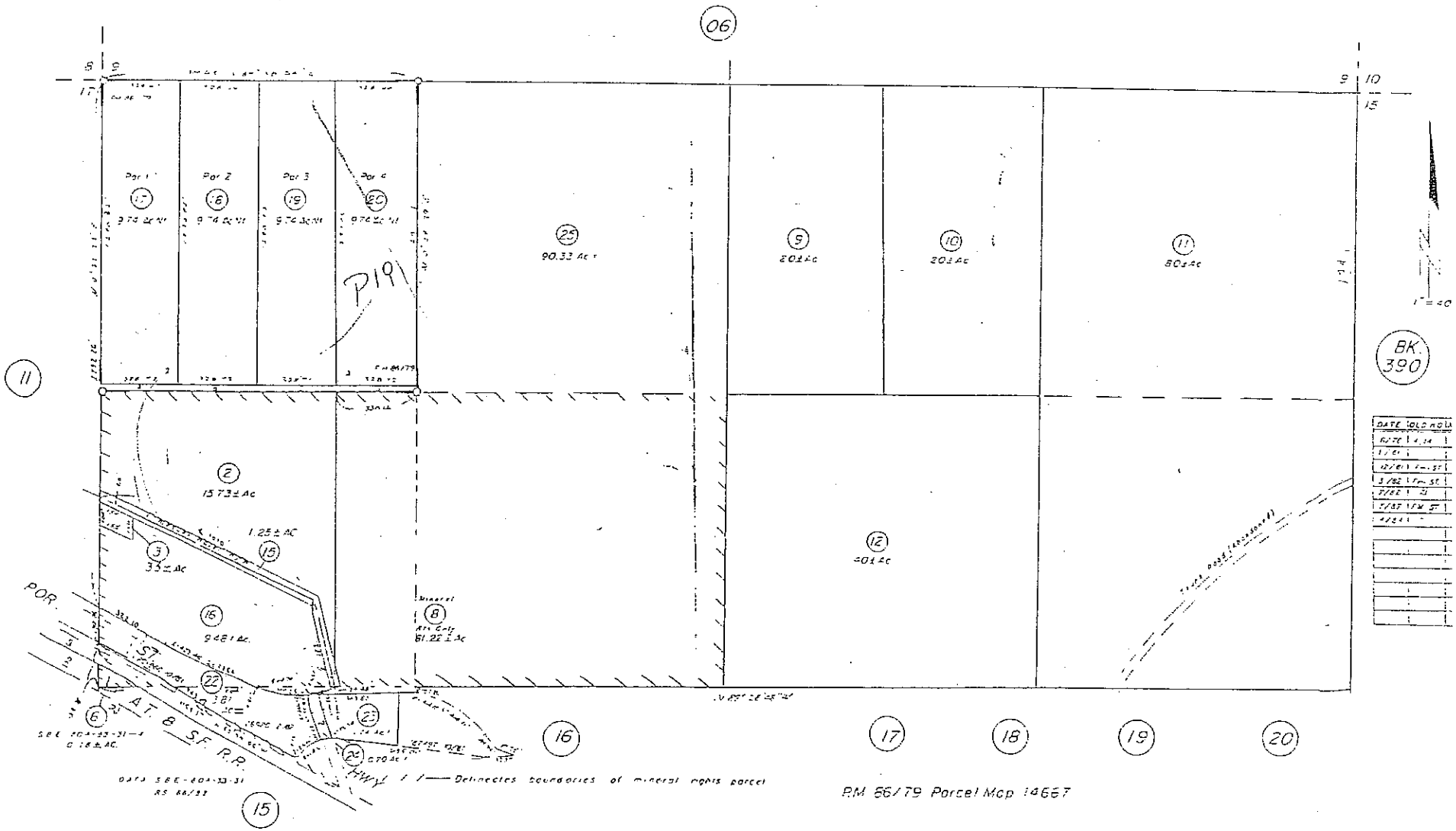
American/Pacific Soils Labs, Inc.

N 1/2 SEC. 16, T5S, R5W

TRA 6530

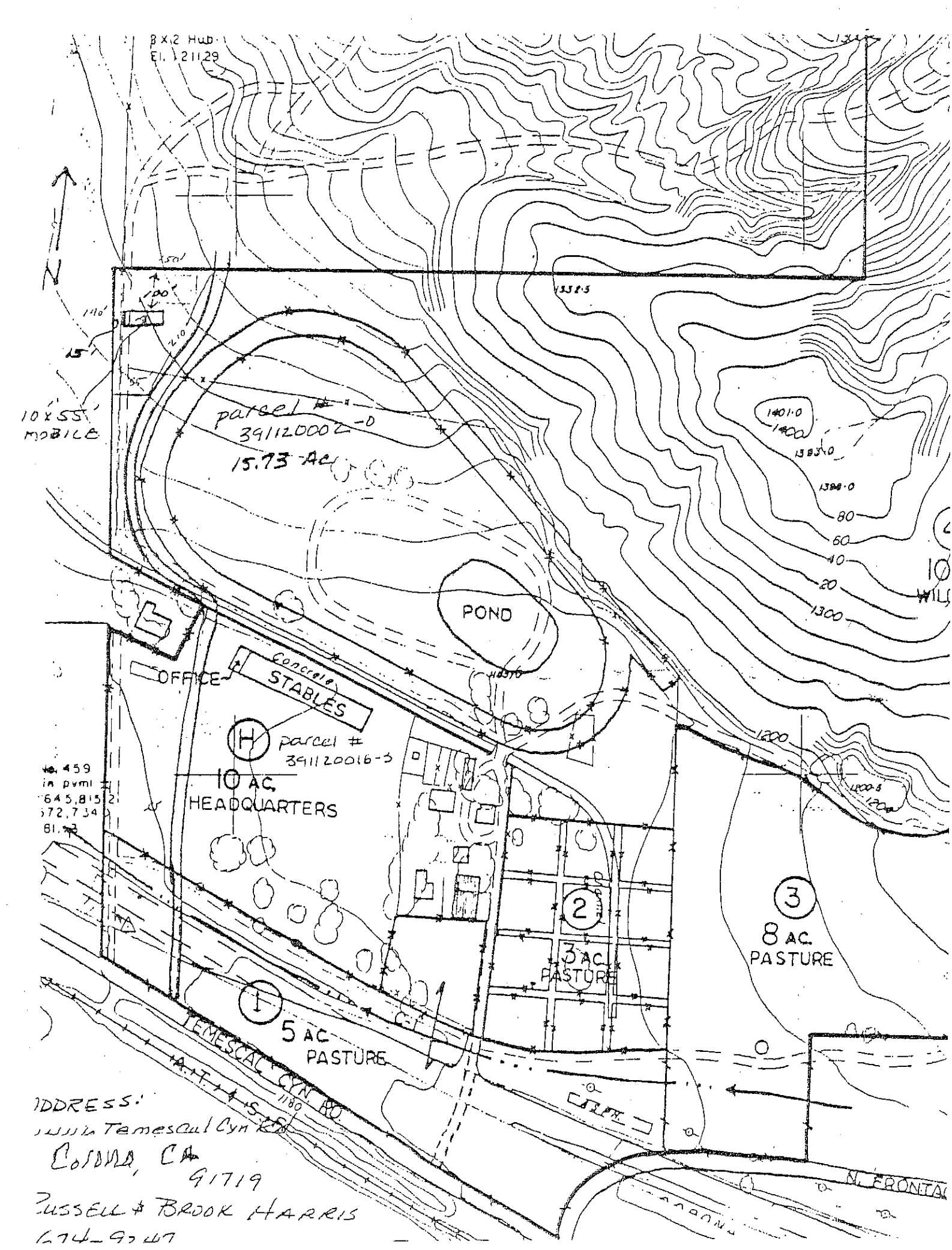
18-4

391-12

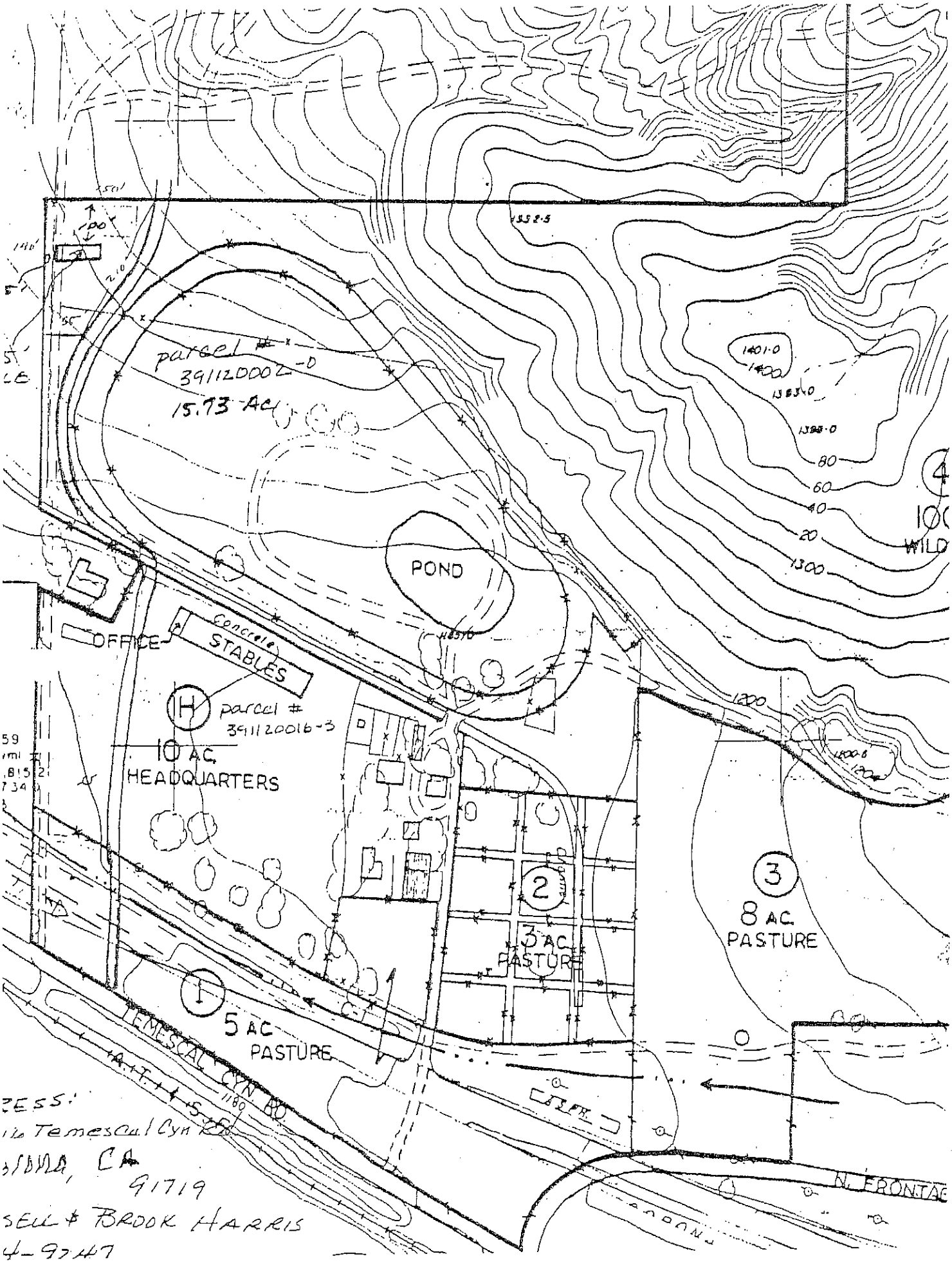


ASSESSOR'S MAP BK 391 PG 12
RIVERSIDE COUNTY, CALIF.

JUL 1973

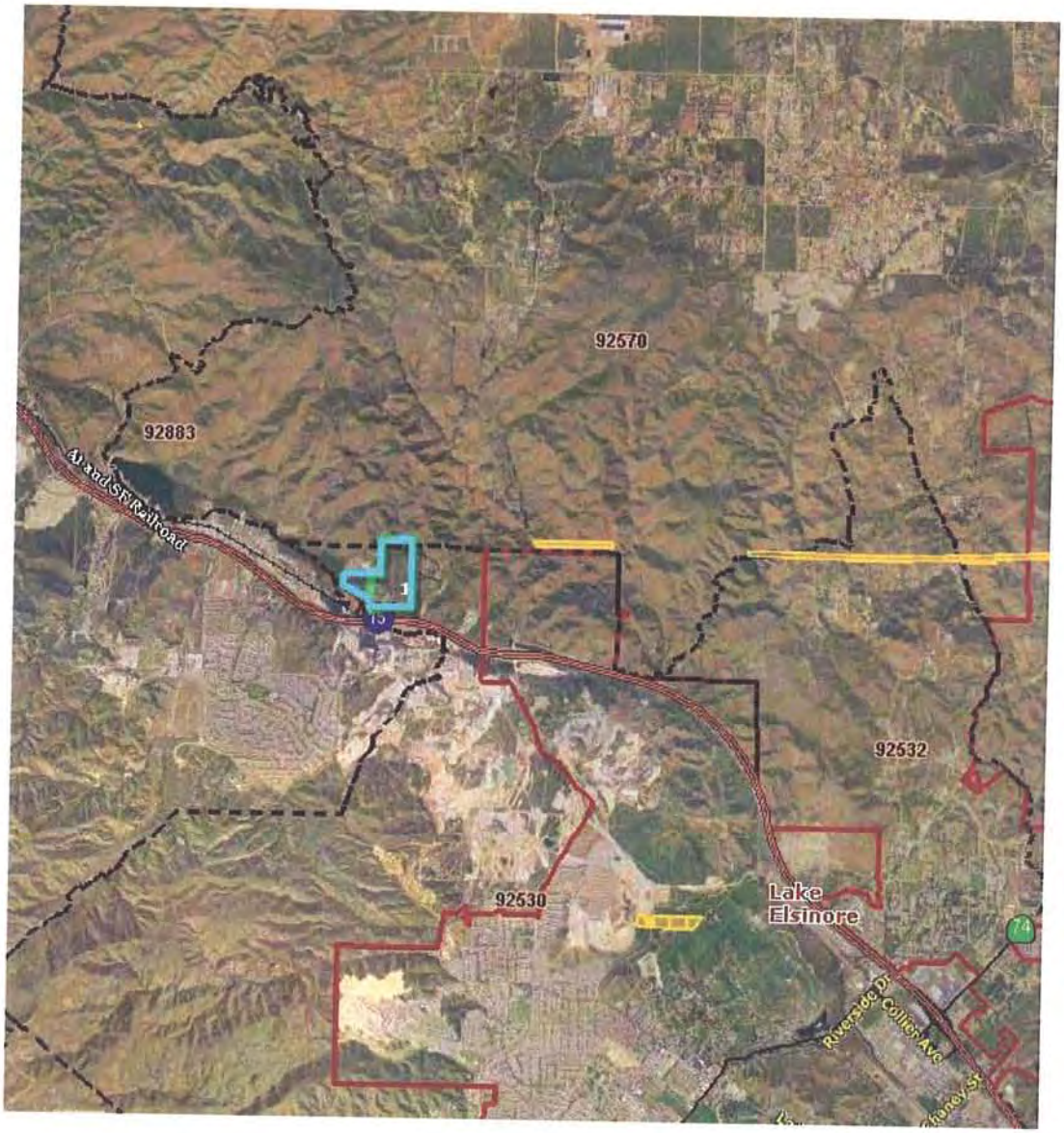


ADDRESS:
Temescal Cyn Rd
Corona, CA
91719
Russell & Brook Harris
674-9407



ESS:
Temescal Cyn Rd
SIDA, CA
91719
SELL & BROOK HARRIS
4-97-47

PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT: RECORDS SEARCH



Proposed Alberhill Substation
Lake Elsinore, California

July 2009

Prepared by: SCE Environmental Engineering

JULY 17, 2009

MS. ERIKA WILDER
CORPORATE ENVIRONMENT, HEALTH & SAFETY

SUBJECT: RECORDS SEARCH: ALBERHILL SUBSTATION
14116 TEMESCAL CANYON ROAD
LAKE ELSINORE, CA 92530

Per your request on June 28, 2009, Environmental Engineering (EE) has performed a limited records search assessment for the proposed Alberhill property in Lake Elsinore, California. The following records were assessed:

- Flood zone map from the Federal Emergency Management Agency (FEMA) website
- Oil well map from the Department of Oil, Gas & Geothermal Resources (DOGGR) website
- Environmental FirstSearch Area Report
- Envirostor & GeoTracker databases from the Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) website, respectively

The available public records do not show any potential environmental issues that would preclude Southern California Edison (SCE) from using the property for its future substation. However, this is only a preliminary assessment. Should SCE decide to acquire the property, a more thorough Phase I environmental site assessment must be conducted prior to acquisition.

Specific findings of this records search are described below.

Site Description
The subject property is located in the City of Lake Elsinore, County of Riverside, within Section 16 of Township 5 South, Range 5 West (Mount Diablo Meridian). The assessor parcel numbers for the property are 391120002 and 391120026. The approximate global positioning system coordinates of the subject property are 33.73446, -117.414011. On a preliminary basis, SCE plans to acquire the property to build the proposed Alberhill Substation. The vicinity map of the property is included in Attachment 1.

Findings

EE reviewed the FEMA flood zone map number 06065CIND1A. The map shows there are no flood hazard zones within the one mile search radius. The extracted flood zone map can be found in Attachment 2. No environmental issues are noted based on the review of the flood zone map. Locally, the site appears to be incised by several small creeks or drainages. These should be considered in the design of the site drainage and features.

EE reviewed the oil well map W1-4 of Cypress District, District 1. The extracted oil well map can be found in Attachment 3. The map shows no oil wells located within 1 mile of the subject property. Based on review of the oil, gas and geothermal map no oil, gas or geothermal activity should have any significant environmental impact on the property.

EE requested a radius search for the property from Environmental FirstSearch on June 8, 2009. The search found a total of 90 non-geocoded sites that have Lake Elsinore, Corona, Perris as the city or 92530 as the zip code. There were 5 records from the Resource Conservation and Recovery Information System Generators (RCRAGN) database; 22 from the Emergency Response Notification System (ERNS) database; 3 records from Tribal Lands; 11 records from state sites; 2 records from the California Regional Water Quality Control Board's spill database (State Spills 90); 5 records from the Solid Water Landfill (SWL) database; 1 record from the Leaking Underground Storage Tank (LUST) database; 2 records from the Underground Storage Tank (UST) databases from the local Certified Unified Program Agency and Participating Agencies in the State of California; 25 records of State Permits; 13 other records; and 1 from voluntary cleanup program (VCP) were found. The complete radius search can be found in Attachment 4.

Filtering Method:
Since these 90 records are not geocoded, EE manually located, via Google Earth, sites that have valid addresses. EE summarized the complete records in Table 1 – Summary of Radius Search. All duplicate records were highlighted and eliminated from the evaluation. EE referenced the All Appropriate Inquiry (AAI) and American Society of Testing and Materials (ASTM) 1527-05 standards for search distances. For databases with no recommended search distance, a one mile buffer radius was used. Sites that were determined to be located farther than the reference search distance were considered to have low potential environmental impact risk and eliminated from the evaluation. The AAI and ASTM 1527-05 reference search distance for ERNS database is on the property only. Therefore, railroad and highway related incidents from the ERNS database were also eliminated from the evaluation.

Using the described filtering method above, there are 6 sites remaining to be evaluated. EE reviewed the available information for these sites and believe they do not pose significant environmental impact to the subject property. The breakdown and evaluation of the remaining records are of follows:

ERNS database (1 record) - reference search distance: property only
- Homestead Land Devel (C. Taylor)

The search provides that 4,000 gallons of diesel oil was spilled into the San Janciento River in 1998. Since this incident did not occurred on the property and the property is not located near any river, it is not considered to have a significant environmental impact on the subject site.

State (1 permit) - reference search distance: no reference search distance
- LEUSD M&O Dept.

This record indicates that Lake Elsinore Unified School District is listed in the DTSC's Hazardous Waste Tracking System database as a hazardous was generator. Since the site is not on the subject property, it is not considered an environmental concern.

State Spills (1 record)-reference search distance: ½ mile

- Horsethief Canyon Ranch

EE searched the GeoTracker database and found two records for the Horsethief Canyon Ranch. One case has a closed status as of April 1989 and is located near Old Temascal Road. The other case is open since 1965 and has no information attached. It is located near Wollen Road, south of Highway 74. In both cases, the sites are more than six miles away from the subject property. Therefore, they are not considered to be environmental concerns.

SWL database (1 record) – reference search distance: ½ mile

-Landfill, Elsinore

EE searched the California Integrated Waste Management Board database and found that Elsinore Sanitary Landfill site is located on 2250 Franklin Street, which is more than 7 miles away from the subject property. Therefore, it is not considered as an environmental concern.

Tribal Land database (1 record) – no reference search distance

- Bureau of Indian Affairs

Through researching the LandVision online service, EE determined the subject property is not located on any tribal land. No additional information is provided by the FirstSearch report.

UST database (1 record) – reference search distance: adjoining properties

- Elsinore (District 8)

Even though there is no sufficient address provided for the property, EE does not consider the site as an environmental concern because the GeoTracker database does not show any nearby UST or LUST other than the one mentioned below.

EE also reviewed the DTSC's Envirostor and SWRCB's GeoTracker online databases for sites located within 1 mile radius of the subject property. One LUST record was found. The site is identified as Humble Transport Company and is located on Temescal Canyon Road, north of Freeway 15. It has a case-closed status since August 1986. Therefore, EE does not consider it to have a significant environmental impact on the subject property.

Please contact me at PAX 23074 should you have any questions about this records search.

Phuong K. Tran, P.E.
Environmental Engineer

cc: (w/o attachment)
M. Passarini
R. Valentine

TABLE 1

Table 1. Summary of Area Search
Alberhill Substation, Lake Elsinore, CA 92530

Database	AAI Required or ASTM 1527-05 Recommended Search Distance	Site Name	Address	Distance form Subject Property (mile)	Is the site located within the required or recommended	
ERNS	Property only	418665/Highway related	Palm and Ryan Sts	HWY	No	
ERNS	Property only	N/A	Lake st. north if I-15	>1.4	No	
ERNS	Property only	N/A	On Riendeer place, 1/4 mile	>9	No	
ERNS	Property only	N/A	32385 Blackwell St., Lakeland Villla CA 92530	2	No	
ERNS	Property only	N/A	Corydont Palomar	HWY	No	
ERNS	Property only	N/A	1 mile north of Collier and Lake Elsinore	>3.8	No	
ERNS	Property only	N/A	Nichols rd. E of I-15	HWY	No	
ERNS	Property only	N/A	Travel Lodge RM 221, 31610	8.4	No	
ERNS	Property only	N/A	HWY 74 Hemmerick	HWY	No	
ERNS	Property only	N/A	1/4 Mile W. of Junction	>6.8	No	
ERNS	Property only	N/A	Ellie way at El Torro Rd	4.9	No	
ERNS	Property only	N/A	El Saiso truck trails and T	HWY	No	
ERNS	Property only	N/A	NB Riverside 15 Bundy Canyon	11	No	
ERNS	Property only	Homstead Land Devel (C.Taylor)	In San Janciento River	Unknown	N/A	
ERNS	Property only	EPMAR	HWY 74 2 mi west of Grand A	>3	No	
ERNS	Property only	Elsinore Valley Water District	Lakeshore Drive	6	No	
ERNS	Property only	N/A	28460 Yucca RD	5.2	No	
ERNS	Property only	N/A	21140 B. Vine st.	9.9	No	
ERNS	Property only	N/A	212111/2 Penny lane	>5.2	No	
ERNS	Property only	N/A	21631 Maple	9.7	No	
ERNS	Property only	N/A	23500 Holland Cross off Cot	11	No	
ERNS	Property only	Coca-Cola Co.	N. bound lane of I-15 Railr	HWY	No	
LUST	1/2 mile	Arco 1250	403 D st Perris CA 92570	11	No	
Other	1 mile	Sycamore Creek Elementary	Temescal Canyon/ Maitri rd	3.2	No	
Other	1 mile	A Lua Wood Recycling	18938 Mermack rd	5.4	No	
Other	1 mile	Synagro Composting of Calif. Inc	10490 Dawson Caynon Rd	3.9	No	
Other	1 mile	Elsinore High School	21800 Canyon Dr	5.7	No	
Other	1 mile	Z Best Body and Paint	18357 Pasadena	5.2	No	
Other	1 mile	Primos Auto Repair	29350 Hunco Wy	5.3	No	
Other	1 mile	Ortega High School/ Alternative Edu	Chaney St	>6	No	
Other	1 mile	International Auto Crafters	29385 Hunco Wy	5.3	No	
Other	1 mile	Elsinore USD (Transportation)	21641 Bundy Cyn Rd	11	No	
Other	1 mile	Elsinore USD (Grounds Shop)	Lewis st and Graham Ave	6.3	No	
Other	1 mile	Elsinore High School No.4	Grand Avenue/ Riverside Dr	5.3	No	
Other	1 mile	Elsinore Elementary School Annex Pn.	Langstaff St/Poe Str	6.7	No	
Other	1 mile	Temescal Canyon Elementary	Claystone Ave/ Nickellaus Corona	5.9	No	
Permits	N/A	Karhay LLC DBA Lake Elsinore Ford	1358 Cambell St	8.7	No	
Permits	N/A	Electrical Services Corporation	18550 Minthorn St	6.3	No	
Permits	N/A	Evolution Machine	18570 Pasadena St	5.3	No	
Permits	N/A	Firestone Store 2238	31748 Mission Trail Rd	8.7	No	
Permits	N/A	Master Fab Inc	9210 Stellar Ct, Corona	6.2	No	
Permits	N/A	Fusion Display and Design Inc	29380 Hunco Way	5.3	No	
Permits	N/A	The Retreat Golf and Country Club	8007 Soft Winds Dr, corona	7.1	No	

Printed 7/16/2009

Table 1. Summary of Area Search
Alberhill Substation, Lake Elsinore, CA 92530

Permits	N/A	International Auto Crafters II	29385 Hunco Wy	5.3	No	
Permits	N/A	Trilogy Golf Cllub	24400 Trilogy Pkwy, Riverside	5.4	No	
Permits	N/A	Vons Fuel 2818	11810 Palma Rd, Corona	1.5	No	
Permits	N/A	Slenna Ridge	8239 Sanctuary Dr, corona	5.4	No	
Permits	N/A	Spectra color Inc.	9116 Stellar Ct, Corona	6.2	No	
Permits	N/A	The Links Summerly	18750 Malaga Rd	9	No	
Permits	N/A	Synagro west	10490 Dawson Caynon Rd	4.2	No	
Permits	N/A	EagleGlen Mobil	2261 Eagle Glen Pkwy	8.3	No	
Permits	N/A	Skydive Elsinore, Inc	20701 Elsinore, Inc	9.2	No	
Permits	N/A	Primos Auto Repair	29350 Hunco Wy Ste C			
Permits	N/A	Mountianview Animal Hospital	151 Railroad Canyon Rd South	8.6	No	
Permits	N/A	Ryder	10490 Dawson Caynon Rd	3.8	No	
Permits	N/A	Lumber City Corp DBA California Do	32241 Mission Trail RD	9	No	
Permits	N/A	LEUSD M&O Dept	1401 Education way	Unknown	N/A	
Permits	N/A	Les Auto repair	212 W Ghram Ave	7	No	
Permits	N/A	Lasalle Medical Associates	31762 Mission Trail Rd	8.8	No	
Permits	N/A	Action Custom Texturing Inc	32450 Corydon St	10.5	No	
Permits	N/A	Dos Lagos Golf Course	4515 Temescal Canyon Rd	3.3	No	
RCRAGN	Adjoining Property	Lake Chevrolet	31201 Auto Center Dr	8.5	No	
RCRAGN	Adjoining Property	North Orange Coast Painting	32054 Poppy Wy	10.6	No	
RCRAGN	Adjoining Property	Home Depot USA Inc. 8988	13282 Collier Ave	5.2	No	
RCRAGN	Adjoining Property	Home Depot No HD8988	18282 Collier Ave	5.3	No	
RCRAGN	Adjoining Property	Wal-Mart 2077	31700 Grape Street	5.7	No	
Spills	1/2 mile	Horsethief Canyon Ranch	N/A	Unknown	N/A	
Spills	1/2 mile	Horsethief Canyon Ranch	N/A			
State	1 mile	Java Lanes Bowling Alley	3738/3800 east Pacific Coast	42	No	
State	1 mile	Alberhill Ranch Elementary School	Nichols Road/ Lake Street	3.8	No	
State	1 mile	Elsinore Elementary School Annex Pn.				
State	1 mile	Boulder Springs Elementary School	Martin St/ Carpinus Dr	9.6	No	
State	1 mile	Mccanna Ranch School	Main St/ Rider St	7.8	No	
State	1 mile	Monument Ranch Site	Gotez Rd/ Ethanac Rd	11	No	
State	1 mile	Railroad Elementary School	A street/ Alpine Dr	10.7	No	
State	1 mile	Wilson/Nuevo Elementary	Wilson Avenue/ Nuevo Road	12.5	No	
State	1 mile	Sycamore Creek Elementary	Temescal Cayon/ Maitri Road			
State	1 mile	Temescal Canyon Elementary	Claystone Ave/ Nickellaus Corona			
State	1 mile	Ortega High School/ Alternative Edu	Chaney St	5.9	No	
SWL	1/2 mile	Landfill, Elsinore	Lake Elsinore	Unknown	N/A	
SWL	1/2 mile	City of Perris Illegal Dump site	West end of 11th St, perris	16	No	
SWL	1/2 mile	Greenwaste, Perris	3202 Goetz Rd.	11	No	
SWL	1/2 mile	Weirick road Illegal dump	21550 Temescal Canyon Rd.	6.9	No	
SWL	1/2 mile	Corona Clay Company	Dawson Rd and Temescal Canyon Rd	4.3	No	
Triballand	N/A	Bureau of Indian Affairs Contact Information	Unknown	Unknown	N/A	
Triballand	N/A	Bureau of Indian Affairs Contact Information	Unknown			
Triballand	N/A	Bureau of Indian Affairs Contact Information	Unknown			
UST	Adjoining Property	Elsinore (District 8)	Lake Elsinore	Unknown	N/A	
UST	Adjoining Property	EVMWD/Wastewater Plant	13200 Shotgun Trl	0.6	No	
VCP	1/2 mile	So Cal Gas/ Elsinore MGP	CNR Riley Flint Spring	6.6	No	

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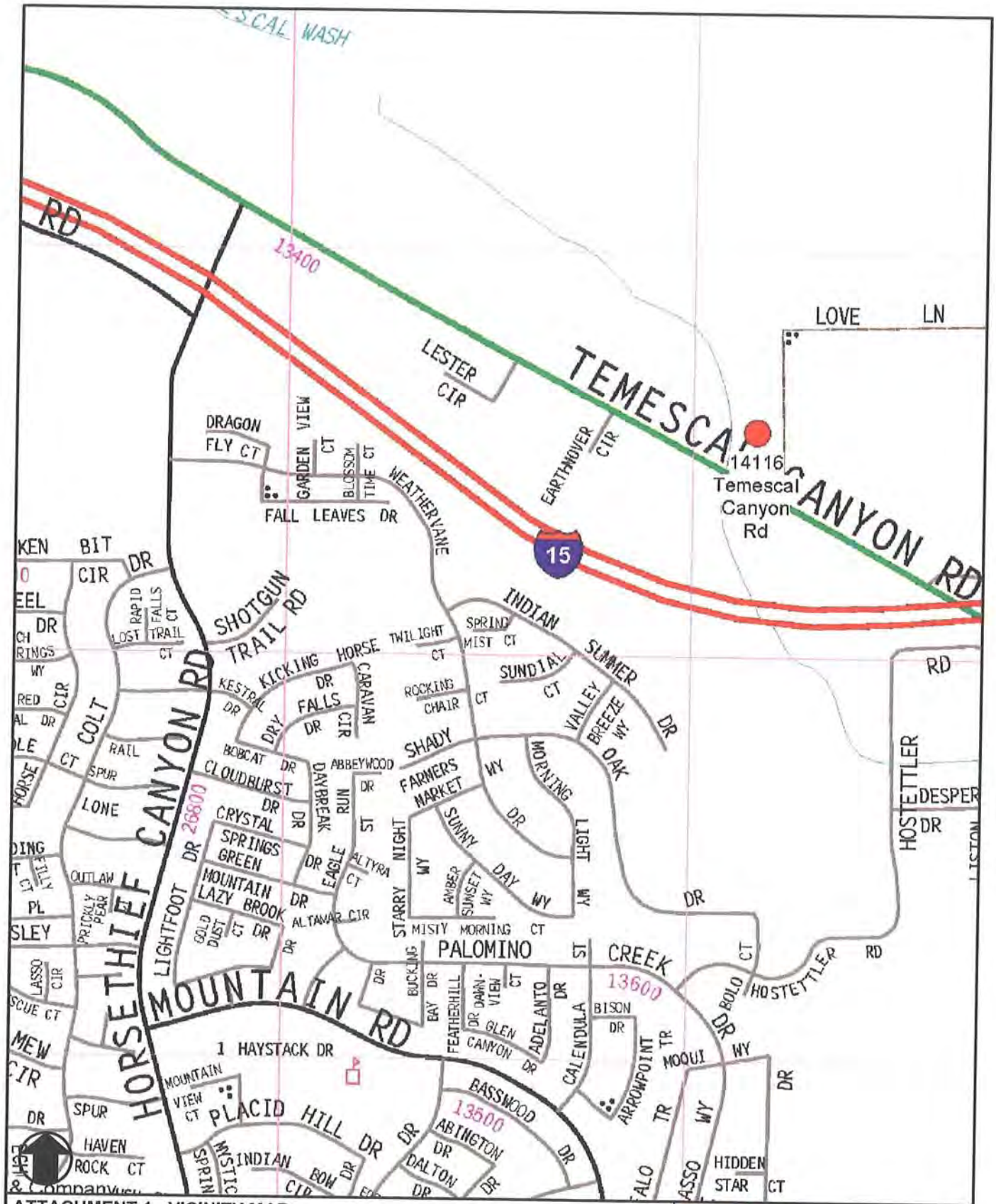
ATTACHMENT 1



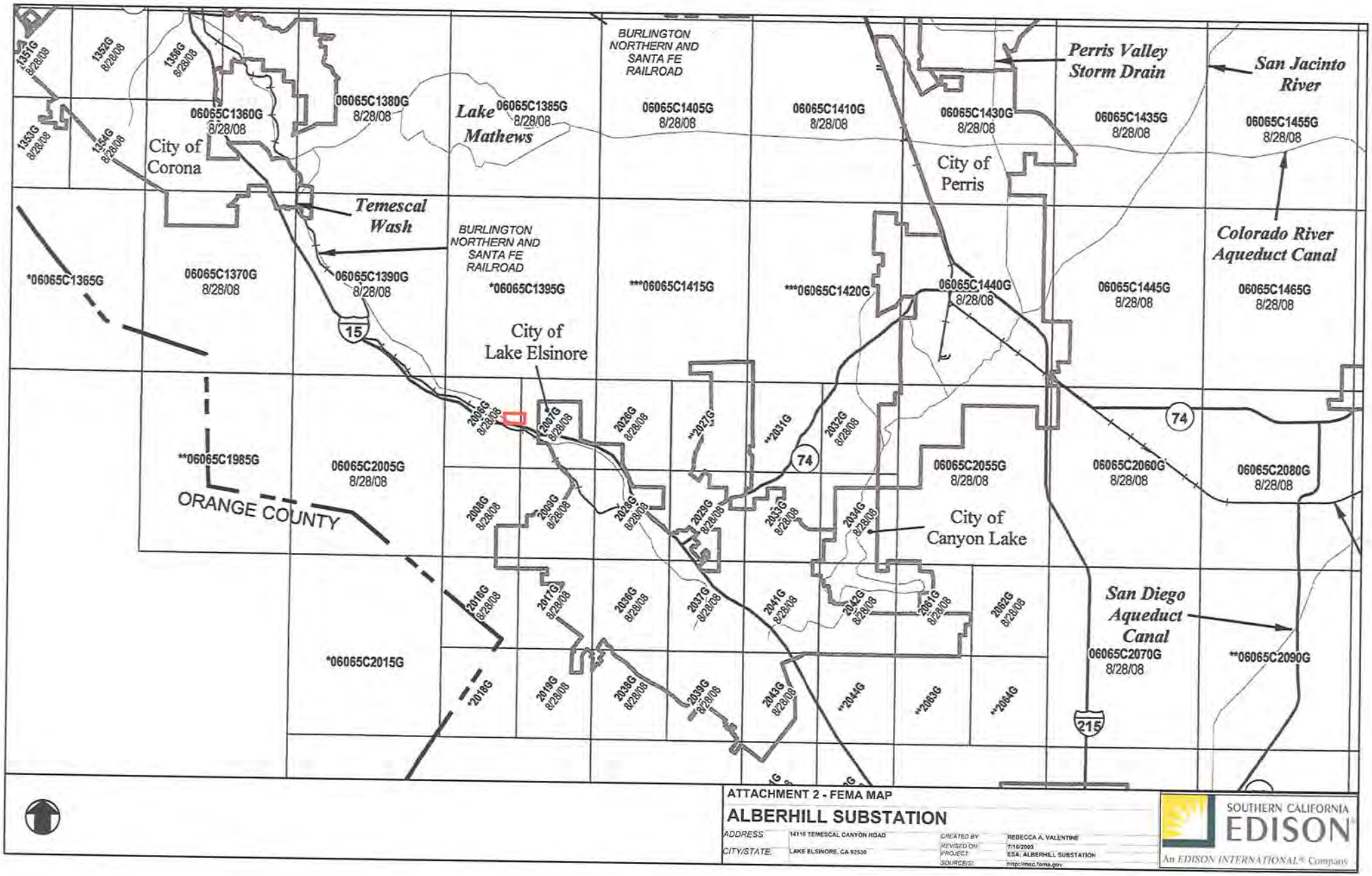
ATTACHMENT 1 - VICINITY MAP

ALBERHILL SUBSTATION

ADDRESS:	14116 TEMESCAL CANYON ROAD	CREATED BY:	REBECCA A. VALENTINE
		REVISED ON:	7/16/2009
CITY/STATE:	LAKE ELSINORE, CA 92530	PROJECT:	ESA: ALBERHILL SUBSTATION
		SOURCE(S):	THOMAS GUIDE: RIVERSIDE

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

ATTACHMENT 2



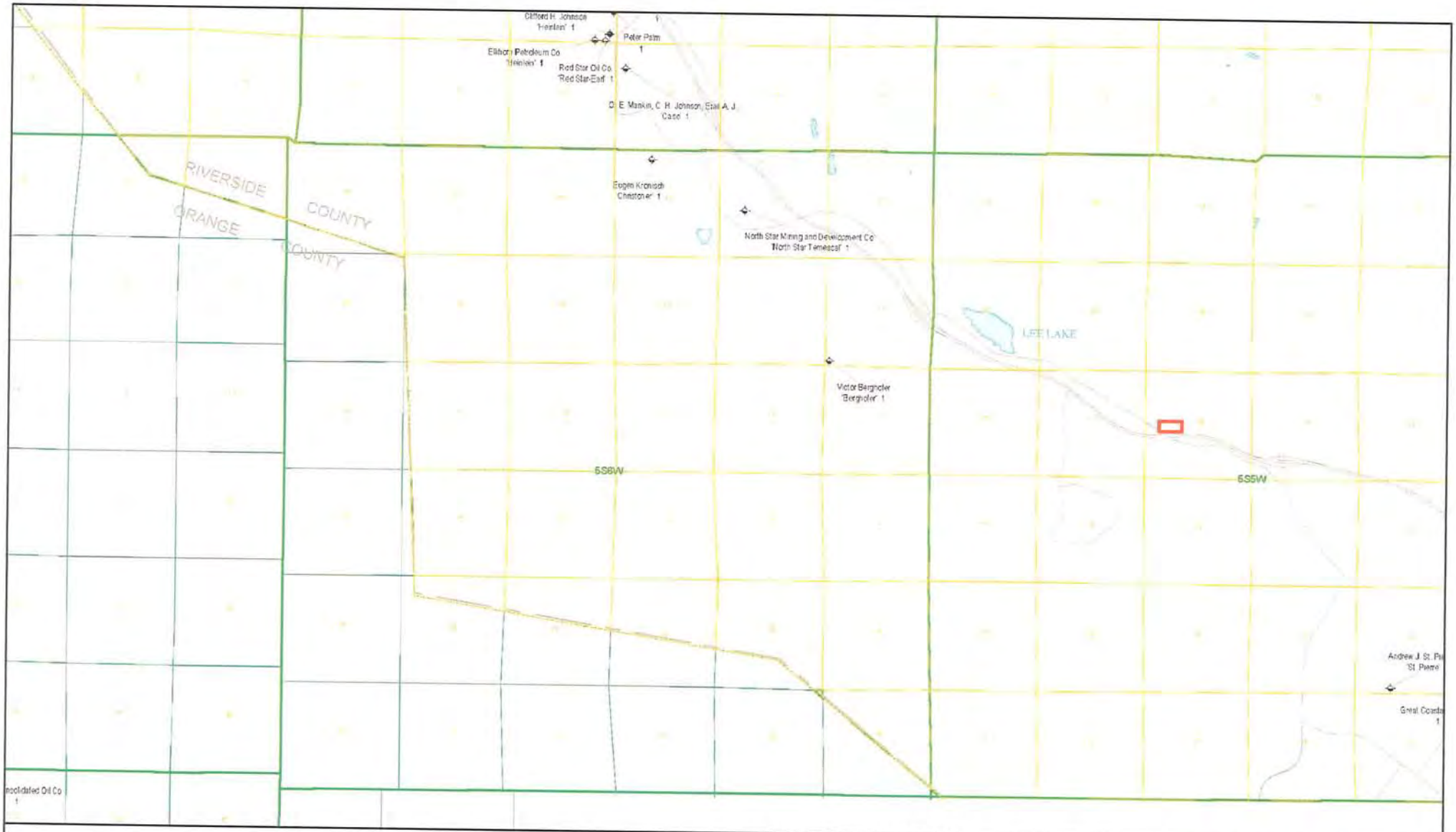
ATTACHMENT 2 - FEMA MAP

ALBERHILL SUBSTATION

ADDRESS	14116 TEMESCAL CANYON ROAD	CREATED BY	REBECCA A. VALENTINE
CITY/STATE	LAKE ELSINORE, CA 92530	REVISED ON	7/16/2009
		PROJECT	ESA: ALBERHILL SUBSTATION
		SOURCE(S)	http://msc.fema.gov

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

ATTACHMENT 3



ATTACHMENT 3 - DOGGR MAP

ALBERHILL SUBSTATION

ADDRESS:	14116 TEMESCAL CANYON ROAD	CREATED BY:	REBECCA A. VALENTINE
CITY/STATE:	LAKE ELSINORE, CA 92530	REVISED ON:	7/16/2009
		PROJECT:	ESA: ALBERHILL SUBSTATION
		SOURCE(S):	ftp://ftp.conserv.ca.gov/public/maps/dist/wt-4/map1-4.pdf

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

ATTACHMENT 4

TRACK > INFO SERVICES, LLC

Environmental FirstSearch™ Report

Target Property:

14116 TEMESCAL CANYON ROAD

LAKE ELSINORE CA 92530

Job Number: ALBERHILL

PREPARED FOR:

Southern California Edison

2244 Walnut Grove Ave.

Rosemead, CA 91770

06-08-09

Tel: (866) 664-9981 *Fax: (818) 249-4227*

Environmental FirstSearch
Search Summary Report

Target Site: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	04-07-09	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	04-07-09	0.50	0	0	0	0	-	0	0
CERCLIS	Y	01-09-09	0.50	0	0	0	0	-	0	0
NFRAP	Y	01-09-09	0.50	0	0	0	0	-	0	0
RCRA COR ACT	Y	05-13-09	1.00	0	0	0	0	0	0	0
RCRA TSD	Y	05-13-09	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	05-13-09	0.25	0	0	0	-	-	5	5
RCRA NLR	Y	05-13-09	0.12	0	0	-	-	-	0	0
Federal IC / EC	Y	03-02-09	0.25	0	0	0	-	-	0	0
ERNS	Y	03-03-09	0.12	0	0	-	-	-	22	22
Tribal Lands	Y	12-01-05	1.00	0	0	0	0	0	3	3
State/Tribal Sites	Y	01-16-09	1.00	0	0	0	0	0	11	11
State Spills 90	Y	05-22-09	0.12	0	0	-	-	-	2	2
State/Tribal SWL	Y	04-27-09	0.50	0	0	0	0	-	5	5
State/Tribal LUST	Y	04-28-09	0.50	0	0	0	0	-	1	1
State/Tribal UST/AST	Y	05-13-09	0.25	0	0	0	-	-	2	2
State/Tribal EC	Y	NA	0.25	0	0	0	-	-	0	0
State/Tribal IC	Y	05-13-09	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	01-16-09	0.50	0	0	0	0	-	1	1
State/Tribal Brownfields	Y	08-08-07	0.50	0	0	0	0	-	0	0
Floodplains	Y	09-01-98	1.00	0	0	0	0	0	0	0
State Permits	Y	04-16-08	0.25	0	0	0	-	-	25	25
State Other	Y	05-05-09	0.25	0	0	0	-	-	13	13
Oil & Gas Wells	Y	01-08-01	1.00	0	0	0	0	0	0	0
- TOTALS -				0	0	0	0	0	90	90

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although TRACK Info Services uses its best efforts to research the actual location of each site, TRACK Info Services does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of TRACK Info Services's services proceeding are signifying an understanding of TRACK Info Services's searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Site Information Report

Request Date:	06-08-09	**Search Type:**	COORD
Requestor Name:	Phuong K. Tran	**Job Number:**	ALBERHILL
Standard:	ASTM-05		

Target Site: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

Demographics

Sites:	90	**Non-Geocoded:**	90	**Population:**	NA
Radon:	NA				

Site Location

	Degrees (Decimal)	**Degrees (Min/Sec)**		**UTMs**
Longitude:	-117.414011	-117:24:50	**Easting:**	461647.44
Latitude:	33.73446	33:44:4	**Northing:**	3732597.427
			Zone:	11

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel
92570	PERRIS	CA	0.49 NE	Y
92883	CORONA	CA	0.00 --	Y

Services:

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	No	

Environmental FirstSearch
Sites Summary Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

TOTAL: 90 **GEOCODED:** 0 **NON GEOCODED:** 90 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	ERNS	418665/HIGHWAY RELATED	PALM AND RYAN STS LAKE ELSINORE CA 92530	NON GC	
3	ERNS	UNKNOWN 338407/UNKNOWN (NRC)	LAKE ST NORTH OF I-15 LAKE ELSINORE CA 92530	NON GC	
4	ERNS	UNKNOWN 497853/UNKNOWN (EPA REGIONS	ON REINDEER PLACE, 1/4 MILE LAKE ELSINORE CA 92530	NON GC	
5	ERNS	UNKNOWN 497691/UNKNOWN (NRC)	32385 BLACKWELL ST. LAKELAND VILLA CA 92530	NON GC	
6	ERNS	UNKNOWN 334090/HIGHWAY RELATED	CORYDONT PALOMAR LAKE ELSINORE CA 92530	NON GC	
7	ERNS	UNKNOWN 512974/UNKNOWN (NRC)	1 MILE NORTH OF COLLIER AND LAKE ELSINORE CA	NON GC	
8	ERNS	UNKNOWN 334012/HIGHWAY RELATED	NICHOLS RD E OF I-15 LAKE ELSINORE CA	NON GC	
9	ERNS	UNKNOWN 497860/FIXED FACILITY	TRAVEL LODGE RM 221, 31610 LAKE ELSINORE CA 92530	NON GC	
10	ERNS	UNKNOWN(DUMPED) 14679/UNKNOWN	HWY 74 HEMMERICK LAKE ELSINORE CA	NON GC	
11	ERNS	UNKNOWN 486592/UNKNOWN (EPA REGIONS	1/4 MILE W. OF THE JUNCTION LAKE ELSINORE CA 92530	NON GC	
12	ERNS	526204/UNKNOWN (EPA REGIONS	ELLIE WAY AT EL TORRO RD LAKE ELSINORE CA 92530	NON GC	
13	ERNS	UNKNOWN 273537/HIGHWAY RELATED	EL SAISO TRUCK TRAILS AND T LAKE ELSINORE CA	NON GC	
15	ERNS	UNK(DUMPED) 73246/UNKNOWN	NB RIVERSIDE I5 BUNDY CAN LAKE ELSINORE CA	NON GC	
15	ERNS	HOMSTEAD LAND DEVEL.(C.TAYLOR) 74166/UNKNOWN	IN SAN JANCIENTO RIVER LAKE ELSINORE CA	NON GC	
16	ERNS	EPMAR 395679/UNKNOWN	HWY 74 2 MI WEST OF GRAND A LAKE ELSINORE CA	NON GC	
16	ERNS	ELSINORE VALLEY WATER DISTRICT 534028/PIPELINE RELATED	LAKESHORE DRIVE LAKE ELSINORE CA	NON GC	
17	ERNS	UNKNOWN 492953/FIXED FACILITY	28460 YUCCA RD LAKE ELSINORE CA 92530	NON GC	
18	ERNS	UNKNOWN 497616/FIXED FACILITY	21140 B. VINE ST. LAKE ELSINORE CA 92530	NON GC	
19	ERNS	UNKNOWN 497813/FIXED FACILITY	212111/2 PENNY LANE LAKE ELSINORE CA 92530	NON GC	
20	ERNS	UNKNOWN 343393/FIXED FACILITY	21631 MAPLE LAKE ELSINORE CA 92530	NON GC	

Environmental FirstSearch
Sites Summary Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

TOTAL: 90 **GEOCODED:** 0 **NON GEOCODED:** 90 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
21	ERNS	UNKNOWN 525822/UNKNOWN (EPA REGIONS	23500 HOLLAND CROSS OFF COT LAKE ELSINORE CA 92530	NON GC	
22	ERNS	COCA-COLA CO. 162023/HIGHWAY RELATED	N. BOUND LANE OF I-15 RAILR LAKE ELSINORE CA	NON GC	
23	LUST	ARCO 1250 T0606572843/OPEN - SITE ASSESSME	403 D ST PERRIS CA 92570	NON GC	
26	OTHER	SYCAMORE CREEK ELEMENTARY CAL33010097/NO FURTHER ACTION	TEMESCAL CANYON/MAITRI ROAD CORONA CA 92883	NON GC	
27	OTHER	A LUA WOOD RECYCLING RICOGEN_1377/NOT REPORTED	18938 MERMACK RD LAKE ELSINORE CA 92530	NON GC	
27	OTHER	SYNAGRO COMPOSTING OF CALIF INC. RICOGEN_840/NOT REPORTED	10490 DAWSON CANYON RD CORONA CA 92883	NON GC	
28	OTHER	ELSINORE HIGH SCHOOL RICOGEN_1391/NOT REPORTED	21800 CANYON DR LAKE ELSINORE CA 92530	NON GC	
28	OTHER	Z BEST BODY AND PAINT RICOGEN_1341/NOT REPORTED	18357 PASADENA LAKE ELSINORE CA 92530	NON GC	
29	OTHER	PRIMOS AUTO REPAIR RICOGEN_1364/NOT REPORTED	29350 HUNCO WY LAKE ELSINORE CA 92530	NON GC	
30	OTHER	ORTEGA HIGH SCHOOL/ALTERNATIVE EDU CAL33010008/NO FURTHER ACTION	CHANEY STREET LAKE ELSINORE CA 92530	NON GC	
32	OTHER	INTERNATIONAL AUTO CRAFTERS RICOGEN_1379/NOT REPORTED	29385 HUNCO WY LAKE ELSINORE CA 92530	NON GC	
32	OTHER	ELSINORE USD (TRANSPORTATION) RICOGEN_1374/NOT REPORTED	21641 BUNDY CYN RD LAKE ELSINORE CA 92530	NON GC	
33	OTHER	ELSINORE USD (GROUNDS SHOP) RICOGEN_1387/NOT REPORTED	LEWIS ST and GRAHAM AVE LAKE ELSINORE CA 92530	NON GC	
34	OTHER	ELSINORE HIGH SCHOOL NO. 4 CAL33010016/NO FURTHER ACTION	GRAND AVENUE/RIVERSIDE DRIV LAKE ELSINORE CA 92530	NON GC	
36	OTHER	ELSINORE ELEMENTARY SCHOOL ANNEX CAL33550001/NO FURTHER ACTION	PN. LANGSTAFF STREET/POE STR LAKE ELSINORE CA 92530	NON GC	
37	OTHER	TEMESCAL CANYON ELEMENTARY CAL33010021/NO FURTHER ACTION	CLAYSTONE AVENUE/NICKELLAUS CORONA CA 92883	NON GC	
39	PERMITS	KARHAY LLC DBA LAKE ELSINORE FORD CAL000328366/ACTIVE	1358 CAMBELL ST LAKE ELSINORE CA 92530	NON GC	
39	PERMITS	ELECTRICAL SERVICES CORPORATION CAL000324427/ACTIVE	18550 MINTHORN ST LAKE ELSINORE CA 92530	NON GC	
40	PERMITS	EVOLUTION MACHINE CAL000319879/ACTIVE	18570 PASADENA ST LAKE ELSINORE CA 92530	NON GC	
41	PERMITS	FIRESTONE STORE 2238 CAL000036200/ACTIVE	31748 MISSION TRAIL RD LAKE ELSINORE CA 92530	NON GC	

Environmental FirstSearch
Sites Summary Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

TOTAL: 90 **GEOCODED:** 0 **NON GEOCODED:** 90 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
42	PERMITS	MASTER FAB INC CAL000274143/ACTIVE	9210 STELLAR CT CORONA CA 92883	NON GC	
42	PERMITS	FUSION DISPLAY and DESIGN INC CAL000307740/ACTIVE	29380 HUNCO WAY LAKE ELSINORE CA 92530	NON GC	
43	PERMITS	THE RETREAT GOLF and COUNTRY CLUB CAL000314538/ACTIVE	8007 SOFT WINDS DR CORONA CA 92883	NON GC	
44	PERMITS	INTERNATIONAL AUTO CRAFTERS II CAL000205581/ACTIVE	29385 HUNCO WAY LAKE ELSINORE CA 92530	NON GC	
45	PERMITS	TRILOGY GOLF CLUB CAL000285594/ACTIVE	24400 TRILOGY PKWY RIVERSIDE CA 92883	NON GC	
46	PERMITS	VONS FUEL 2818 CAL000324557/ACTIVE	11810 DE PALMA RD CORONA CA 92883	NON GC	
47	PERMITS	SLENNA RIDGE CAL000297469/ACTIVE	8239 SANCTUARY DR CORONA CA 92883	NON GC	
48	PERMITS	SPECTRA COLOR INC CAL000291667/ACTIVE	9116 STELLAR CT CORONA CA 92883	NON GC	
48	PERMITS	THE LINKS SUMMERLY CAL000314518/INACTIVE	18750 MALAGA RD LAKE ELSINORE CA 92530	NON GC	
49	PERMITS	SYNAGRO WEST CAL000289378/ACTIVE	10490 DAWSON CANYON RD CORONA CA 92883	NON GC	
49	PERMITS	EAGLE GLEN MOBIL CAL000307032/ACTIVE	2261 EAGLE GLEN PKWY CORONA CA 92883	NON GC	
50	PERMITS	SKYDIVE ELSINORE, INC CAL000324858/ACTIVE	20701 ELSINORE, INC. LAKE ELSINORE CA 92530	NON GC	
50	PERMITS	PRIMOS AUTO REPAIR CAL000297569/ACTIVE	29350 HUNCO WAY STE C LAKE ELSINORE CA 92530	NON GC	
51	PERMITS	MOUNTAINVIEW ANIMAL HOSPITAL CAL000106543/ACTIVE	151 RAILROAD CANYON RD SOUT LAKE ELSINORE CA 92530	NON GC	
52	PERMITS	RYDER CAL000303622/ACTIVE	10490 DAWSON CANYON RD CORONA CA 92883	NON GC	
53	PERMITS	LUMBER CITY CORP DBA CALIFORNIA DO CAL000256710/ACTIVE	32241 MISSION TRAIL RD LAKE ELSINORE CA 92530	NON GC	
54	PERMITS	LEUSD MandO DEPT CAL000280373/ACTIVE	1401 EDUCATION WAY LAKE ELSINORE CA 92530	NON GC	
54	PERMITS	LES AUTO REPAIR CAL000269593/ACTIVE	212 GHRAM AVE LAKE ELSINORE CA 92530	NON GC	
55	PERMITS	LASALLE MEDICAL ASSOCIATES CAL000283085/ACTIVE	31762 MISSION TRAIL RD F LAKE ELSINORE CA 92530	NON GC	
56	PERMITS	ACTION CUSTOM TEXTURING INC CAL000317187/ACTIVE	32450 CORYDON ST LAKE ELSINORE CA 92530	NON GC	

Environmental FirstSearch
Sites Summary Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

TOTAL: 90 **GEOCODED:** 0 **NON GEOCODED:** 90 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
56	PERMITS	DOS LAGOS GOLF COURSE CAL000298905/ACTIVE	4515 TEMESCAL CANYON RD CORONA CA 92883	NON GC	
57	RCRAGN	LAKE CHEVROLET CAR000169680/SGN	31201 AUTO CENTER DR LAKE ELSINORE CA 92530	NON GC	
58	RCRAGN	NORTH ORANGE COAST PAINTING CAR000120972/SGN	32054 POPPY WAY LAKE ELSINORE CA 92530	NON GC	
59	RCRAGN	HOME DEPOT USA INC 8988 CAR000170894/SGN	13282 COLLIER AVE LAKE ELSINORE CA 92530	NON GC	
60	RCRAGN	HOME DEPOT NO HD8988 CAR000175216/SGN	18282 COLLIER AVE LAKE ELSINORE CA 92530	NON GC	
61	RCRAGN	WAL-MART 2077 CAL000116535/LGN	31700 GRAPE STREET LAKE ELSINORE CA 92530	NON GC	
61	SPILLS	HORSETHIEF CANYON RANCH SLC8_171/ADDITIONAL CHARACTER	N/A LAKE ELSINORE CA	NON GC	
62	SPILLS	HORSETHIEF CANYON RANCH G_SLT8R1374162/OPEN	N/A LAKE ELSINORE CA	NON GC	
63	STATE	JAVA LANES BOWLING ALLEY CAL19130111/INACTIVE - NEEDS EVA	3738/3800 EAST PACIFIC COAS LONG BEACH CA 92570	NON GC	
65	STATE	ALBERHILL RANCH ELEMENTARY SCHOOL CAL60000306/ACTIVE	NICHOLS ROAD/LAKE STREET LAKE ELSINORE CA 92530	NON GC	
67	STATE	ELSINORE ELEMENTARY SCHOOL ANNEX CAL33550001/NO FURTHER ACTION	PN. LANGSTAFF STREET/POE STR LAKE ELSINORE CA 92530	NON GC	
68	STATE	BOULDER SPRINGS ELEMENTARY SCHOOL CAL33010086/NO ACTION - FOR CALM	MARTIN STREET/CARPINUS DRIV GLEN VALLEY CA 92570	NON GC	
69	STATE	MCCANNA RANCH SCHOOL CAL60000048/INACTIVE - ACTION RE	MAIN ST. / RIDER ST. PERRIS CA 92570	NON GC	
70	STATE	MONUMENT RANCH SITE CAL70000024/NO FURTHER ACTION	GOETZ ROAD / ETHANAC ROAD PERRIS CA 92570	NON GC	
72	STATE	RAILROAD ELEMENTARY SCHOOL CAL33010019/NO FURTHER ACTION	A STREET/ALPINE DRIVE PERRIS CA 92570	NON GC	
74	STATE	WILSON/NUEVO ELEMENTARY CAL33010018/INACTIVE - NEEDS EVA	WILSON AVENUE/NUEVO ROAD PERRIS CA 92570	NON GC	
76	STATE	SYCAMORE CREEK ELEMENTARY CAL33010097/NO FURTHER ACTION	TEMESCAL CANYON/MAITRI ROAD CORONA CA 92883	NON GC	
77	STATE	TEMESCAL CANYON ELEMENTARY CAL33010021/NO FURTHER ACTION	CLAYSTONE AVENUE/NICKELLAUS CORONA CA 92883	NON GC	
79	STATE	ORTEGA HIGH SCHOOL/ALTERNATIVE EDU CAL33010008/NO FURTHER ACTION	CHANEY STREET LAKE ELSINORE CA 92530	NON GC	
81	SWL	LANDFILL,ELSINORE-CLOSED WMUD8 330305005/ACTIVE	LAKE ELSINORE CA	NON GC	

Environmental FirstSearch
Sites Summary Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

TOTAL: 90 **GEOCODED:** 0 **NON GEOCODED:** 90 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
83	SWL	CITY OF PERRIS ILLEGAL DUMP SITE SWIS33-AA-0237/CLOSED	WEST END OF 11TH STREET PERRIS CA 92570	NON GC	
84	SWL	GREENWASTE,PERRIS WMUD8 332477001/HISTORICAL	3202 GOETZ RD PERRIS CA 92570	NON GC	
85	SWL	WEIRICK ROAD ILLEGAL DUMP SWIS33-AA-0275/ACTIVE	21550 TEMESCAL CANYON RD. CORONA CA 92883	NON GC	
86	SWL	CORONA CLAY COMPANY SWIS33-AA-0068/CLOSED	DAWSON CANYON RD and TEMESC CORONA CA 92883	NON GC	
87	TRIBALLAND	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-92530	UNKNOWN CA 92530	NON GC	
87	TRIBALLAND	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-92570	UNKNOWN CA 92570	NON GC	
88	TRIBALLAND	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-92883	UNKNOWN CA 92883	NON GC	
88	UST	ELSINORE (DISTRICT 8) AST1713/AST SWRCB REG 8	LAKE ELSINORE CA	NON GC	
89	UST	EVMWD/WASTEWATER PLANT RIVERSIDECO81257	13200 SHOTGUN TR LAKE ELSINORE CA 92530	NON GC	
90	VCP	SO CAL GAS/ELSINORE MGP CAL33490082/CERTIFIED	CNR RILEY FLINT SPRING and ELSINORE CA 92530	NON GC	

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 26 **DIST/DIR:** NON GC **MAP ID:**

NAME:
ADDRESS: PALM AND RYAN STS
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 12/19/94
ID1: 418665
ID2:
STATUS: HIGHWAY RELATED
PHONE:

SPILL INFORMATION

DATE OF SPILL: 12/19/1994 **TIME OF SPILL:** 1555

PRODUCT RELEASED (1): DRUG LAB WASTE
QUANTITY (1): 10
UNITS (1): LBS

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	YES	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CLEANUP BY RIVERSIDE CO DHS
RELEASE DETECTION: ROADWAY INTERSECTION ILLEGAL DUMPING
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 418665 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER:
ADDRESS:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 12 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: LAKE ST NORTH OF I-15
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 8/20/93
ID1: 338407
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 8/20/1993 **TIME OF SPILL:** 1120

PRODUCT RELEASED (1): DRUG LAB WASTE
QUANTITY (1): 75
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: YES **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: UNKNOWN
RELEASE DETECTION: A FIELD METH LAB WSTE DUMPED IN A FIELD, NO LEAKAGE.
MISC. NOTES: 11 Drums: Metals in soil = copper 2000 ppm, zinc 1500 ppm, total CN=4ppm, free cn=1.5 ppm. 1 Drum-Metals in water = copper 61.4 ppb, Zinc 216 ppb CN-ND.

DISCHARGER INFORMATION
DISCHARGER ID: 338407
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 19 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: ON REINDEER PLACE, 1/4 MILE WEST OF ROME HILL ROAD
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 3/31/96
ID1: 497853
ID2:
STATUS: UNKNOWN (EPA REGIONS)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 3/31/1996 **TIME OF SPILL:** 0446

PRODUCT RELEASED (1): DRUG LAB WASTE
QUANTITY (1): 100
UNITS (1): LBS

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	YES	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: C/U BY CODOH
RELEASE DETECTION: ROADWAY DRUG LAB WASTE DUMPED BY UNKNOWN INDIVIDUAL.
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 497853
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:
DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 20 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 32385 BLACKWELL ST.
LAKELAND VILLAGE CA 92530
Riverside
CONTACT:

REV: 3/21/96
ID1: 497691
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 3/21/1996 **TIME OF SPILL:** 1238

PRODUCT RELEASED (1): DRUG WASTE
QUANTITY (1): 2
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: YES **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CONTAINED. COUNTY HEALTH IS DOING C/U
RELEASE DETECTION: ABANDONED STRUCTURE HAD DRUG WASTE FALLING FROM CEILING.
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 497691
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:
DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 21 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: CORYDONT PALOMAR
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 7/29/93
ID1: 334090
ID2:
STATUS: HIGHWAY RELATED
PHONE:

SPILL INFORMATION
DATE OF SPILL: 7/29/1993 **TIME OF SPILL:** 0045

PRODUCT RELEASED (1): HAZ WASTE-DRUG RELATED
QUANTITY (1): 1
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	YES
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: UNKNOWN
RELEASE DETECTION: MOBILE DRUG LAB IN BACK OF CAR
MISC. NOTES: ** PLUGGED UP AND CAUSED TANK TO OVERFLOW

DISCHARGER INFORMATION
DISCHARGER ID: 334090
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 22 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 1 MILE NORTH OF COLLIER AND NICHOLS AVENUE
LAKE ELSINORE CA
Riverside
CONTACT:

REV: 4/13/96
ID1: 512974
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION

DATE OF SPILL: 4/13/1996 **TIME OF SPILL:** 1353

PRODUCT RELEASED (1): METH LAB WASTE
QUANTITY (1): 3
UNITS (1): GAL

PRODUCT RELEASED (2): ACID
QUANTITY (2): 0
UNITS (2): UNK

PRODUCT RELEASED (3): PHOSPHORUS, RED
QUANTITY (3): 0
UNITS (3): UNK

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING: YES **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: C/U BY CODOH
RELEASE DETECTION: ROADWAY ILLEGAL DUMP FOUND BY PASSERBY
MISC. NOTES: Previous Case : 96-3458

DISCHARGER INFORMATION

DISCHARGER ID: 512974 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 23 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: NICHOLS RD E OF I-15
LAKE ELSINORE CA
RIVERSIDE
CONTACT:

REV: 7/28/1993
ID1: 334012
ID2:
STATUS: HIGHWAY RELATED
PHONE:

SPILL INFORMATION
DATE OF SPILL: 7/28/1993 **TIME OF SPILL:** 1247

PRODUCT RELEASED (1): OIL/N.O.S.
QUANTITY (1): 125
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	YES	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: UNKNOWN
RELEASE DETECTION: SIDE OF ROAD ABANDONED DRUMS
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 334012
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 18 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: TRAVEL LODGE RM 221, 31610 CASINO ROAD
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 3/17/96
ID1: 497860
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 3/17/1996 **TIME OF SPILL:** 1815

PRODUCT RELEASED (1): DRUG LAB WASTE
QUANTITY (1): 2
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: YES **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: RIVERSIDE CO HEALTH TO C/U
RELEASE DETECTION: DRUG RAID, NO LEAKAGE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 497860 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 25 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN(DUMPED)
ADDRESS: HWY 74 HEMMERICK
LAKE ELSINORE CA
RIVERSIDE
CONTACT:

REV: 01-04-01
ID1: 14679
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 17 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 1/4 MILE W. OF THE JUNCTION OF FRANKLIN AND CASINO
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 1/1/96
ID1: 486592
ID2:
STATUS: UNKNOWN (EPA REGIONS)
PHONE:

SPILL INFORMATION

DATE OF SPILL: 1/1/1996 **TIME OF SPILL:** 1725

PRODUCT RELEASED (1): TRICHLOROETHANE
QUANTITY (1): 5
UNITS (1): GAL

PRODUCT RELEASED (2): SULFURIC ACID
QUANTITY (2): 40
UNITS (2): GAL

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: YES **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: UNKNOWN
RELEASE DETECTION: UNKNOWN RVSD CO. FIRE WAS DISPATCHED 1725 TO SCENE OF ILLEGAL DUMPING
MISC. NOTES:

DISCHARGER INFORMATION

DISCHARGER ID: 486592 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 27 **DIST/DIR:** NON GC **MAP ID:**

NAME:
ADDRESS: ELLIE WAY AT EL TORRO RD
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 10/7/96
ID1: 526204
ID2:
STATUS: UNKNOWN (EPA REGIONS)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 10/7/1996 **TIME OF SPILL:** 0802

PRODUCT RELEASED (1): DRUG LAB WASTE
QUANTITY (1): 10
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: BULL CREEK,LEADS TO ELSINORE

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	YES	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CO DOH TO C/U
RELEASE DETECTION: FOUND BY SHERIFF ON PATROL
MISC. NOTES: Previous Case : 97-0064 Previous Case : 97-0433

DISCHARGER INFORMATION
DISCHARGER ID: 526204 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER:
ADDRESS:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 11 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: EL SAISO TRUCK TRAILS AND THE NORTH MAIN DIVIDE
LAKE ELSINORE CA
RIVERSIDE
CONTACT:

REV: 6/15/92
ID1: 273537
ID2:
STATUS: HIGHWAY RELATED
PHONE:

SPILL INFORMATION
DATE OF SPILL: 6/15/1992 **TIME OF SPILL:** 1149

PRODUCT RELEASED (1): PESTICIDE
QUANTITY (1): 5
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

SPILL INFORMATION
DATE OF SPILL: 6/15/1992 **TIME OF SPILL:** 1149

PRODUCT RELEASED (1): PESTICIDE
QUANTITY (1): 5
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** YES
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CODOH AND FD TO CLEANUP. NO WATERWAYS AFFECTED
RELEASE DETECTION: ABANDONED 100 GAL TANK FOUND LEAKING

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 11 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: EL SAISO TRUCK TRAILS AND THE NORTH MAIN DIVIDE
LAKE ELSINORE CA
RIVERSIDE
CONTACT:

REV: 6/15/92
ID1: 273537
ID2:
STATUS: HIGHWAY RELATED
PHONE:

MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 273537
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CODOH AND FD TO CLEANUP. NO WATERWAYS AFFECTED
RELEASE DETECTION: ABANDONED 100 GAL TANK FOUND LEAKING
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 273537
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 10 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNK(DUMPED)
ADDRESS: NB RIVERSIDE I5 BUNDY CANYON RAMP
LAKE ELSINORE CA
Riverside
CONTACT:

REV: 01-20-98
ID1: 73246
ID2:
STATUS: UNKNOWN
PHONE:

CERCLIS (Y/N):

MAT: PAINT **QUANT:** 11 GALLONS

LOCATION: NB RIVERSIDE I5 BUNDY CANYON RAMP
CITY: **REPORTED:** 07/12/88

SOURCE: UNKNOWN **MEDIUM:** LAND
(140)1 GAL CONTAINERS DISCV D/ILLEGAL DUMPING/FLO TO LAND (140)1 GAL CONTAINE
CAUSE: UNKNOWN
RS DISC D/ILLEGAL DUMPING/FLO TO LAND

ACT: CALTRANS=CU
BY:

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 9 **DIST/DIR:** NON GC **MAP ID:**

NAME: HOMSTEAD LAND DEVEL.(C.TAYLOR)
ADDRESS: IN SAN JANCIENTO RIVER
LAKE ELSINORE CA
Riverside
CONTACT:

REV: 01-20-98
ID1: 74166
ID2:
STATUS: UNKNOWN
PHONE:

CERCLIS (Y/N):

MAT: OILS: DIESEL **QUANT:** 4000 GALLONS

LOCATION: IN SAN JANCIENTO RIVER
CITY: CORONA CA 91720 **REPORTED:** 10/24/88

SOURCE: UNKNOWN **MEDIUM:** WATER

CAUSE: UNKNOWN

ACT:
BY:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 8 **DIST/DIR:** NON GC **MAP ID:**

NAME: EPMAR
ADDRESS: HWY 74 2 MI WEST OF GRAND AVE
LAKE ELSINORE CA
Riverside
CONTACT:

REV: 01-20-98
ID1: 395679
ID2:
STATUS: UNKNOWN
PHONE:

CERCLIS (Y/N):

MAT: LIQUID EPOXY **QUANT:** 550 GALLONS

LOCATION: HWY 74 2 MI WEST OF GRAND AVE
CITY: SANTA FE SPRINGS CA **REPORTED:** 09/26/94

SOURCE: UNKNOWN **MEDIUM:** LAND
12 55-GAL DRUMS FELL FM TRUCK DURING TRANSIT / 10 DRUMS WERE DAMAGED
CAUSE: UNKNOWN

ACT: CREWS ON SCENE
BY:

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 7 **DIST/DIR:** NON GC **MAP ID:**

NAME: ELSINORE VALLEY WATER DISTRICT
ADDRESS: LAKESHORE DRIVE
LAKE ELSINORE CA
RIVERSIDE
CONTACT:

REV: 1/17/1997
ID1: 534028
ID2:
STATUS: PIPELINE RELATED
PHONE:

SPILL INFORMATION
DATE OF SPILL: 1/17/1997 **TIME OF SPILL:** 1805

PRODUCT RELEASED (1): RAW SEWAGE
QUANTITY (1): 1000
UNITS (1):
CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: YES **TRANS**

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 24 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 28460 YUCCA RD
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 1/17/96
ID1: 492953
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 1/17/1996 **TIME OF SPILL:** 2030

PRODUCT RELEASED (1): HAZ WASTE
QUANTITY (1): 2
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	YES	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: RIVERSIDE HEALTH TO C/U
RELEASE DETECTION: DRUG BUST
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 492953
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 13 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 21140 B. VINE ST.
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 2/23/96
ID1: 497616
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 2/23/1996 **TIME OF SPILL:** 1530

PRODUCT RELEASED (1): DRUG WASTE
QUANTITY (1): 1
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	YES
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	YES	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: DOJ TO SUPERVISE C/U
RELEASE DETECTION: FOUND FRON CITIZEN TIP-2 PEOPLE WERE ARRESTED AND EVACUATED FROM THE PROPERTY. A CHILD WAS ALSO REMOVED FROM THE PROPERTY.
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 497616
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 14 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 212111/2 PENNY LANE
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 3/27/96
IDI: 497813
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 3/27/1996 **TIME OF SPILL:** 1750

PRODUCT RELEASED (1): MISC. DRUG LAB WASTE
QUANTITY (1): 25
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	YES	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	YES
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	YES	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: 3 CIVILIANS DECONTAMINATED
RELEASE DETECTION: RESIDENCE SUSPECTED METH-LAB CONSUMED IN STRUCTURE FIRE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 497813
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 15 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 21631 MAPLE
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 9/29/1993
ID1: 343393
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 9/29/1993 **TIME OF SPILL:** 1345

PRODUCT RELEASED (1): MISC DRUG WASTE
QUANTITY (1): 20
UNITS (1): LBS

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	YES	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CODOH TO SUPERVISE CLEANUP
RELEASE DETECTION: DRUG RAID AND DRUG LAB FOUND
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 343393
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 16 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: 23500 HOLLAND CROSS OFF COTTOWOOD CANYON
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 10-01-99
ID1: 525822
ID2:
STATUS: UNKNOWN (EPA REGIONS)
PHONE:

SPILL INFORMATION
DATE OF SPILL: **TIME OF SPILL:** 1830

PRODUCT RELEASED (1): DRUG LAB WASTE
QUANTITY (1): 10
UNITS (1): LBS

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING:	YES	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: CONTAINED, C/U UNKNOWN
RELEASE DETECTION: DRUG LAB DUMPING OF LAB MATERIALS
MISC. NOTES: Previous Case : 97-0300 Previous Case : 97-0300 Previous Case : 97-0776

DISCHARGER INFORMATION
DISCHARGER ID: 525822
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:
DUN and BRADSTREET :

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

EMERGENCY RESPONSE NOTIFICATION SITE

SEARCH ID: 6 **DIST/DIR:** NON GC **MAP ID:**

NAME: COCA-COLA CO.
ADDRESS: N. BOUND LANE OF I-15 RAILROAD CANYON EXIT
LAKE ELSINORE CA
RIVERSIDE
CONTACT:

REV: 3/13/1990
ID1: 162023
ID2:
STATUS: HIGHWAY RELATED
PHONE:

DETAILS NOT AVAILABLE

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 86 **DIST/DIR:** NON GC **MAP ID:**

NAME: ARCO 1250
ADDRESS: 403 D ST
PERRIS CA 92570
RIVERSIDE
CONTACT:

REV: 04/28/09
ID1: T0606572843
ID2:
STATUS: OPEN - SITE ASSESSMENT
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *RIVERSIDE COUNTY LOP*
REGIONAL BOARD CASE NUMBER:
LOCAL AGENCY: *RIVERSIDE COUNTY LOP*
LOCAL CASE NUMBER: *200319745*
RESPONSIBLE PARTY:
ADDRESS OF RESPONSIBLE PARTY:
SITE OPERATOR:
WATER SYSTEM:

CASE TYPE: *LUST Cleanup Site*
POTENTIAL CONTAMINANTS OF CONCERN: *Gasoline*
POTENTIAL MEDIA AFFECTED: *Aquifer used for drinking water supply*
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *Open - Site Assessment*
STATUS DATE: *2008-03-14 00:00:00*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):
SITE HISTORY (blank if not reported):

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-10-30*
ACTION (blank if not reported): *File review*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2007-08-15*
ACTION (blank if not reported): *Additional Information Workplan*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-02-29*
ACTION (blank if not reported): *Soil and Water Investigation Workplan*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-04-25*
ACTION (blank if not reported): *File review*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-09-09*
ACTION (blank if not reported): *File review*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-10-20*
ACTION (blank if not reported): *File review*

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 86 **DIST/DIR:** NON GC **MAP ID:**

NAME: ARCO 1250
ADDRESS: 403 D ST
PERRIS CA 92570
RIVERSIDE
CONTACT:

REV: 04/28/09
ID1: T0606572843
ID2:
STATUS: OPEN - SITE ASSESSMENT
PHONE:

ACTION TYPE (blank if not reported): *REMEDIATION*
DATE (blank if not reported): *1950-01-01*
ACTION (blank if not reported): *Soil Vapor Extraction w/Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2006-09-13*
ACTION (blank if not reported): *Staff Letter - 091306*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-01-10*
ACTION (blank if not reported): *Staff Letter - 011008*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01*
ACTION (blank if not reported): *Leak Stopped*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01*
ACTION (blank if not reported): *Leak Discovery*

ACTION TYPE (blank if not reported): *Other*
DATE (blank if not reported): *1950-01-01*
ACTION (blank if not reported): *Leak Reported*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2009-04-16*
ACTION (blank if not reported): *Remedial Progress Report*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-08-02*
ACTION (blank if not reported): *File review*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-12-10*
ACTION (blank if not reported): *Technical Correspondence / Assistance / Other*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-01-23*
ACTION (blank if not reported): *Staff Letter - RCDEH012309*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2008-07-31*
ACTION (blank if not reported): *CAP/RAP - Feasibility Study Report*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-06-27*
ACTION (blank if not reported): *Staff Letter - 062707*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-01-28*
ACTION (blank if not reported): *File review*

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 86 **DIST/DIR:** NON GC **MAP ID:**

NAME: ARCO 1250
ADDRESS: 403 D ST
PERRIS CA 92570
RIVERSIDE
CONTACT:

REV: 04/28/09
ID1: T0606572843
ID2:
STATUS: OPEN - SITE ASSESSMENT
PHONE:

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2008-03-14*
ACTION (blank if not reported): *Staff Letter - 031408*

ACTION TYPE (blank if not reported): *RESPONSE*
DATE (blank if not reported): *2007-01-15*
ACTION (blank if not reported): *Monitoring Report - Quarterly*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2007-04-23*
ACTION (blank if not reported): *File review*

ACTION TYPE (blank if not reported): *ENFORCEMENT*
DATE (blank if not reported): *2009-01-26*
ACTION (blank if not reported): *File review*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 81 **DIST/DIR:** NON GC **MAP ID:**

NAME:	SYCAMORE CREEK ELEMENTARY	**REV:**	01/16/09
ADDRESS:	TEMESCAL CANYON/MAITRI ROAD	**ID1:**	CAL33010097
	CORONA CA 92883	**ID2:**	
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2006-05-30*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	*RANA GEORGES*
Supervisor:	*Tawfiq Deek*
Branch:	*Cypress*
Acres:	*11.89*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ORCHARD*
Potential Contaminants:	*NONE SPECIFIED 31000*
Confirmed Contaminants:	*31000*
Potential Media Affected:	*NMA, NMA*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404623-11

33010097

CORONA-NORCO UNIFIED SCHOOL DISTRICT

CORONA-NORCO USD-PROPOSED SYCAMORE ES

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Environmental Oversight Agreement***
Completion Date:	***2005-05-02***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2006-05-30***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2006-05-11***
Comments:	*DTSC sent final approval with no further action determination*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 71 **DIST/DIR:** NON GC **MAP ID:**

NAME: A LUA WOOD RECYCLING
ADDRESS: 18938 MERMACK RD
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 09/06/05
ID1: RICOGEN_1377
ID2:
STATUS: NOT REPORTED
PHONE:

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:
Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

OTHER SITE

SEARCH ID: 82 **DIST/DIR:** NON GC **MAP ID:**

NAME: SYNAGRO COMPOSTING OF CALIF INC.
ADDRESS: 10490 DAWSON CANYON RD
CORONA CA 92883
RIVERSIDE
CONTACT:

REV: 09/06/05
ID1: RICOGEN_840
ID2:
STATUS: NOT REPORTED
PHONE:

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:
Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 73 **DIST/DIR:** NON GC **MAP ID:**

NAME: ELSINORE HIGH SCHOOL
ADDRESS: 21800 CANYON DR
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 09/06/05
ID1: RICOGEN_1391
ID2:
STATUS: NOT REPORTED
PHONE:

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:
Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

OTHER SITE

SEARCH ID: 80 **DIST/DIR:** NON GC **MAP ID:**

NAME: Z BEST BODY AND PAINT
ADDRESS: 18357 PASADENA
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 09/06/05
ID1: RICOGEN_1341
ID2:
STATUS: NOT REPORTED
PHONE:

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:
Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 79 **DIST/DIR:** NON GC **MAP ID:**

NAME: PRIMOS AUTO REPAIR
ADDRESS: 29350 HUNCO WY
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 09/06/05
ID1: RICOGEN_1364
ID2:
STATUS: NOT REPORTED
PHONE:

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:
Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 78 **DIST/DIR:** NON GC **MAP ID:**

NAME: ORTEGA HIGH SCHOOL/ALTERNATIVE EDUCATION
ADDRESS: CHANEY STREET
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 01/16/09
ID1: CAL33010008
ID2:
STATUS: NO FURTHER ACTION
PHONE:

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2000-06-09*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	
Supervisor:	*Mark Malinowski*
Branch:	*Cypress*
Acres:	*10.14*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*30005 30008 30067 30013 30587*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

400811-11 VCA

400787-11 CDE

LAKE ELSINORE UNIFIED SCHOOL DISTRICT

33010008

LAKE ELSINORE USD-ORTEGA HS

LAKE ELSINORE USD-ORTEGA HS/VCA

ORTEGA HIGH SCHOOL

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Other Report***
Completion Date:	***2000-02-14***
Comments:	*Phase I used for background information.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	**** Workplan***
Completion Date:	***2000-03-03***
Comments:	
Area Name:	***PROJECT WIDE***

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 78 **DIST/DIR:** NON GC **MAP ID:**

NAME: ORTEGA HIGH SCHOOL/ALTERNATIVE EDUCATION
ADDRESS: CHANEY STREET
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 01/16/09
ID1: CAL33010008
ID2:
STATUS: NO FURTHER ACTION
PHONE:

Sub- Area Name:
Document Type: *Phase 1*
Completion Date: *1999-10-21*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Cost Recovery Closeout Memo*
Completion Date: *1999-11-17*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Cost Recovery Closeout Memo*
Completion Date: *2003-04-22*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Site Inspections/ Visit*
Completion Date: *2000-01-28*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Voluntary Clean-up Agreement*
Completion Date: *2000-01-25*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Preliminary Endangerment Assessment Report*
Completion Date: *2000-06-09*
Comments:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 77 **DIST/DIR:** NON GC **MAP ID:**

NAME: INTERNATIONAL AUTO CRAFTERS
ADDRESS: 29385 HUNCO WY
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 09/06/05
ID1: RICOGEN_1379
ID2:
STATUS: NOT REPORTED
PHONE:

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:
Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

OTHER SITE

SEARCH ID: 76 **DIST/DIR:** NON GC **MAP ID:**

NAME: ELSINORE USD (TRANSPORTATION)
ADDRESS: 21641 BUNDY CYN RD
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 09/06/05
ID1: RICOGEN_1374
ID2:
STATUS: NOT REPORTED
PHONE:

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:
Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 75 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ELSINORE USD (GROUNDS SHOP)	**REV:**	09/06/05
ADDRESS:	LEWIS ST and GRAHAM AVE	**ID1:**	RICOGEN_1387
	LAKE ELSINORE CA 92530	**ID2:**	
	RIVERSIDE	**STATUS:**	NOT REPORTED
CONTACT:		**PHONE:**	

RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH HAZARDOUS WASTE GENERATORS LIST:

Please Note: The responsible agency does not provide details for these records. For further information on a site or to schedule a file review, please contact the Riverside County Environmental Health Department at the following phone number: (951) 358-5055

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 74 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ELSINORE HIGH SCHOOL NO. 4	**REV:**	01/16/09
ADDRESS:	GRAND AVENUE/RIVERSIDE DRIVE	**ID1:**	CAL33010016
	LAKE ELSINORE CA 92530	**ID2:**	
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2000-11-29*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*DTSC*
Lead Agency:	*NONE SPECIFIED*
Project Manager:	
Supervisor:	*Rebecca Chou*
Branch:	*Cypress*
Acres:	*74*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*30001 30013 30018*
Confirmed Contaminants:	*30001 30013*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Reqnired:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404117-11

33010016

ELSINORE HIGH SCHOOL 4(PROPOSED)

HIGH SCHOOL SITE NO. 3 (PROPOSED)

HIGH SCHOOL SITE NO. 4 (PROPOSED)

LAKE ELSINORE UNIFIED SCHOOL DISTRICT

LAKE ELSINORE USD-ELSINORE HS 4/VCA

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	**** Workplan***
Completion Date:	***2000-11-03***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2002-08-16***
Comments:	
Area Name:	***PROJECT WIDE***

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 74 **DIST/DIR:** NON GC **MAP ID:**

NAME: ELSINORE HIGH SCHOOL NO. 4
ADDRESS: GRAND AVENUE/RIVERSIDE DRIVE
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 01/16/09
ID1: CAL33010016
ID2:
STATUS: NO FURTHER ACTION
PHONE:

Sub- Area Name:
Document Type: *Environmental Oversight Agreement*
Completion Date: *2000-07-31*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Environmental Oversight Agreement*
Completion Date: *2000-11-29*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Preliminary Endangerment Assessment Report*
Completion Date: *2001-08-17*
Comments:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 72 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ELSINORE ELEMENTARY SCHOOL ANNEX PROJECT	**REV:**	01/16/09
ADDRESS:	N. LANGSTAFF STREET/POE STREET	**ID1:**	CAL33550001
	LAKE ELSINORE CA 92530	**ID2:**	
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2001-06-26*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	
Snpervisor:	*Javier Hinojosa*
Branch:	*Chatsworth*
Acrcs:	*1.25*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	** RETAIL - AUTO DEALERS and SERVICE STATIONS*
Potential Contaminants:	*30013 30481*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*SOIL, SV*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404156-11

33550001

ELEMENTARY SCHOOL EXPANSION (PROPOSED)

LAKE ELSINORE UNIFIED SCHOOL DISTRICT

ELSINORE ELEMENTARY SCHOOL ANNEX PROJECT

LAKE ELSINORE USD-ELSINORE ELEM EXPAN

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2001-07-06***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2001-06-26***
Comments:	*DTSC approved the PEA Report with a no further action determination.*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 83 **DIST/DIR:** NON GC **MAP ID:**

NAME: TEMESCAL CANYON ELEMENTARY
ADDRESS: CLAYSTONE AVENUE/NICKELLAUS COURT
CORONA CA 92883
RIVERSIDE
CONTACT:

REV: 01/16/09
IDI: CAL33010021
ID2:
STATUS: NO FURTHER ACTION
PHONE:

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2001-12-26*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*DTSC*
Lead Agency:	*NONE SPECIFIED*
Project Manager:	*KAMILI SIGLOWIDE*
Supervisor:	*Charles Ridenour*
Branch:	*Cypress*
Acres:	*11.7*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*30001 30006 30007 30008*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404149-11

CORONA-NORCO USD

33010021

CORONA/NORCO USD-TEMESCAL CANYN ELEM SCH

TEMESCAL CANYON ELEMENTARY SCHOOL SITE

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	**** Workplan***
Completion Date:	***2001-04-16***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	**** Workplan***
Completion Date:	***2001-07-20***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2001-12-26***
Comments:	

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

OTHER SITE

SEARCH ID: 83 **DIST/DIR:** NON GC **MAP ID:**

NAME:	TEMESCAL CANYON ELEMENTARY	**REV:**	01/16/09
ADDRESS:	CLAYSTONE AVENUE/NICKELLAUS COURT	**ID1:**	CAL33010021
	CORONA CA 92883	**ID2:**	
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Environmental Oversight Agreement*
Completion Date: *2000-09-18*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Site Inspections/ Visit*
Completion Date: *2000-12-12*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Preliminary Endangerment Assessment Report*
Completion Date: *2001-12-26*
Comments:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 52 **DIST/DIR:** NON GC **MAP ID:**

NAME: KARHAY LLC DBA LAKE ELSINORE FORD
ADDRESS: 1358 CAMBELL ST
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000328366
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *1/2/2008 9:04:05 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *31500 AUTO CENTER DR, LAKE ELSINORE, CA 92530-4563*
Owner Name: *KARHAY LLC DBA LAKE ELSINORE FORD*
Owner Address: *31500 AUTO CENTER DR, LAKE ELSINORE, CA 92530-4563*
Contact Name: *BILL HAAS*
Contact Address: *31500 AUTO CENTER DR, LAKE ELSINORE, CA 92530-4563*
Contact Phone: *9514714100*

PERMITS SITE

SEARCH ID: 47 **DIST/DIR:** NON GC **MAP ID:**

NAME: ELECTRICAL SERVICES CORPORATION
ADDRESS: 18550 MINTHORN ST
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000324427
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *8/31/2007 1:32:03 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *18550 MINTHORN ST, LAKE ELSINORE, CA 92530-2784*
Owner Name: *ELECTRICAL SERVICES CORPORATION*
Owner Address: *18550 MINTHORN ST, LAKE ELSINORE, CA 92530-2784*
Contact Name: *KAREN FAY*
Contact Address: *18550 MINTHORN ST, LAKE ELSINORE, CA 92530-2784*
Contact Phone: *9512961550*

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 48 **DIST/DIR:** NON GC **MAP ID:**

NAME:	EVOLUTION MACHINE	**REV:**	04/16/08
ADDRESS:	18570 PASADENA ST	**ID1:**	CAL000319879
	LAKE ELSINORE CA 92530	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI)
SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*5/22/2007 11:58:40 AM*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*18570 PASADENA ST, LAKE ELSINORE, CA 92530-2770*
Owner Name:	*JOHN HOAR*
Owner Address:	*18570 PASADENA ST, LAKE ELSINORE, CA 92530-2770*
Contact Name:	*JOHN HOAR*
Contact Address:	*18570 PASADENA ST, LAKE ELSINORE, CA 92530-2770*
Contact Phone:	*9512451021*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 49 **DIST/DIR:** NON GC **MAP ID:**

NAME:	FIRESTONE STORE 2238	**REV:**	04/16/08
ADDRESS:	31748 MISSION TRAIL RD	**ID1:**	CAL000036200
	LAKE ELSINORE CA 92530	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*7/5/1990*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*24361 EL TORO ROAD SUITE 250, LAGUNA HILLS, CA 92653-2261*
Owner Name:	*BFS RETAIL and COMMERICAL LLC*
Owner Address:	*24361 EL TORO ROAD SUITE 250, LAGUNA HILLS, CA 92653-0000*
Contact Name:	*JIM NASTOF/CONTROLLER*
Contact Address:	*24361 EL TORO ROAD SUITE 250, LAGUNA HILLS, CA 92653-2261*
Contact Phone:	*9499514616*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:	
1999 Total Tonnage:	
1998 Waste Type:	*Waste oil and mixed oil*
1998 Total Tonnage:	*2.7105*
1997 Waste Type:	
1997 Total Tonnage:	
1996 Waste Type:	
1996 Total Tonnage:	
1995 Waste Type:	*Oil/water separation sludge*
1995 Total Tonnage:	*4.17*
1994 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
1994 Total Tonnage:	*0.2085*
1993 Waste Type:	*Aqueous solution with total organic residues less than 10 percent*
1993 Total Tonnage:	*5.421*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2007:

2007 Waste Type:	
2007 Total Tonnage:	
2006 Waste Type:	
2006 Total Tonnage:	
2005 Waste Type:	*Other organic solids*
2005 Total Tonnage:	*0.1*
2004 Waste Type:	
2004 Total Tonnage:	
2003 Waste Type:	
2003 Total Tonnage:	
2002 Waste Type:	
2002 Total Tonnage:	
2001 Waste Type:	
2001 Total Tonnage:	
2000 Waste Type:	
2000 Total Tonnage:	

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 63 **DIST/DIR:** NON GC **MAP ID:**

NAME: MASTER FAB INC
ADDRESS: 9210 STELLAR CT
CORONA CA 92883
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000274143
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *8/27/2003 3:27:46 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *9210 STELLAR CT, CORONA, CA 92883*
Owner Name: *MFI HOLDINGS*
Owner Address: *9210 STELLAR CT, CORONA, CA 92883*
Contact Name: *TROY JACKSON*
Contact Address: *9210 STELLAR CT, CORONA, CA 92883*
Contact Phone: *9512774772*

PERMITS SITE

SEARCH ID: 50 **DIST/DIR:** NON GC **MAP ID:**

NAME: FUSION DISPLAY and DESIGN INC
ADDRESS: 29380 HUNCO WAY
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000307740
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *6/8/2006 9:17:39 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *29380 HUNCO WAY, LAKE ELSINORE, CA 92530-0000*
Owner Name: *FUSION DISPLAY and DESIGN INC*
Owner Address: *42355 RIO NEDO, TEMECULA, CA 92590-0000*
Contact Name: *SCOTT THOMSON/GENERAL MANAGER*
Contact Address: *29380 HUNCO WAY, LAKE ELSINORE, CA 92530-0000*
Contact Phone: *9514711626*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type: *Other organic solids*
Total Tonnage per Year: *0.975*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 68 **DIST/DIR:** NON GC **MAP ID:**

NAME:	THE RETREAT GOLF and COUNTRY CLUB LLC	**REV:**	04/16/08
ADDRESS:	8007 SOFT WINDS DR	**ID1:**	CAL000314538
	CORONA CA 92883	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI)
SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*12/20/2006 1:42:32 PM*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*8007 SOFT WINDS DR, CORONA, CA 92883-5977*
Owner Name:	*THE RETREAT GOLF and COUNTRY CLUB LLC*
Owner Address:	*8007 SOFT WINDS DR, CORONA, CA 92883-5977*
Contact Name:	*MARK WILSON / GOLF COURSE SUPT*
Contact Address:	*8007 SOFT WINDS DR, CORONA, CA 92883-5977*
Contact Phone:	*9512770711*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 51 **DIST/DIR:** NON GC **MAP ID:**

NAME: INTERNATIONAL AUTO CRAFTERS II
ADDRESS: 29385 HUNCO WAY
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
IDI: CAL000205581
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *2/1/2001*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *29385 HUNCO WAY, LAKE ELSINORE, CA 92530-0000*
Owner Name: *INTERNATIONAL AUTO CRAFTERS*
Owner Address: *29385 HUNCO WY, LAKE ELSINORE, CA 92530-0000*
Contact Name: *HARVEY/HARRY RYAN*
Contact Address: *29385 HUNCO WAY, LAKE ELSINORE, CA 92553-0000*
Contact Phone: *9096974120*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:
1999 Total Tonnage:
1998 Waste Type:
1998 Total Tonnage:
1997 Waste Type:
1997 Total Tonnage:
1996 Waste Type:
1996 Total Tonnage:
1995 Waste Type:
1995 Total Tonnage:
1994 Waste Type:
1994 Total Tonnage:
1993 Waste Type:
1993 Total Tonnage:

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2007:

2007 Waste Type: *Other organic solids*
2007 Total Tonnage: *0.0375*
2006 Waste Type: *Aqueous solution with total organic residues 10 percent or more*
2006 Total Tonnage: *0.12*
2005 Waste Type: *Aqueous solution with total organic residues 10 percent or more*
2005 Total Tonnage: *0.61*
2004 Waste Type: *Aqueous solution with total organic residues 10 percent or more*
2004 Total Tonnage: *0.37*
2003 Waste Type: *Photochemicals/photoprocessing waste*
2003 Total Tonnage: *0.02*
2002 Waste Type: *Aqueous solution with total organic residues 10 percent or more*
2002 Total Tonnage: *0.2*
2001 Waste Type:
2001 Total Tonnage:
2000 Waste Type:
2000 Total Tonnage:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 69 **DIST/DIR:** NON GC **MAP ID:**

NAME: TRILOGY GOLF CLUB
ADDRESS: 24400 TRILOGY PKWY
RIVERSIDE CA 92883
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000285594
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *8/16/2004 8:59:32 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *24400 TRILOGY PKWY, CORONA, CA 92883*
Owner Name: *SHEA HOMES*
Owner Address: *24400 TRILOGY PKWY, CORONA, CA 92883*
Contact Name: *JESSE TREJO*
Contact Address: *24400 TRILOGY PKWY, CORONA, CA 92883*
Contact Phone: *9512771664*

HWMI WASTE TYPE AND TONNAGE INFORMATION:
Waste Type: *Waste oil and mixed oil*
Total Tonnage per Year: *0.5421*

HWMI WASTE TYPE AND TONNAGE INFORMATION:
Waste Type: *Oil/water separation sludge*
Total Tonnage per Year: *8.34*

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 70 **DIST/DIR:** NON GC **MAP ID:**

NAME:	VONS FUEL 2818	**REV:**	04/16/08
ADDRESS:	11810 DE PALMA RD	**ID1:**	CAL000324557
	CORONA CA 92883	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*9/6/2007 8:19:16 AM*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*4410 ROSEWOOD DR, PLEASANTON, CA 94588-3050*
Owner Name:	*SAFEWAY INC*
Owner Address:	*5918 STONERIDGE MALL RD, PLEASANTON, CA 94588-3229*
Contact Name:	*SHARON PLOUFFE*
Contact Address:	*4410 ROSEWOOD DR, PLEASANTON, CA 94588-3050*
Contact Phone:	*9252265097*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 65 **DIST/DIR:** NON GC **MAP ID:**

NAME:	SLENNA RIDGE	**REV:**	04/16/08
ADDRESS:	8239 SANCTUARY DR	**ID1:**	CAL000297469
	CORONA CA 92883	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*8/15/2005 3:45:10 PM*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*P O BOX 778, CARLSBAD, CA 92018-0000*
Owner Name:	*JOSH PRAKINSON*
Owner Address:	*PO BOX 2794, VALLEY CENTER, CA 92082*
Contact Name:	*LUIS OLIVAS*
Contact Address:	*PO BOX 2794, VALLEY CENTER, CA 92082*
Contact Phone:	*7608024503*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type:	*Unspecified organic liquid mixture*
Total Tonnage per Year:	*1.14675*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type:	*Latex waste*
Total Tonnage per Year:	*3.44025*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 66 **DIST/DIR:** NON GC **MAP ID:**

NAME: SPECTRA COLOR INC
ADDRESS: 9116 STELLAR CT
CORONA CA 92883
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000291667
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *2/28/2005 4:42:24 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *9116 STELLAR CT, CORONA, CA 92883-4923*
Owner Name: *SPECTRA COLOR INC X204*
Owner Address: *9116 STELLAR CT, CORONA, CA 92883-4923*
Contact Name: *MIKE BILLS X207*
Contact Address: *9116 STELLAR CT, CORONA, CA 92883-4923*
Contact Phone: *9512770200*

PERMITS SITE

SEARCH ID: 60 **DIST/DIR:** NON GC **MAP ID:**

NAME: THE LINKS SUMMERLY
ADDRESS: 18750 MALAGA RD
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000314518
ID2:
STATUS: INACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *12/20/2006 11:18:44 AM*
Inactivity Date: *11/30/2007*
Facility Mail Name:
Facility Mailing Address: *600 N 195TH AVE, BUCKEYE, AZ 85326-9738*
Owner Name: *WADSWORTH GOLF CONSTR CO OF THE SW*
Owner Address: *6650 AVENUE 412, DINUBA, CA 93618*
Contact Name: *MARIO NAVARETTE*
Contact Address: *18750 MALAGA RD, DINUBA, CA 92530*
Contact Phone: *6237641543*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type: *Other organic solids*
Total Tonnage per Year: *1.6*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 67 **DIST/DIR:** NON GC **MAP ID:**

NAME: SYNAGRO WEST
ADDRESS: 10490 DAWSON CANYON RD
CORONA CA 92883
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000289378
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *12/20/2004 11:51:49 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *10490 DAWSON CANYON RD, CORONA, CA 92883*
Owner Name: *SYNAGRO WEST*
Owner Address: *10490 DAWSON CANYON RD, CORONA, CA 92883*
Contact Name: *ERICK CAMPOS SITE MANAGER*
Contact Address: *10490 DAWSON CANYON RD, CORONA, CA 92883-0000*
Contact Phone: *9093222103*

PERMITS SITE

SEARCH ID: 62 **DIST/DIR:** NON GC **MAP ID:**

NAME: EAGLE GLEN MOBIL
ADDRESS: 2261 EAGLE GLEN PKWY
CORONA CA 92883
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000307032
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *5/19/2006 9:25:54 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *2261 EAGLE GLEN PKWY, CORONA, CA 92883-0785*
Owner Name: *EMAD WASIF*
Owner Address: *2261 EAGLE GLEN PKWY, CORONA, CA 92883-0785*
Contact Name: *EMAD WASIF*
Contact Address: *2261 EAGLE GLEN PKWY, CORONA, CA 92883-0785*
Contact Phone: *9513161096*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type: *Other organic solids*
Total Tonnage per Year: *0.03*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 59 **DIST/DIR:** NON GC **MAP ID:**

NAME: SKYDIVE ELSINORE, INC
ADDRESS: 20701 ELSINORE, INC.
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000324858
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *9/14/2007 2:07:47 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *20701 ELSINORE, INC., LAKE ELSINORE, CA 92530*
Owner Name: *KARL GULLEDGE*
Owner Address: *20701 ELSINORE, INC., LAKE ELSINORE, CA 92530*
Contact Name: *KARL GULLEDGE*
Contact Address: *20701 ELSINORE, INC., LAKE ELSINORE, CA 92530*
Contact Phone: *9493700411*

PERMITS SITE

SEARCH ID: 58 **DIST/DIR:** NON GC **MAP ID:**

NAME: PRIMOS AUTO REPAIR
ADDRESS: 29350 HUNCO WAY STE C
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000297569
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *8/17/2005 8:30:21 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *29350 HUNCO WY UNIT C, LAKE ELSINORE, CA 92530*
Owner Name: *FIDENCIO ALMAZAN*
Owner Address: *29350 HUNCO WY UNIT C, LAKE ELSINORE, CA 92530*
Contact Name: *FIDENCIO ALMAZAN*
Contact Address: *41015 MARQUISE ST, LAKE ELSINORE, CA 92530*
Contact Phone: *9516092710*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 57 **DIST/DIR:** NON GC **MAP ID:**

NAME:	MOUNTAINVIEW ANIMAL HOSPITAL	**REV:**	04/16/08
ADDRESS:	151 RAILROAD CANYON RD SOUTH	**ID1:**	CAL000106543
	LAKE ELSINORE CA 92530	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*4/7/1993*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*151 DIAMOND DR, LAKE ELSINORE, CA 92530-4463*
Owner Name:	*CRAIG HEMPEL DVM*
Owner Address:	*151 DIAMOND DR, LAKE ELSINORE, CA 92530-0000*
Contact Name:	*CRAIG HEMPEL DVM*
Contact Address:	*151 DIAMOND DR, LAKE ELSINORE, CA 92530-0000*
Contact Phone:	*9516741475*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 1993-1999:

1999 Waste Type:	*Photochemicals/photoprocessing waste*
1999 Total Tonnage:	*0.0833*
1998 Waste Type:	*Photochemicals/photoprocessing waste*
1998 Total Tonnage:	*0.7088*
1997 Waste Type:	*Photochemicals/photoprocessing waste*
1997 Total Tonnage:	*1.0174*
1996 Waste Type:	*Photochemicals/photoprocessing waste*
1996 Total Tonnage:	*0.1083*
1995 Waste Type:	*Photochemicals/photoprocessing waste*
1995 Total Tonnage:	*0.1166*
1994 Waste Type:	*Photochemicals/photoprocessing waste*
1994 Total Tonnage:	*0.0792*
1993 Waste Type:	*Photochemicals/photoprocessing waste*
1993 Total Tonnage:	*0.0291*

HWMI WASTE TYPE AND TONNAGE INFORMATION BY YEAR 2000-2007:

2007 Waste Type:	*Photochemicals/photoprocessing waste*
2007 Total Tonnage:	*0.4587*
2006 Waste Type:	*Photochemicals/photoprocessing waste*
2006 Total Tonnage:	*0.45*
2005 Waste Type:	*Photochemicals/photoprocessing waste*
2005 Total Tonnage:	*0.45*
2004 Waste Type:	*Photochemicals/photoprocessing waste*
2004 Total Tonnage:	*0.45*
2003 Waste Type:	*Photochemicals/photoprocessing waste*
2003 Total Tonnage:	*0.45*
2002 Waste Type:	
2002 Total Tonnage:	
2001 Waste Type:	
2001 Total Tonnage:	
2000 Waste Type:	
2000 Total Tonnage:	

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 64 **DIST/DIR:** NON GC **MAP ID:**

NAME:	RYDER	**REV:**	04/16/08
ADDRESS:	10490 DAWSON CANYON RD	**ID1:**	CAL000303622
	CORONA CA 92883	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*2/21/2006 10:12:04 AM*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*3539 HOWARD WAY, COSTA MESA, CA 92626*
Owner Name:	*SYNAGRO WEST*
Owner Address:	*11690 NW 105TH ST, MIAMI, FL 33178*
Contact Name:	*DANNY ZWERLING / SERVICE MGR*
Contact Address:	*1440 N MAIN ST, ORANGE, CA 92867-0000*
Contact Phone:	*7142890410*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 56 **DIST/DIR:** NON GC **MAP ID:**

NAME:	LUMBER CITY CORP DBA CALIFORNIA DO IT CENTER	**REV:**	04/16/08
ADDRESS:	32241 MISSION TRAIL RD	**ID1:**	CAL000256710
	LAKE ELSINORE CA 92530	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*7/30/2002 8:48:43 AM*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*20525 NORDHOFF ST STE 210, CHATSWORTH, CA 91311-6135*
Owner Name:	*LUMBER CITY CORP*
Owner Address:	*20525 NORDHOFF ST STE 210, CHATSWORTH, CA 91311-6135*
Contact Name:	*RENEE CIRRONE*
Contact Address:	*32241 MISSION TRL, LAKE ELSINORE, CA 92530-4526*
Contact Phone:	*9516749200*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type:	*Laboratory waste chemicals*
Total Tonnage per Year:	*0.0175*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type:	*Off-specification, aged or surplus organics*
Total Tonnage per Year:	*0.2375*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 55 **DIST/DIR:** NON GC **MAP ID:**

NAME: LEUSD MandO DEPT
ADDRESS: 1401 EDUCATION WAY
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000280373
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *3/24/2004 1:13:47 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *545 CHANEY ST, LAKE ELSINORE, CA 92530-0000*
Owner Name: *LAKE ELSINORE USD*
Owner Address: *545 CHANEY ST, LAKE ELSINORE, CA 92530-0000*
Contact Name: *GENEVA KRAG*
Contact Address: *545 CHANEY ST, LAKE ELSINORE, CA 92530-0000*
Contact Phone: *9092537028*

PERMITS SITE

SEARCH ID: 54 **DIST/DIR:** NON GC **MAP ID:**

NAME: LES AUTO REPAIR
ADDRESS: 212 GHRAM AVE
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000269593
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *4/28/2003 10:44:56 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *PO BOX 387, WILDOMAR, CA 92595*
Owner Name: *LES HARRIS*
Owner Address: *PO BOX 387, WILDOMAR, CA 92595*
Contact Name: *LES HARRIS-OWNER*
Contact Address: *PO BOX 387, WILDOMAR, CA 92595*
Contact Phone: *9516744519*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 53 **DIST/DIR:** NON GC **MAP ID:**

NAME:	LASALLE MEDICAL ASSOCIATES	**REV:**	04/16/08
ADDRESS:	31762 MISSION TRAIL RD F	**ID1:**	CAL000283085
	LAKE ELSINORE CA 92530	**ID2:**	
	Riverside	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created:	*6/14/2004 2:34:49 PM*
Inactivity Date:	
Facility Mail Name:	
Facility Mailing Address:	*31762 MISSION TRAIL RD F, LAKE ELSINORE, CA 92530*
Owner Name:	*DR ALBERT ARTEAGA*
Owner Address:	*685 CARNEGIE DR STE 230, SAN BERNARDINO, CA 92408*
Contact Name:	*B GRABER AUDIT COORDINATOR*
Contact Address:	*31762 MISSION TRAIL RD F, LAKE ELSINORE, CA 92530*
Contact Phone:	*9516745686*

HWMI WASTE TYPE AND TONNAGE INFORMATION:

Waste Type:	*Unspecified organic liquid mixture*
Total Tonnage per Year:	*0.0185*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

PERMITS SITE

SEARCH ID: 46 **DIST/DIR:** NON GC **MAP ID:**

NAME: ACTION CUSTOM TEXTURING INC
ADDRESS: 32450 CORYDON ST
LAKE ELSINORE CA 92530
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000317187
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *3/6/2007 4:19:03 PM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *23905 CLINTON KEITH RD STE 114-521, WILDOMAR, CA 92595-7897*
Owner Name: *ACTION CUSTOM TEXTURING INC*
Owner Address: *23905 CLINTON KEITH RD STE 114-521, WILDOMAR, CA 92595-7897*
Contact Name: *TIM BULLER*
Contact Address: *23905 CLINTON KEITH RD STE 114-521, WILDOMAR, CA 92595-7897*
Contact Phone: *9516987540*

PERMITS SITE

SEARCH ID: 61 **DIST/DIR:** NON GC **MAP ID:**

NAME: DOS LAGOS GOLF COURSE
ADDRESS: 4515 TEMESCAL CANYON RD
CORONA CA 92883
Riverside
CONTACT:

REV: 04/16/08
ID1: CAL000298905
ID2:
STATUS: ACTIVE
PHONE:

THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL HAZARDOUS WASTE MANIFEST INVENTORY (HWMI) SITE INFORMATION FROM THE CA EPA AND DTSC HAZARDOUS WASTE TRACKING SYSTEM (HWTS) :

Date Record was Created: *9/28/2005 10:03:16 AM*
Inactivity Date:
Facility Mail Name:
Facility Mailing Address: *16600 CLUBHOUSE DR, FONTANA, CA 92336-5138*
Owner Name: *DOS LAGOS GC-DONOVAN BROS GOLF*
Owner Address: *4515 TEMESCAL CANYON RD, CORONA, CA 92883*
Contact Name: *FRANCISCO TREJO*
Contact Address: *4507 CABOT DR, CORONA, CA 92883*
Contact Phone: *9515229571*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

RCRA GENERATOR SITE

SEARCH ID: 3 **DIST/DIR:** NON GC **MAP ID:**

NAME:	LAKE CHEVROLET	**REV:**	5/13/09
ADDRESS:	31201 AUTO CENTER DR	**ID1:**	CAR000169680
	LAKE ELSINORE CA 92530	**ID2:**	
	RIVERSIDE	**STATUS:**	SGN
CONTACT:	JANET K HUTCHINSON	**PHONE:**	951-674-3116 232

SITE INFORMATION

CONTACT INFORMATION: JANET HUTCHINSON
PO BOX 4000
LAKE ELSINORE CA 92531 4000

PHONE: 951-674-3116

UNIVERSE INFORMATION:

NAIC INFORMATION

44111 - NEW CAR DEALERS
44112 - USED CAR DEALERS

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Corrosive waste
Spent cyanide plating bath solutions from electroplating operations.
Ignitable waste
Lead

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

RCRA GENERATOR SITE

SEARCH ID: 4 **DIST/DIR:** NON GC **MAP ID:**

NAME:	NORTH ORANGE COAST PAINTING	**REV:**	5/13/09
ADDRESS:	32054 POPPY WAY	**ID1:**	CAR000120972
	LAKE ELSINORE CA 92530	**ID2:**	
	RIVERSIDE	**STATUS:**	SGN
CONTACT:	JOHN FOTION	**PHONE:**	9092089185

SITE INFORMATION

CONTACT INFORMATION: JOHN FOTION
P O BOX 520
NORCO CA 928600520

PHONE: 9092089185

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

RCRA GENERATOR SITE

SEARCH ID: 2 **DIST/DIR:** NON GC **MAP ID:**

NAME:	HOME DEPOT USA INC 8988	**REV:**	5/13/09
ADDRESS:	13282 COLLIER AVE	**ID1:**	CAR000170894
	LAKE ELSINORE CA 92530	**ID2:**	
	RIVERSIDE	**STATUS:**	SGN
CONTACT:	ROBERT PERKINS	**PHONE:**	760-602-8700

SITE INFORMATION

CONTACT INFORMATION: ROBERT PERKINS
1905 ASTON AVE NO 100
CARLSBAD CA 92008

PHONE: 760-602-8700

UNIVERSE INFORMATION:

NAIC INFORMATION

44411 - HOME CENTERS

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b
Lead
Benzene
2,4-D (2,4-Dichlorophenoxyacetic acid)
Cadmium
Corrosive waste
Ignitable waste
Methyl ethyl ketone
The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a to
Mercury
Silver

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

RCRA GENERATOR SITE

SEARCH ID: 1 **DIST/DIR:** NON GC **MAP ID:**

NAME: HOME DEPOT NO HD8988
ADDRESS: 18282 COLLIER AVE
LAKE ELSINORE CA 92530

CONTACT: ROBERT PERKINS

REV: 5/13/09
ID1: CAR000175216
ID2:
STATUS: SGN
PHONE: 760-602-8700

CONTACT INFORMATION:

ROBERT PERKINS
760-602-8700
RPERKINS 3ECOMPANY.COM

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA CA BASELINE UNIVERSE:	*NO*
GPRA CA 2008:	*NO*

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:	NO
SUBJCA TSD 3004:	NO
SUBJCA NON TSD:	NO
SUBJCA TSD DISCRETION:	NO
PERMIT WORKLOAD:	-----
CLOSURE WORKLOAD:	-----
POST CLOSURE WORKLOAD:	-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:	-----
CORRECTIVE ACTION WORKLOAD:	NO
GENERATOR STATUS:	SQG
TRANSPORTER:	NO
UNIVERSAL WASTE:	NO
RECYCLER:	NO
USED OIL:	NO
IMPORTER:	NO
MIXED WASTE GENERATOR:	NO
ONSITE BURNER EXEMPT:	NO
FURNACE EXEMPTION:	NO
UNDERGROUND INJECTION:	NO
NAIC 1:	Home Centers
NAIC 2:	
NAIC 3:	
NAIC 4:	

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

RCRA GENERATOR SITE

SEARCH ID: 5 **DIST/DIR:** NON GC **MAP ID:**

NAME:	WAL-MART 2077	**REV:**	5/13/09
ADDRESS:	31700 GRAPE STREET	**ID1:**	CAL000116535
	LAKE ELSINORE CA 92530	**ID2:**	
	RIVERSIDE	**STATUS:**	LGN
CONTACT:	RICH DAILEY	**PHONE:**	4792049914

DETAILS NOT AVAILABLE

STATE SPILLS SITE

SEARCH ID: 39 **DIST/DIR:** NON GC **MAP ID:**

NAME:	HORSETHIEF CANYON RANCH	**REV:**	07/01/2003
ADDRESS:	N/A	**ID1:**	SLC8_171
	LAKE ELSINORE CA	**ID2:**	
	RIVERSIDE	**STATUS:**	ADDITIONAL CHARACTERIZATION
CONTACT:		**PHONE:**	

Lead Agency:	*REGIONAL BOARD*
Program:	*SLIC*
Case Type:	*SOIL*
Status:	*ADDITIONAL CHARACTERIZATION*
Substance:	*TPH*
Comments:	*SITE ASSESSMENT REPORT UNDER REVIEW*
Thomas Brothers Guide Location:	

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE SPILLS SITE

SEARCH ID: 40 **DIST/DIR:** NON GC **MAP ID:**

NAME: HORSETHIEF CANYON RANCH
ADDRESS: N/A
LAKE ELSINORE CA
CONTACT:

REV: 05/22/09
ID1: G_SLT8R1374162
ID2:
STATUS: OPEN
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *SANTA ANA RWQCB (REGION 8)*
REGIONAL BOARD CASE NUMBER: *SLT8R137*
LOCAL AGENCY:
LOCAL CASE NUMBER:
CASE TYPE: *Cleanup Program Site*
STATUS: *Open*
STATUS DATE: *1965-01-01*
POTENTIAL CONTAMINANTS OF CONCERN:
POTENTIAL MEDIA AFFECTED:
SITE HISTORY (blank if not reported):

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 32 **DIST/DIR:** NON GC **MAP ID:**

NAME:	JAVA LANES BOWLING ALLEY	**REV:**	01/16/09
ADDRESS:	3738/3800 EAST PACIFIC COAST HIGHWAY	**ID1:**	CAL19130111
	LONG BEACH CA 90804	**ID2:**	SCHOOL
	LOS ANGELES	**STATUS:**	INACTIVE - NEEDS EVALUATION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*Inactive - Needs Evaluation*
Status Date:	*2002-05-02*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	*JUAN OSORNIO*
Supervisor:	*Shahir Haddad*
Branch:	*Cypress*
Acres:	*3.14*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*OIL and GAS EXTRACTION*
Potential Contaminants:	*NONE SPECIFIED 31000*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*NMA*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

JAVA LANES (PROPOSED)

JAVA LANES BOWLING ALLEY (PROPOSED)

JAVA LANES SCHOOL SITE (PROPOSED)

LONG BEACH UNIFIED SCHOOL DISTRICT

404251-11

19130111

LONG BEACH USD-JAVA LN BOWLING ALY SCL

JAVA LANES SCHOOL SITE

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Workplan***
Completion Date:	***2001-10-16 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2002-05-02 00:00:00***
Comments:	

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 32 **DIST/DIR:** NON GC **MAP ID:**

NAME:	JAVA LANES BOWLING ALLEY	**REV:**	01/16/09
ADDRESS:	3738/3800 EAST PACIFIC COAST HIGHWAY	**ID1:**	CAL19130111
	LONG BEACH CA 90804	**ID2:**	SCHOOL
	LOS ANGELES	**STATUS:**	INACTIVE - NEEDS EVALUATION
CONTACT:		**PHONE:**	

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Environmental Oversight Agreement***
Completion Date:	***2001-08-03 00:00:00***
Comments:	

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 28 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ALBERHILL RANCH ELEMENTARY SCHOOL	**REV:**	01/16/09
ADDRESS:	NICHOLS ROAD/LAKE STREET	**ID1:**	CAL60000306
	LAKE ELSINORE CA 92530	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*Active*
Status Date:	*2006-05-23*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	*ASLAM SHAREEF*
Supervisor:	*Tawfiq Deek*
Branch:	*Cypress*
Acres:	*10.29*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*MINE*
Potential Contaminants:	*30015*
Confirmed Contaminants:	*30015*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404708-11

60000306

FUTURE ACTIVITIES (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub-Area Name:	
Document Type:	*Supplemental Site Investigation Report*
Completion Due Date:	*2008*

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2007-08-23 00:00:00***
Comments:	*DTSC approved the PEA Report with a Further Action determination for the further investigation of methane detected on site.*

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Fieldwork***
Completion Date:	***2007-04-12 00:00:00***
Comments:	*Sampling results were submitted for DTSC s review.*

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Supplemental Site Investigation Tech Memo***

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 28 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ALBERHILL RANCH ELEMENTARY SCHOOL	**REV:**	01/16/09
ADDRESS:	NICHOLS ROAD/LAKE STREET	**IDI:**	CAL60000306
	LAKE ELSINORE CA 92530	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

Completion Date: ***2007-11-01 00:00:00***
Comments: *DTSC issued approval for the SSI Tech Memo*

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Environmental Oversight Agreement***
Completion Date: ***2006-07-11 00:00:00***
Comments:

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Site Inspections/ Visit***
Completion Date: ***2006-11-08 00:00:00***
Comments:

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***School Cleanup Agreement***
Completion Date: ***2008-02-28 00:00:00***
Comments: *Signed agreement sent (FedEx to District).*

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 29 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ELSINORE ELEMENTARY SCHOOL ANNEX PROJECT	**REV:**	01/16/09
ADDRESS:	N. LANGSTAFF STREET/POE STREET	**ID1:**	CAL33550001
	LAKE ELSINORE CA 92530	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2001-06-26*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	
Supervisor:	*Javier Hinojosa*
Branch:	*Chatsworth*
Acres:	*1.25*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*RETAIL - AUTO DEALERS and SERVICE STATIONS*
Potential Contaminants:	*30013 30481*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*SOIL, SV*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404156-11

33550001

ELEMENTARY SCHOOL EXPANSION (PROPOSED)

LAKE ELSINORE UNIFIED SCHOOL DISTRICT

ELSINORE ELEMENTARY SCHOOL ANNEX PROJECT

LAKE ELSINORE USD-ELSINORE ELEM EXPAN

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2001-06-26 00:00:00***
Comments:	*DTSC approved the PEA Report with a no further action determination.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2001-07-06 00:00:00***
Comments:	

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 31 **DIST/DIR:** NON GC **MAP ID:**

NAME: BOULDER SPRINGS ELEMENTARY SCHOOL
ADDRESS: MARTIN STREET/CARPINUS DRIVE
GLEN VALLEY CA 92570
RIVERSIDE
CONTACT:

REV: 07/18/05
ID1: CAL33010086
ID2:
STATUS: NO ACTION - FOR CALMORTGAGE
PHONE:

OTHER SITE NAMES (blank below = not reported by agency)
BOULDER SPRINGS ELEMENTARY SCHOOL

VAL VERDE UNIFIED SCHOOL DISTRICT

GENERAL SITE INFORMATION

File Name (if different than site name):	*BOULDER SPRINGS ELEMENTARY SCHOOL*
Status:	*NO ACTION - FOR CALMORTGAGE ONLY*
AWP Site Type:	*PROPOSED SCHOOL SITE PROPERTY*
NPL Site:	
Fund:	
Status Date:	*10142003*
Lead:	*DEPT OF TOXIC SUBSTANCES CONTROL*
Staff:	*RMORRIS*
DTSC Region and RWQCB :	*CYPRESS*
Branch:	*SCHOOL EVALUATION*
RWQCB:	
Site Access:	
Groundwater Contamination:	
Number of Sources Contributing to Contamination at the Site:	*0*

OTHER AGENCY ID NUMBERS (blank below = not reported by agency)
ID SOURCE NAME, and VALUE: *CALSTARS CODE 404485-11*

BACKGROUND INFORMATION (blank below = not reported by agency)
The site consists of land agriculturally developed with dry farm barley that has been recently harvest. No structures or other improvements are currently located within the limits of the property. Historically, the site appears to have consisted of undeveloped range land prior to 1938 and has been dry farmed to the present. Surrounding property has been historically planted with citrus trees.

PROJECTED ACTIVITIES (blank below = not reported by agency)

Activity:	***PHASE I - CALMORTGAGE AND SCHOOL SITE PROPERTIES***
Activity Status:	*NO ACTION - FOR CALMORTGAGE ONLY*
Completion Due Date:	
Revised Completion Due Date:	
Date Activity Actually Completed:	*10142003*
Yards of Solids Removed:	*0*
Yards of Solids Treated:	*0*
Gallons of Liquid Removed:	*0*
Gallons of Liquid Treated:	*0*

DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)
Comments Date: ***10142003***
: *DTSC reviewed a Phase I Environmental Assessment and has made a No Action determination for this Site.*

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 33 **DIST/DIR:** NON GC **MAP ID:**

NAME:	MCCANNA RANCH SCHOOL	**REV:**	01/16/09
ADDRESS:	MAIN ST. / RIDER ST.	**ID1:**	CAL60000048
	PERRIS CA 92570	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	INACTIVE - ACTION REQUIRED
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*Inactive - Action Required*
Status Date:	*2000-10-23*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	*SHAHIR HADDAD*
Supervisor:	*Rebecca Chou*
Branch:	*Cypress*
Acres:	*25*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*UNKNOWN*
Potential Contaminants:	*NONE SPECIFIED 31000*
Confirmed Contaminants:	*31000*
Potcutial Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404160-11

60000048

VAL VERDE USD-MCCANNA RANCH

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Phase 1***
Completion Date:	***2000-10-24 00:00:00***
Comments:	

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 34 **DIST/DIR:** NON GC **MAP ID:**

NAME: MONUMENT RANCH SITE
ADDRESS: GOETZ ROAD / ETHANAC ROAD
PERRIS CA 92570
RIVERSIDE
CONTACT:

REV: 01/16/09
ID1: CAL70000024
ID2: SCHOOL
STATUS: NO FURTHER ACTION
PHONE:

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2006-06-22*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	*IVY GUANO*
Supervisor:	*Shahir Haddad*
Branch:	*Cypress*
Acres:	*23*
Assessor s Parcel Number:	*330-160-007, 330-160-014, 330-160-008, 330-160-009, 330-160-010, 330-160-011, 330-160-012, 330-160-015, 330-160-013*
Past Uses:	*AGRICULTURAL - ORCHARD, AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*30001 30006 30007 30008*
Confirmed Contaminants:	*30001 30006 30007 30008*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404643-11

330-160-007

20050024

Romoland School District

70000024

330-160-014

330-160-008

330-160-009

330-160-010

330-160-011

330-160-012

330-160-015

330-160-013

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 34 **DIST/DIR:** NON GC **MAP ID:**

NAME: MONUMENT RANCH SITE
ADDRESS: GOETZ ROAD / ETHANAC ROAD
PERRIS CA 92570
RIVERSIDE
CONTACT:

REV: 01/16/09
ID1: CAL70000024
ID2: SCHOOL
STATUS: NO FURTHER ACTION
PHONE:

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Preliminary Endangerment Assessment Report***
Completion Date: ***2006-06-20 00:00:00***
Comments: *DTSC issued a No Further Action determination based on a Preliminary Environmental Assessment Report*

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Preliminary Endangerment Assessment Workplan***
Completion Date: ***2006-01-03 00:00:00***
Comments: *PEA workplan approval*

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Environmental Oversight Agreement***
Completion Date: ***2005-08-09 00:00:00***
Comments:

Area Name: ***PROJECT WIDE***
Sub- Area Name:
Document Type: ***Cost Recovery Closeout Memo***
Completion Date: ***2006-06-26 00:00:00***
Comments:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 35 **DIST/DIR:** NON GC **MAP ID:**

NAME: RAILROAD ELEMENTARY SCHOOL
ADDRESS: A STREET/ALPINE DRIVE
PERRIS CA 92570
RIVERSIDE
CONTACT:

REV: 01/16/09
ID1: CAL33010019
ID2: SCHOOL
STATUS: NO FURTHER ACTION
PHONE:

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2001-05-22*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	*SHAHIR HADDAD*
Supervisor:	*Rebecca Chou*
Branch:	*Cypress*
Acres:	*16.42*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*30003 30007 30008*
Confirmed Contaminants:	*30003 30007 30008*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Reqnired:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blauk below = not reported by agency)

404110-11

PERRIS ELEMENTARY SCHOOL DISTRICT

33010019

PERRIS ELEMSD/EXISTING RAILROAD ELEM/VCA

RAILROAD ELEMENTARY SCHOOL (PROPOSED)

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blauk below = uot reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2001-05-22 00:00:00***
Comments:	*DTSC approved the PEA Report with no further action determination.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2002-09-19 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Environmental Oversight Agreement***
Completion Date:	***2000-08-18 00:00:00***
Comments:	

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 35 **DIST/DIR:** NON GC **MAP ID:**

NAME:	RAILROAD ELEMENTARY SCHOOL	**REV:**	01/16/09
ADDRESS:	A STREET/ALPINE DRIVE	**ID1:**	CAL33010019
	PERRIS CA 92570	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 36 **DIST/DIR:** NON GC **MAP ID:**

NAME:	WILSON/NUEVO ELEMENTARY	**REV:**	01/16/09
ADDRESS:	WILSON AVENUE/NUEVO ROAD	**ID1:**	CAL33010018
	PERRIS CA 92571	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	INACTIVE - NEEDS EVALUATION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*Inactive - Needs Evaluation*
Status Date:	*2001-01-25*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	
Supervisor:	*Javier Hinojosa*
Branch:	*Cypress*
Acres:	*11.21*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*NONE SPECIFIED*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*NONE SPECIFIED*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404121-11

PERRIS ELEMENTARY SCHOOL DISTRICT

WILSON/NUEVO ELEMENTARY SCH. (PROPOSED)

33010018

PERRIS ELEM. SD-WILSON/NUEVO/VCA

WILSON/NUEVO ELEMENTARY SCHOOL (PROP)

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	**** Workplan***
Completion Date:	***2001-01-25 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2001-04-20 00:00:00***
Comments:	*The project was dropped in August 2002.*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Environmental Oversight Agreement***

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 36 **DIST/DIR:** NON GC **MAP ID:**

NAME:	WILSON/NUEVO ELEMENTARY	**REV:**	01/16/09
ADDRESS:	WILSON AVENUE/NUEVO ROAD	**ID1:**	CAL33010018
	PERRIS CA 92571	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	INACTIVE - NEEDS EVALUATION
CONTACT:		**PHONE:**	

Completion Date: ***2000-09-05 00:00:00***
Comments:

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 37 **DIST/DIR:** NON GC **MAP ID:**

NAME:	SYCAMORE CREEK ELEMENTARY	**REV:**	01/16/09
ADDRESS:	TEMESCAL CANYON/MAITRI ROAD	**ID1:**	CAL33010097
	CORONA CA 92883	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2006-05-30*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	*RANA GEORGES*
Supervisor:	*Tawfiq Deek*
Branch:	*Cypress*
Acres:	*11.89*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ORCHARD*
Potential Contaminants:	*NONE SPECIFIED 31000*
Confirmed Contaminants:	*31000*
Potential Media Affected:	*NMA, NMA*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

33010097

CORONA-NORCO UNIFIED SCHOOL DISTRICT

CORONA-NORCO USD-PROPOSED SYCAMORE ES

404623-11

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2006-05-11 00:00:00***
Comments:	*DTSC sent final approval with no further action determination*
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Environmental Oversight Agreement***
Completion Date:	***2005-05-02 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Cost Recovery Closeout Memo***
Completion Date:	***2006-05-30 00:00:00***
Comments:	

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 38 **DIST/DIR:** NON GC **MAP ID:**

NAME:	TEMESCAL CANYON ELEMENTARY	**REV:**	01/16/09
ADDRESS:	CLAYSTONE AVENUE/NICKELLAUS COURT	**ID1:**	CAL33010021
	CORONA CA 92883	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2001-12-26*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*DTSC*
Lead Agency:	*NONE SPECIFIED*
Project Manager:	*KAMILI SIGLOWIDE*
Supervisor:	*Charles Ridenour*
Branch:	*Cypress*
Acres:	*11.7*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*30001 30006 30007 30008*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

404149-11

CORONA-NORCO USD

33010021

CORONA/NORCO USD-TEMESCAL CANYN ELEM SCH

TEMESCAL CANYON ELEMENTARY SCHOOL SITE

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Docnment Type:	***Preliminary Endangerment Assessment Report***
Completion Date:	***2001-12-26 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Docnment Type:	**** Workplan***
Completion Date:	***2001-04-16 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	**** Workplan***
Completion Date:	***2001-07-20 00:00:00***
Comments:	

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 38 **DIST/DIR:** NON GC **MAP ID:**

NAME:	TEMESCAL CANYON ELEMENTARY	**REV:**	01/16/09
ADDRESS:	CLAYSTONE AVENUE/NICKELLAUS COURT	**ID1:**	CAL33010021
	CORONA CA 92883	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Cost Recovery Closeout Memo*
Completion Date: *2001-12-26 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Environmental Oversight Agreement*
Completion Date: *2000-09-18 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Site Inspections/ Visit*
Completion Date: *2000-12-12 00:00:00*
Comments:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 30 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ORTEGA HIGH SCHOOL/ALTERNATIVE EDUCATION	**REV:**	01/16/09
ADDRESS:	CHANEY STREET	**ID1:**	CAL33010008
	LAKE ELSINORE CA 92530	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*School Investigation*
Status:	*No Further Action*
Status Date:	*2000-06-09*
NPL Site:	*NO*
Funding:	*School District*
Regulatory Agencies Involved:	*SMBRP*
Lead Agency:	*SMBRP*
Project Manager:	
Supervisor:	*Mark Malinowski*
Branch:	*Cypress*
Acres:	*10.14*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*AGRICULTURAL - ROW CROPS*
Potential Contaminants:	*30005 30008 30067 30013 30587*
Confirmed Contaminants:	*NONE SPECIFIED*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Special Programs Associated with this Site:	

OTHER SITE NAMES (blank below = not reported by agency)

400811-11 VCA

400787-11 CDE

LAKE ELSINORE UNIFIED SCHOOL DISTRICT

33010008

LAKE ELSINORE USD-ORTEGA HS

LAKE ELSINORE USD-ORTEGA HS/VCA

ORTEGA HIGH SCHOOL

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Snb- Area Name:	
Docnment Type:	***Phase 1***
Completion Date:	***1999-10-21 00:00:00***
Comments:	
Area Name:	***PROJECT WIDE***
Snb- Area Name:	
Document Type:	***Other Report***
Completion Date:	***2000-02-14 00:00:00***
Comments:	*Phase 1 used for background information.*
Area Name:	***PROJECT WIDE***

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

STATE

SEARCH ID: 30 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ORTEGA HIGH SCHOOL/ALTERNATIVE EDUCATION	**REV:**	01/16/09
ADDRESS:	CHANEY STREET	**ID1:**	CAL33010008
	LAKE ELSINORE CA 92530	**ID2:**	SCHOOL
	RIVERSIDE	**STATUS:**	NO FURTHER ACTION
CONTACT:		**PHONE:**	

Sub- Area Name:
Document Type: ** Workplan*
Completion Date: *2000-03-03 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Cost Recovery Closeout Memo*
Completion Date: *1999-11-17 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Cost Recovery Closeout Memo*
Completion Date: *2003-04-22 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Site Inspections/ Visit*
Completion Date: *2000-01-28 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Voluntary Clean-up Agreement*
Completion Date: *2000-01-25 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Preliminary Endangerment Assessment Report*
Completion Date: *2000-06-09 00:00:00*
Comments:

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

SOLID WASTE LANDFILL SITE

SEARCH ID: 41 **DIST/DIR:** NON GC **MAP ID:**

NAME: LANDFILL,ELSINORE-CLOSED
ADDRESS:
LAKE ELSINORE CA
RIVERSIDE
CONTACT: ROBERT NELSON

REV: 07/03/00
ID1: WMUD8 330305005
ID2: 33-AA-0005
STATUS: ACTIVE
PHONE: 9099551370

WMUDS FACILITY INFORMATION (blank = not reported)

Regional ID :
NPDES ID :
Region: *8*
Edit Date: *7/5/94*
Last Edit: *BDNBDNCEN*

Waste Discharger Facility: *Yes*

Snb Chapter 15 Facility: *Yes*
Solid Waste Assessment Test Site: *Yes*
Toxic Pits Cleanup Act Facility: *No*
RCRA Facility: *No*
Department of Defense Facility: *No*
Municipal Solid Waste Facility: *Yes*

Total WMUS at Facility: *1*
Facility Open to the Public: *No*
Facility Type: *SW3*
SIC 1 and SIC 2: *4953 /*

Primary Waste Type: *NONHAZARDOUS SOLID WASTES: SOLID WASTES*
Secondary Waste Type:
Tons Per Day: *0*
Complexity: *CATEGORY B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilites without treatment systems that are complex, such as marina*

LAND OWNER INFORMATION

Land Owner: *CITY OF ELSINORE*
Department:
Contact and Phone: *, 7146743171*
Land Owner Address: *P.O. DRAWER D, LAKE ELSINORE, CA 92330*

AGENCY INFORMATION

Agency Name: *RIVERSIDE CO. WASTE MGMT*
Department: *WASTE DISPOSAL DIVISION*
Agency Contact and Phone: *ROBERT NELSON, 9099551370*

WASTE MANAGEMENT UNIT INFORMATION (blank = not reported)

WMU ID : *8 330305005-01*
WMU Status: *POST-CLOSURE*
WMU Size in Acres: *44*
Year WMU Will Reach Capacity:
Close Plan: *0*
Avg Depth to Groundwater: *55*
Primary Liner Present: *0*

SOLID WASTE ASSESSMENT TEST PROGRAM INFORMATION (SWAT) (blank = not reported)

Site Name: *RIVERSIDE COUNTY-ELSINORE LANDFILL*

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

SOLID WASTE LANDFILL SITE

SEARCH ID: 41 **DIST/DIR:** NON GC **MAP ID:**

NAME: LANDFILL,ELSINORE-CLOSED
ADDRESS:
LAKE ELSINORE CA
RIVERSIDE
CONTACT: ROBERT NELSON

REV: 07/03/00
ID1: WMUD8 330305005
ID2: 33-AA-0005
STATUS: ACTIVE
PHONE: 9099551370

Site Rank: *2*
Leak to Surface Water: *U*
Leak to Ground: *Y*
Leak to Vandose Zone: *U*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

SOLID WASTE LANDFILL SITE

SEARCH ID: 42 **DIST/DIR:** NON GC **MAP ID:**

NAME: CITY OF PERRIS ILLEGAL DUMP SITE
ADDRESS: WEST END OF 11TH STREET
PERRIS CA 92370
RIVERSIDE
CONTACT:

REV: 04/27/09
ID1: SWIS33-AA-0237
ID2:
STATUS: CLOSED
PHONE:

SITE OPERATOR INFORMATION:

Operator: *City Of Perris*
Operator Address: *1015 South g Street* *Perris* *CA 92370*
Permit Date:
Permit Status:
Land Use Name:
GIS Source for LAT and LONG: *Place*

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Unpermitted*
Program Type
Closure Date:
Closure Type: *Estimated*
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *Annual*

SITE OWNER INFORMATION:

Owner: *City Of Perris*
Owner Phone:
Owner Address: *1015 South g Street*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

SOLID WASTE LANDFILL SITE

SEARCH ID: 43 **DIST/DIR:** NON GC **MAP ID:**

NAME:	GREENWASTE,PERRIS	**REV:**	07/03/00
ADDRESS:	3202 GOETZ RD	**ID1:**	WMUD8 332477001
	PERRIS CA 92570	**ID2:**	
	RIVERSIDE	**STATUS:**	HISTORICAL
CONTACT:	GEORGE BODLAK	**PHONE:**	

WMUDS FACILITY INFORMATION (blank = not reported)

Regional ID :	
NPDES ID :	
Region:	*8*
Edit Date:	
Last Edit:	
Waste Discharger Facility:	*Yes*
Sub Chapter 15 Facility:	*Yes*
Solid Waste Assessment Test Site:	*No*
Toxic Pits Cleanup Act Facility:	*No*
RCRA Facility:	*No*
Department of Defense Facility:	*No*
Municipal Solid Waste Facility:	*No*
Total WMUS at Facility:	
Facility Open to the Public:	*No*
Facility Type:	*OTH*
SIC 1 and SIC 2:	*2875 /*
Primary Waste Type:	*NONHAZARDOUS SOLID WASTES: SOLID WASTES*
Secondary Waste Type:	
Tons Per Day:	
Complexity:	

LAND OWNER INFORMATION

Land Owner:	
Department:	
Contact and Phone:	,
Land Owner Address:	, ,

AGENCY INFORMATION

Agency Name:	*ECOLOGY FARMS MANAGEMENT, INC.*
Department:	
Agency Contact and Phone:	*GEORGE BODLAK, 9096765277*

WASTE MANAGEMENT UNIT INFORMATION (blank = not reported)

WMU ID :	*8 332477001-01*
WMU Status:	
WMU Size in Acres:	
Year WMU Will Reach Capacity:	
Close Plan:	*0*
Avg Depth to Groundwater:	
Primary Liner Present:	*0*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

SOLID WASTE LANDFILL SITE

SEARCH ID: 45 **DIST/DIR:** NON GC **MAP ID:**

NAME: WEIRICK ROAD ILLEGAL DUMP
ADDRESS: 21550 TEMESCAL CANYON RD.
CORONA CA 92207
RIVERSIDE
CONTACT:

REV: 11/12/98
ID1: SWIS33-AA-0275
ID2:
STATUS: ACTIVE
PHONE:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Unpermitted*
Closure Date:
Closure Type:
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaining Capacity with Units (landfills only):
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Original Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *None*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

SOLID WASTE LANDFILL SITE

SEARCH ID: 44 **DIST/DIR:** NON GC **MAP ID:**

NAME: CORONA CLAY COMPANY
ADDRESS: DAWSON CANYON RD and TEMESCAL CANYON RD
CORONA CA
RIVERSIDE
CONTACT:

REV: 04/27/09
ID1: SWIS33-AA-0068
ID2:
STATUS: CLOSED
PHONE:

SITE OPERATOR INFORMATION:

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name:
GIS Source for LAT and LONG: *Place*

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Landfill*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Exempt*
Program Type
Closure Date:
Closure Type:
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaiuing Capacity with Units (landfills only):
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *Quarterly*

SITE OWNER INFORMATION:

Owner: *WCS International*
Owner Phone: *9096308901*
Owner Address: *3200 East Fronterra Road*

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

TRIBAL LAND

SEARCH ID: 87 **DIST/DIR:** NON GC **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 92530
RIVERSIDE
CONTACT:

REV: 01/15/08
ID1: BIA-92530
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

The Native American Consultation Database (NACD) is a tool for identifying consultation contacts for Indian tribes, Alaska Native villages and corporations, and Native Hawaiian organizations. The database is not a comprehensive source of information, but it does provide a starting point for the consultation process by identifying tribal leaders and NAGPRA contacts. This database can be accessed online at the following web address http://home.nps.gov/nacd/

TRIBAL LAND

SEARCH ID: 88 **DIST/DIR:** NON GC **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 92570
RIVERSIDE
CONTACT:

REV: 01/15/08
ID1: BIA-92570
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

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Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

TRIBAL LAND

SEARCH ID: 89 **DIST/DIR:** NON GC **MAP ID:**

NAME: BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION
ADDRESS: UNKNOWN
CA 92883
RIVERSIDE
CONTACT:

REV: 01/15/08
ID1: BIA-92883
ID2:
STATUS:
PHONE:

BUREAU OF INDIAN AFFAIRS CONTACT INFORMATION

OFFICE: Pacific Regional Office
CONTACT: CLAY GREGORY,REGIONAL DIRECTOR

ADDRESS: 2800 Cottage Way
Sacramento CA 95825
PHONE: Phone: 916-978-6000
FAX: Fax: 916-978-6099

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REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 84 **DIST/DIR:** NON GC **MAP ID:**

NAME: ELSINORE (DISTRICT 8)
ADDRESS:
LAKE ELSINORE CA
RIVERSIDE
CONTACT:

REV: 05/30/01
ID1: AST1713
ID2:
STATUS: AST SWRCB REG.8
PHONE:

Region: *8*
Company Name: *DEPARTMENT OF TRANSPORTATION*
Company Name 2: *DIVISION OF MAINTENANCE*

Environmental FirstSearch
Site Detail Report

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 85 **DIST/DIR:** NON GC **MAP ID:**

NAME: EVMWD/WASTEWATER PLANT
ADDRESS: 13200 SHOTGUN TR
LAKE ELSINORE CA 92530
RIVERSIDE
CONTACT:

REV: 04/06/2001
ID1: RIVERSIDECO81257
ID2:
STATUS:
PHONE:

DETAILS NOT AVAILABLE

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

VCP

SEARCH ID: 90 **DIST/DIR:** NON GC **MAP ID:**

NAME:	SO CAL GAS/ELSINORE MGP	**REV:**	01/16/09
ADDRESS:	CNR RILEY FLINT SPRING and POTTERY	**ID1:**	CAL33490082
	ELSINORE CA 92530	**ID2:**	VOLUNTARY CLEANUP
	RIVERSIDE	**STATUS:**	CERTIFIED
CONTACT:		**PHONE:**	

GENERAL SITE INFORMATION

Site Type:	*Voluntary Cleanup*
Status:	*Certified*
Status Date:	*2003-06-30*
NPL Site:	*NO*
Funding:	*Responsible Party*
Regulatory Agencies Involved:	*DTSC*
Lead Agency:	*DTSC*
Project Manager:	
Supervisor:	*Greg Holmes*
Branch:	*Cypress*
Acres:	*2.8*
Assessor s Parcel Number:	*NONE SPECIFIED*
Past Uses:	*MANUFACTURED GAS PLANT*
Potential Contaminants:	*30019*
Confirmed Contaminants:	*30019*
Potential Media Affected:	*SOIL*
Restricted Use:	*NO*
Site Management Required:	*NONE SPECIFIED*
Spccial Programs Associated with this Site:	*Voluntary Cleanup Program*

OTHER SITE NAMES (blank below = not reported by agency)

33490082

SO. CALIFORNIA GAS - ELSINORE

SOUTHERN CALIFORNIA GAS

SOUTHERN CALIFORNIA GAS COMPANY

TOWN GAS SITE - ELSINORE

110033605695

400337

COMPLETED ACTIVITIES AND DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Removal Action Completion Report***
Completion Date:	***2003-06-23 00:00:00***
Comments:	*Approximately 2.8 acres in Elsinore was used as a Manufactured Gas Plant (MGP) in 1920 through 1929. From 1923 to 1953 this facility was used as a storage for Natural Gas. MGP operation at the site contaminated the soil with Polynuclear Aromatic Hydrocarbons (PAHs). A total of 3.394 tons of PAH contaminated soil above 0.9 benzo(A)pyrene was excavated and removed.*

Area Name:	***PROJECT WIDE***
Sub- Area Name:	
Document Type:	***Removal Action Workplan***
Completion Date:	***2002-10-21 00:00:00***
Comments:	*Removal Action Workplan for soil completed.*

- Continued on next page -

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

VCP

SEARCH ID: 90 **DIST/DIR:** NON GC **MAP ID:**

NAME:	SO CAL GAS/ELSINORE MGP	**REV:**	01/16/09
ADDRESS:	CNR RILEY FLINT SPRING and POTTERY	**ID1:**	CAL33490082
	ELSINORE CA 92530	**ID2:**	VOLUNTARY CLEANUP
	RIVERSIDE	**STATUS:**	CERTIFIED
CONTACT:		**PHONE:**	

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Preliminary Endangerment Assessment Report*
Completion Date: *1994-06-02 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Certification*
Completion Date: *2003-06-30 00:00:00*
Commeuts: *The Department has determined that all appropriate removal/ remedial actions have been completed and that all acceptable engineering practices were implemented and the site requires no operation and maintenance (OandM) and monitoring efforts.*

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Voluntary Clean-up Agreement*
Completion Date: *1993-08-20 00:00:00*
Comments:

Area Name: *PROJECT WIDE*
Sub- Area Name:
Document Type: *Voluntary Clean-up Agreement*
Completiou Date: *2001-04-30 00:00:00*
Comments:

Environmental FirstSearch Descriptions

NPL: ***EPA*** NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.
A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
FINAL - Currently on the Final NPL
PROPOSED - Proposed for NPL

NPL DELISTED: ***EPA*** NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. 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.
DELISTED - Deleted from the Final NPL

CERCLIS: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.
PART OF NPL- Site is part of NPL site
DELETED - Deleted from the Final NPL
FINAL - Currently on the Final NPL
NOT PROPOSED - Not on the NPL
NOT VALID - Not Valid Site or Incident
PROPOSED - Proposed for NPL
REMOVED - Removed from Proposed NPL
SCAN PLAN - Pre-proposal Site
WITHDRAWN - Withdrawn

NFRAP: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
NFRAP – No Further Remedial Action Plan
P - Site is part of NPL site
D - Deleted from the Final NPL
F - Currently on the Final NPL
N - Not on the NPL
O - Not Valid Site or Incident
P - Proposed for NPL
R - Removed from Proposed NPL
S - Pre-proposal Site
W – Withdrawn

RCRA COR ACT: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: *EPA* RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: *EPA* RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that generate or transport hazardous waste or meet other RCRA requirements.
LGN - Large Quantity Generators
SGN - Small Quantity Generators
VGN – Conditionally Exempt Generator.
Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.

RCRA NLR: *EPA* RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities not currently classified by the EPA but are still included in the RCRAInfo database. Reasons for non classification:
Failure to report in a timely matter.
No longer in business.
No longer in business at the listed address.
No longer generating hazardous waste materials in quantities which require reporting.

Federal IC / EC: *EPA* BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs.
FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated.

ERNS: *EPA/NRC* EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: *DOI/BIA* INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.

State/Tribal Sites: *CA EPA* SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further

studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
Please Note: FirstSearch Reports list the above sites as DB Type (STATE).
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).
Each Category contains information on properties based upon the type of work taking place at the site. For example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.
CORTESE LIST-Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List has been compiled by Cal/EPA, Hazardous Materials Data Management Program. The CAL EPA Dept. of Toxic Substances Control compiles information from subsets of the following databases to make up the CORTESE list:
1. The Dept. of Toxic Substances Control; contaminated or potentially contaminated hazardous waste sites listed in the CAL Sites database. Formerly known as ASPIS are included (CALSITES formerly known as ASPIS).
2. The California State Water Resources Control Board; listing of Leaking Underground Storage Tanks are included (LTANK)
3. The California Integrated Waste Management Board; Sanitary Landfills which have evidence of groundwater contamination or known migration of hazardous materials (formerly WB-LF, now AB 3750).
Note: Track Info Services collects each of the above data sets individually and lists them separately in the following First Search categories in order to provide more current and comprehensive information: CALSITES: SPL, LTANK: LUST, WB-LF: SWL

State Spills 90: ***CA EPA*** SLIC REGIONS 1 - 9- The California Regional Water Quality Control Boards maintain report of sites that have records of spills, leaks, investigation, and cleanups.

State/Tribal SWL: ***CA IWMB/SWRCB/COUNTY*** SWIS SOLID WASTE INFORMATION SYSTEM-The California Integrated Waste Management Board maintains a database on solid waste facilities, operations, and disposal sites throughout the state of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites. For more information on individual sites call the number listed in the source field..
Please Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.
WMUDS-The State Water Resources Control Board maintained the Waste Management Unit Database System (WMUDS). It is no longer updated. It tracked management units for several regulatory programs related to waste management and its potential impact on groundwater. Two of these programs (SWAT & TPCA) are no longer on-going regulatory programs as described below. Chapter 15 (SC15) is still an on-going regulatory program and information is updated periodically but not to the WMUDS database. The WMUDS System contains information from the following agency databases: Facility, Waste Management Unit (WMU), Waste Discharger System (WDS), SWAT, Chapter 15, TPCA, RCRA, Inspections, Violations, and Enforcement's.
Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.
ORANGE COUNTY LANDFILLS LIST- A list maintained by the Orange County Health Department.

State/Tribal LUST: ***CA SWRCB/COUNTY*** LUSTIS- The State Water Resources Control Board maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks. Information for this database is collected from the states regional boards quarterly and integrated with this database.
SAN DIEGO COUNTY LEAKING TANKS- The San Diego County Department of Environmental Health maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks within its HE17/58 database. For more information on a specific file call the HazMat Duty Specialist at phone number listed in the source information field.

State/Tribal UST/AST: ***CA EPA/COUNTY/CITY*** ABOVEGROUND STORAGE TANKS LISTING-The

Above Ground Petroleum Storage Act became State Law effective January 1, 1990. In general, the law requires owners or operators of AST's with petroleum products to file a storage statement and pay a fee by July 1, 1990 and every two years thereafter, take specific action to prevent spills, and in certain instances implement a groundwater monitoring program. This law does not apply to that portion of a tank facility associated with the production oil and regulated by the State Division of Oil and Gas of the Dept. of Conservation.
SWEEPS / FIDS STATE REGISTERED UNDEGROUND STORAGE TANKS- Until 1994 the State Water Resources Control Board maintained a database of registered underground storage tanks statewide referred to as the SWEEPS System. The SWEEPS UST information was integrated with the CAL EPA's Facility Index System database (FIDS) which is a master index of information from numerous California agency environmental databases. That was last updated in 1994. Track Info Services included the UST information from the FIDS database in its First Search reports for historical purposes to help its clients identify where tanks may possibly have existed. For more information on specific sites from individual paper files archived at the State Water Resources Control Board call the number listed with the source information.
INDIAN LANDS UNDERGROUND STORAGE TANKS LIST- A listing of underground storage tanks currently on Indian Lands under federal jurisdiction. California Indian Land USTS are administered by US EPA Region 9.
CUPA DATABASES & SOURCES- Definition of a CUPA: A Certified Unified Program Agency (CUPA) is a local agency that has been certified by the CAL EPA to implement six state environmental programs within the local agency's jurisdiction. These can be a county, city, or JPA (Joint Powers Authority). This program was established under the amendments to the California Health and Safety Code made by SB 1082 in 1994.
A Participating Agency (PA) is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A Designated Agency (DA) is an agency that has not been certified by the CUPA but is the responsible local agency that would implement the six unified programs until they are certified.
Please Note: Track Info Services, LLC collects and maintains information regarding Underground Storage Tanks from majority of the CUPAS and Participating Agencies in the State of California. These agencies typically do not maintain nor release such information on a uniform or consistent schedule; therefor, currency of the data may vary. Please look at the details on a specific site with a UST record in the First Search Report to determine the actual currency date of the record as provided by the relevant agency. Numerous efforts are made on a regular basis to obtain updated records.

State/Tribal IC: ***CA EPA*** DEED-RESTRICTED SITES LISTING- The California EPA's Department of Toxic Substances Control Board maintains a list of deed-restricted sites, properties where the DTSC has placed limits or requirements on the future use of the property due to varying levels of cleanup possible, practical or necessary at the site.

State/Tribal VCP: ***CA EPA*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)

Please Note: FirstSearch Reports list the above sites as DB Type VC. Each Category contains information on properties based upon the type of work taking place at the site. The VC category contains only those properties undergoing voluntary investigation and/or cleanup and which are listed in the Voluntary Cleanup Program.

Floodplains: ***FEMA*** FLOODPLAINS – database of 100 year and 500 year flood zone boundaries for select counties in the United States

RADON: ***NTIS*** NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

State Permits: ***CA COUNTY*** SAN DIEGO COUNTY HE17 PERMITS- The HE17/58 database tracks establishments issued permits and the status of their permits in relation to compliance with federal, state, and

local regulations that the County oversees. It tracks if a site is a hazardous waste generator, TSD, gas station, has underground tanks, violations, or unauthorized releases. For more information on a specific file call the HazMat Duty Specialist at the phone number listed in the source information field.
SAN BERNARDINO COUNTY HAZARDOUS MATERIALS PERMITS- Handlers and Generators Permit Information Maintained by the Hazardous Materials Division.

State Other: ***CA EPA/COUNTY*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
Please Note: FirstSearch Reports list the above sites as DB Type (STATE).
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).
Each Category contains information on properties based upon the type of work taking place at the site. For example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.
LA COUNTY SITE MITIGATION COMPLAINT CONTROL LOG- The County of Los Angeles Public Health Investigation Compliant Control Log.
ORANGE COUNTY INDUSTRIAL SITE CLEANUPS- List maintained by the Orange County Environmental Health Agency.
RIVERSIDE COUNTY WASTE GENERATORS-A list of facilities in Riverside County which generate hazardous waste.
SACRAMENTO COUNTY MASTER HAZMAT LIST-Master list of facilities within Sacramento County with potentially hazardous materials.
SACRAMENTO COUNTY TOXIC SITE CLEANUPS-A list of sites where unauthorized releases of potentially hazardous materials have occurred.

OIL & GAS WELLS: ***CADC*** Listing of completions, pluggings and permits. Data is obtained only from digital data provided by the California Department of Conservation.

Environmental FirstSearch Database Sources

NPL: ***EPA*** Environmental Protection Agency

Updated quarterly

NPL DELISTED: ***EPA*** Environmental Protection Agency

Updated quarterly

CERCLIS: ***EPA*** Environmental Protection Agency

Updated quarterly

NFRAP: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA TSD: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA GEN: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA NLR: ***EPA*** Environmental Protection Agency

Updated quarterly

Federal IC / EC: ***EPA*** Environmental Protection Agency

Updated quarterly

ERNS: ***EPA/NRC*** Environmental Protection Agency

Updated semi-annually

Tribal Lands: ***DOI/BIA*** United States Department of the Interior

Updated annually

State/Tribal Sites: ***CA EPA*** The CAL EPA, Depart. Of Toxic Substances Control
Phone: (916) 323-3400

Updated quarterly/when available

State Spills 90: ***CA EPA*** The California State Water Resources Control Board

Updated when available

State/Tribal SWL: ***CA IWMB/SWRCB/COUNTY*** The California Integrated Waste Management Board
Phone:(916) 255-2331
The State Water Resources Control Board
Phone:(916) 227-4365
Orange County Health Department

Updated quarterly/when available

State/Tribal LUST: ***CA SWRCB/COUNTY*** The California State Water Resources Control Board
Phone:(916) 227-4416
San Diego County Department of Environmental Health

Updated quarterly/when available

State/Tribal UST/AST: ***CA EPA/COUNTY/CITY*** The State Water Resources Control Board
Phone:(916) 227-4364
CAL EPA Department of Toxic Substances Control
Phone:(916)227-4404
US EPA Region 9 Underground Storage Tank Program
Phone: (415) 972-3372
ALAMEDA COUNTY CUPAS:
* County of Alameda Department of Environmental Health
* Cities of Berkeley, Fremont, Hayward, Livermore / Pleasanton, Newark, Oakland, San Leandro, Union
ALPINE COUNTY CUPA:
* Health Department (Only updated by agency sporadically)
AMADOR COUNTY CUPA:
* County of Amador Environmental Health Department
BUTTE COUNTY CUPA
* County of Butte Environmental Health Division (Only updated by agency biannually)
CALAVERAS COUNTY CUPA:
* County of Calaveras Environmental Health Department
COLUSA COUNTY CUPA:
* Environmental Health Dept.
CONTRA COSTA COUNTY CUPA:
* Hazardous Materials Program
DEL NORTE COUNTY CUPA:
* Department of Health and Social Services
EL DORADO COUNTY CUPAS:
* County of El Dorado Environmental Health - Solid Waste Div (Only updated by agency annually)
* County of El Dorado EMD Tahoe Division (Only updated by agency annually)
FRESNO COUNTY CUPA:
* Haz. Mat and Solid Waste Programs
GLENN COUNTY CUPA:
* Air Pollution Control District
HUMBOLDT COUNTY CUPA:
* Environmental Health Division
IMPERIAL COUNTY CUPA:
* Department of Planning and Building

INYO COUNTY CUPA:
* Environmental Health Department
KERN COUNTY CUPA:
* County of Kern Environmental Health Department
* City of Bakersfield Fire Department
KINGS COUNTY CUPA:
* Environmental Health Services
LAKE COUNTY CUPA:
* Division of Environmental Health
LASSEN COUNTY CUPA:
* Department of Agriculture
LOS ANGELES COUNTY CUPAS:
* County of Los Angeles Fire Department CUPA Data as maintained by the Los Angeles County Department of Public Works
* County of Los Angeles Environmental Programs Division
* Cities of Burbank, El Segundo, Glendale, Long Beach/Signal Hill, Los Angeles,Pasadena, Santa Fe Springs, Santa Monica, Torrance, Vernon
MADERA COUNTY CUPA:
* Environmental Health Department
MARIN COUNTY CUPA:
* County of Marin Office of Waste Management
* City of San Rafael Fire Department
MARIPOSA COUNTY CUPA:
* Health Department
MENDOCINO COUNTY CUPA:
* Environmental Health Department
MERCED COUNTY CUPA:
* Division of Environmental Health
MODOC COUNTY CUPA:
* Department of Agriculture
MONO COUNTY CUPA:
* Health Department
MONTEREY COUNTY CUPA:
* Environmental Health Division
NAPA COUNTY CUPA:
* Hazardous Materials Section
NEVADA COUNTY CUPA:
* Environmental Health Department
ORANGE COUNTY CUPAS:
* County of Orange Environmental Health Department
* Cities of Anaheim, Fullerton, Orange, Santa Ana
* County of Orange Environmental Health Department
PLACER COUNTY CUPAS:
* County of Placer Division of Environmental Health Field Office
* Tahoe City
* City of Roseville Roseville Fire Department
PLUMAS COUNTY CUPA:
* Environmental Health Department
RIVERSIDE COUNTY CUPA:
* Environmental Health Department
SACRAMENTO COUNTY CUPA:
* County Environmental Mgmt Dept, Haz. Mat. Div.
SAN BENITO COUNTY CUPA:
* City of Hollister Environmental Service Department
SAN BERNARDINO COUNTY CUPAS:
* County of San Bernardino Fire Department, Haz. Mat. Div.
* City of Hesperia Hesperia Fire Prevention Department
*City of Victorville Victorville Fire Department
SAN DIEGO COUNTY CUPA:
* The San Diego County Dept. of Environmental Health HE 17/58
SAN FRANCISCO COUNTY CUPA:

* Department of Public Health
SAN JOAQUIN COUNTY CUPA:
* Environmental Health Division
SAN LUIS OBISPO COUNTY CUPAS:
* County of San Luis Obispo Environmental Health Division
* City of San Luis Obispo City Fire Department
SAN MATEO COUNTY CUPA:
* Environmental Health Department
SANTA BARBARA COUNTY CUPA:
* County Fire Dept Protective Services Division
SANTA CLARA COUNTY CUPAS:
* County of Santa Clara Hazardous Materials Compliance Division
* Santa Clara County Central Fire Protection District (Covers Campbell, Cupertino, Los Gatos, & Morgan Hill)
* Cities of Gilroy, Milpitas, Mountain View, Palo Alto, San Jose Fire, Santa Clara, Sunnyvale
SANTA CRUZ COUNTY CUPA:
* Environmental Health Department
SHASTA COUNTY CUPA:
* Environmental Health Department
SIERRA COUNTY CUPA:
* Health Department
SISKIYOU COUNTY CUPA:
* Environmental Health Department
SONOMA COUNTY CUPAS:
* County of Sonoma Department Of Environmental Health
* Cities of Healdsburg / Sebastopol, Petaluma, Santa Rosa
STANISLAUS COUNTY CUPA:
* Department of Environmental Resources Haz. Mat. Division
SUTTER COUNTY CUPA:
* Department of Agriculture
TEHAMA COUNTY CUPA:
* Department of Environmental Health
TRINITY COUNTY CUPA:
* Department of Health
TULARE COUNTY CUPA:
* Environmental Health Department
TUOLUMNE COUNTY CUPA:
* Environmental Health
VENTURA COUNTY CUPAS:
* County of Ventura Environmental Health Division
* Cities of Oxnard, Ventura
YOLO COUNTY CUPA:
* Environmental Health Department
YUBA COUNTY CUPA:

Updated quarterly/annually/when available

State/Tribal IC: ***CA EPA*** The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

State/Tribal VCP: ***CA EPA*** The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

Floodplains: ***FEMA*** Federal Emergency Management Agency

Updated when available

RADON: ***NTIS*** Environmental Protection Agency, National Technical Information Services

Updated periodically

State Permits: ***CA COUNTY*** The San Diego County Depart. Of Environmental Health
Phone:(619) 338-2211
San Bernardino County Fire Department

Updated quarterly/when available

State Other: ***CA EPA/COUNTY*** The CAL EPA, Depart. Of Toxic Substances Control
Phone: (916) 323-3400
The Los Angeles County Hazardous Materials Division
Phone: (323) 890-7806
Orange County Environmental Health Agency
Phone: (714) 834-3536
Riverside County Department of Environmental Health, Hazardous Materials Management Division
Phone:(951) 358-5055
Sacramento County Environmental Management Department

Updated quarterly/when available

OIL & GAS WELLS: ***CADC*** California Department of Conservation.

Updated quarterly

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: 14116 TEMESCAL CANYON ROAD
LAKE ELSINORE CA 92530

JOB: ALBERHILL

Street Name	Dist/Dir	Street Name	Dist/Dir
Concordia Ranch Rd	0.04 SE		
Hostettler Rd	0.20 SE		
I-15	0.09 SW		
Love Ln	0.16 NW		
Temescal Canyon Rd	0.03 SW		

Environmental FirstSearch

1 Mile Radius

Single Map:

14116 TEMESCAL CANYON ROAD, LAKE ELSINORE CA 92530

Source: U.S. Census TIGER Files

Target Site (Latitude: 33.73446 Longitude: -117.414011) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Floodplains: 100 Year, 500 Year .....

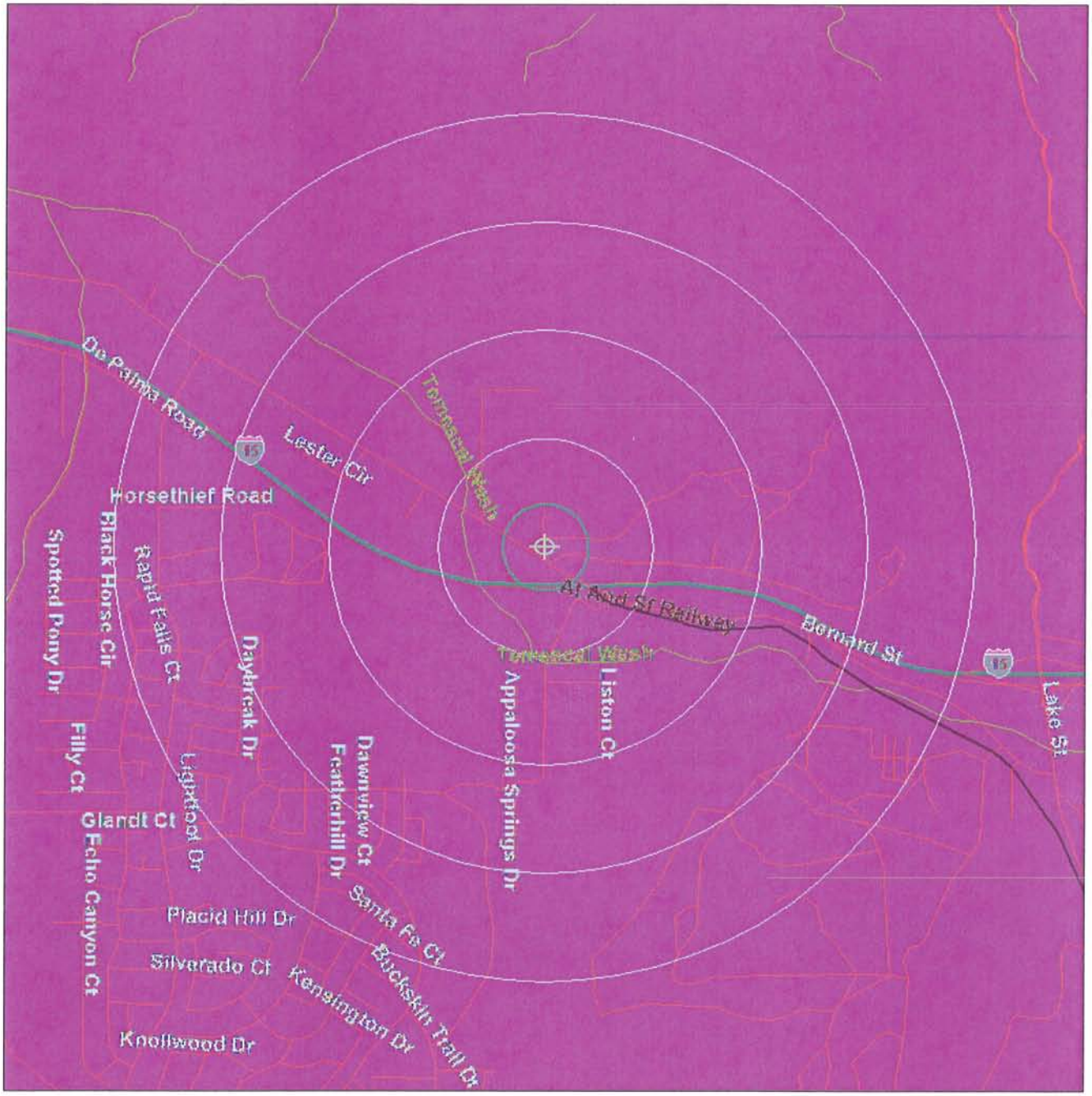
Oil Gas Wells .....

Environmental FirstSearch

1 Mile Radius

ASTM-05: NPL, RCRACOR, STATE, FLOODZONE

14116 TEMESCAL CANYON ROAD, LAKE ELSINORE CA 92530



Source: U.S. Census TIGER Files

Target Site (Latitude: 33.73446 Longitude: -117.414011)

Identified Site, Multiple Sites, Receptor

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand

Railroads

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Floodplains: 100 Year, 500 Year

Oil Gas Wells

Environmental FirstSearch

.5 Mile Radius

ASTM-05: Multiple Databases

14116 TEMESCAL CANYON ROAD, LAKE ELSINORE CA 92530

Source: U.S. Census TIGER Files

Target Site (Latitude: 33.73446 Longitude: -117.414011) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Floodplains: 100 Year, 500 Year .....

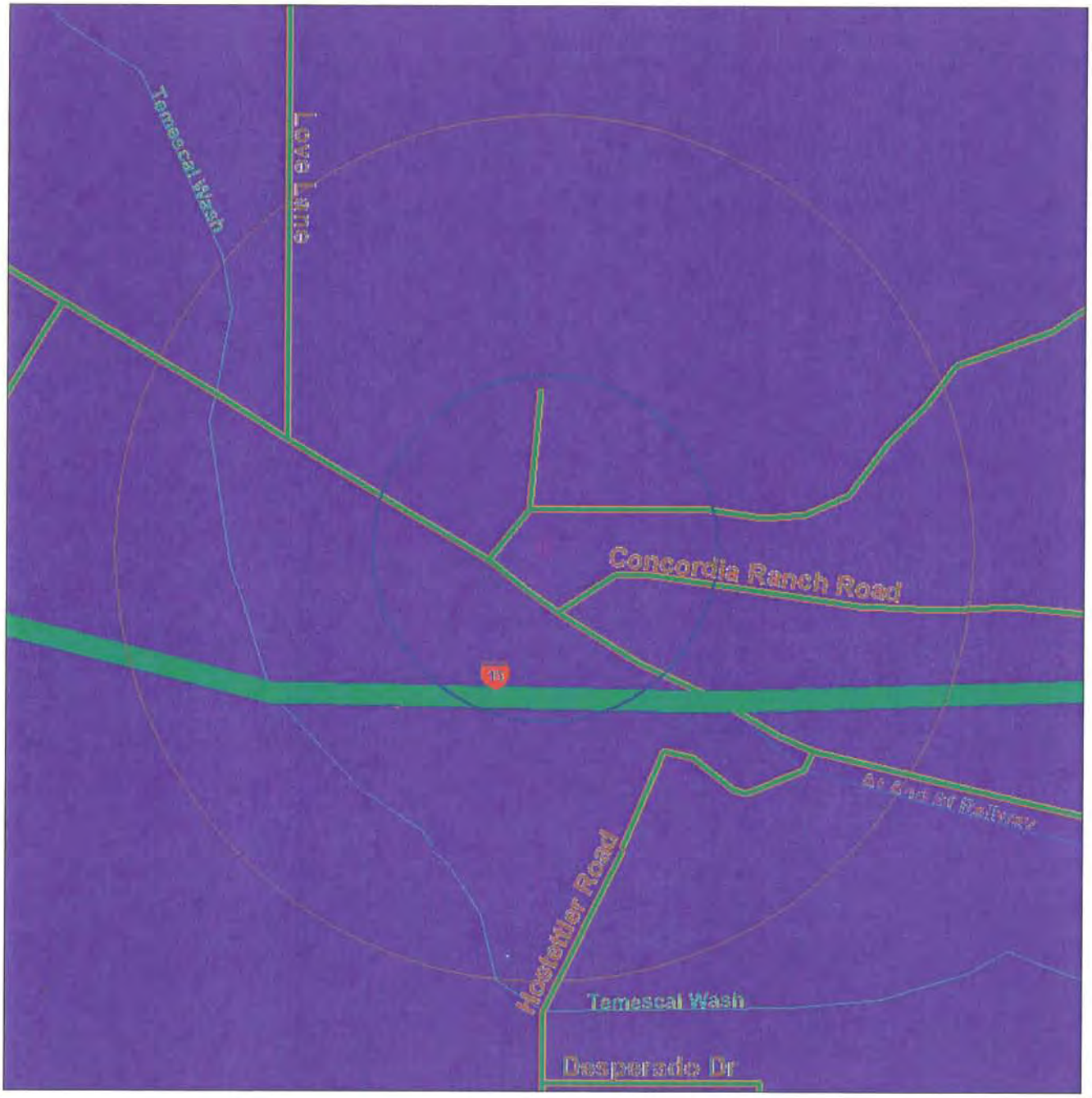
Oil Gas Wells .....

Environmental FirstSearch

.25 Mile Radius

ASTM-05: RCRAGEN, UST, PERMITS, OTHER

14116 TEMESCAL CANYON ROAD, LAKE ELSINORE CA 92530



Source: U.S. Census TIGER Files

Target Site (Latitude: 33.73446 Longitude: -117.414011) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Floodplains: 100 Year, 500 Year .....

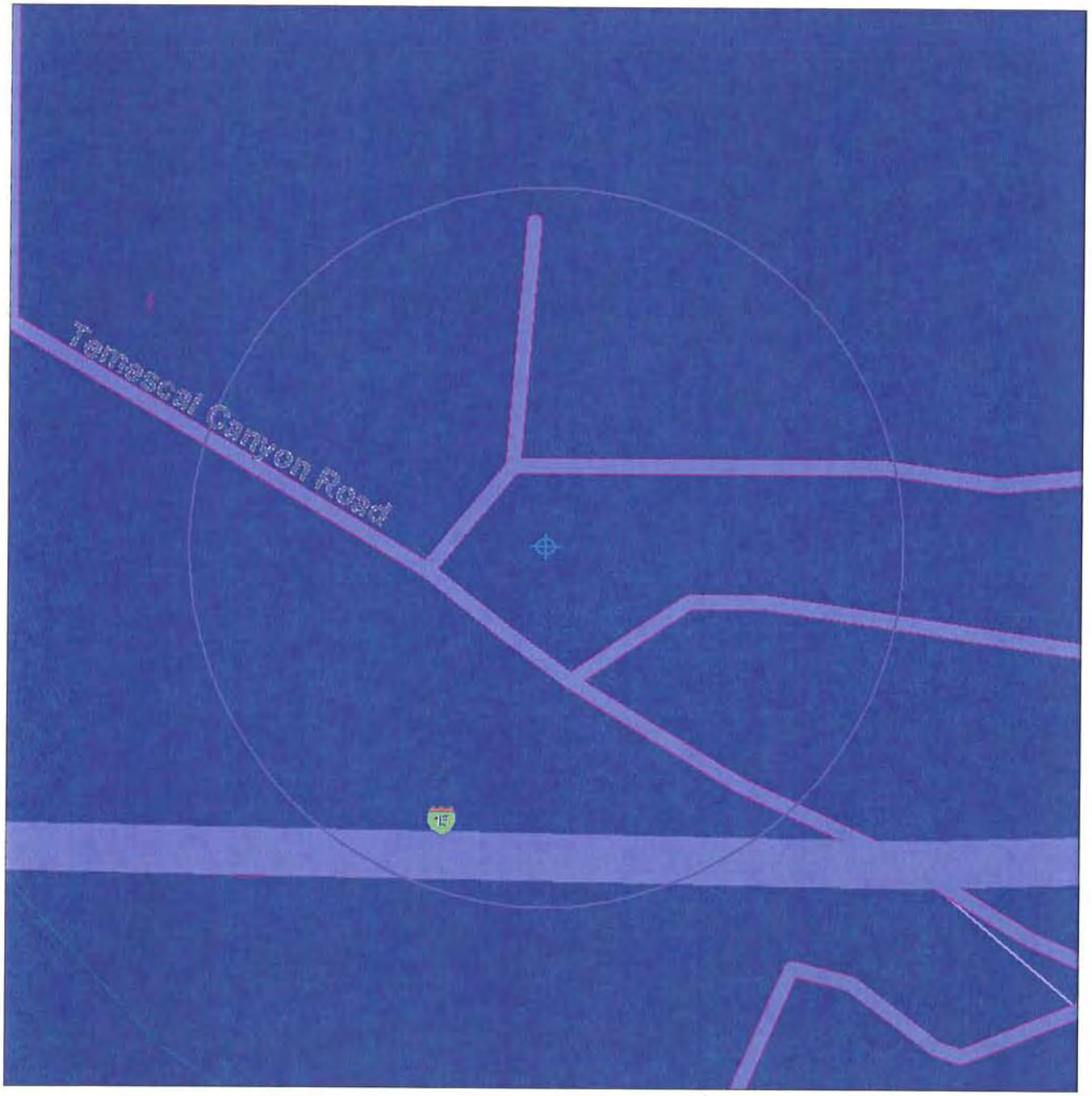
Oil Gas Wells .....

Environmental FirstSearch

.12 Mile Radius

ASTM-05: SPILLS90, ERNS, RCRANLR

14116 TEMESCAL CANYON ROAD, LAKE ELSINORE CA 92530



Source: U.S. Census TIGER Files

Target Site (Latitude: 33.73446 Longitude: -117.414011) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Floodplains: 100 Year, 500 Year .....

Oil Gas Wells .....

Appendix F

Owners and User Questionnaires

OWNER/OCCUPANT INTERVIEW
PHASE I ESA

Property Location:

Answers to the questionnaire should be provided by one or more of the following:

- The current owner of the property listed above.
- Any major occupant of the property listed above.
- Any occupant of the property listed above likely using, treating, generating, storing, or disposing of hazardous substances or petroleum products on or from the property.

The objective of this questionnaire is to obtain information indicating recognized environmental conditions with the property. The questions should be answered in good faith and to the extent reasonably ascertainable based on observations, site records, and knowledge of or experience with operations on the property. This questionnaire is based on the ASTM Standard E1528-00 guidelines for Environmental Site Assessments for Commercial Real Estate.

"Yes" answers should be explained in the comments section at the end of the questionnaire.

"Unk" denotes unknown.

This questionnaire was completed by:	
Owner/Operator Name:	Angela S. Keeler Trustee
Relationship to the property:	owner
Company:	Angela Conceld Living Trust
Address:	2262 Salt Air Dr. Santa Ana 92705
Telephone:	714-544-3257
Date Completed:	9.10.09
Preparer's Name (if not completed by owner/operator):	
Preparer's relationship to the property:	
Preparer's address:	
Preparer's telephone:	

Owner/Preparer represents that to the best of their knowledge the following statements and facts are true and correct and to the best of their actual knowledge, no material facts have been suppressed or misstated.

Signature:	*Date:* 9-10-09
Signature:	*Date:*

OWNER/OCCUPANT INTERVIEW
PHASE I ESA

1a. Is the *property* used for an industrial use?	Yes	(No)	Unk
1b. Is any *adjoining property* used for an industrial use?	Yes	No	(Unk)
2a. Did you observe evidence or do you have any prior knowledge that the *property* has been used for an industrial use in the past?	Yes	(No)	Unk
2b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used for an industrial use in the past?	Yes	No	(Unk)
3a. Is the *property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	(No)	Unk
3b. Is any *adjoining property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	(Unk)
4a. Did you observe evidence or do you have any prior knowledge that the *property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	(No)	Unk
4b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	(Unk)
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate	Yes	(No)	Unk
5b. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the *property* or at the facility?	Yes	(No)	Unk
6a. Are there currently any industrial *drums* (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes	(No)	Unk

AUBICON

OWNER/OCCUPANT INTERVIEW
PHASE I ESA

6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial *drums* (typically 55 gal (208 L)) or *sacks* of chemicals located on the property or at the facility?	Yes	(No)	Unk
7a. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the property that originated from a contaminated site?	Yes	(No)	Unk
7b. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the property that is of an *unknown* origin?	Yes	(No)	Unk
8a. Are there currently any *pits, ponds, or lagoons* located on the *property* in connection with waste treatment or waste disposal?	Yes	(No)	Unk
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any *pits, ponds, or lagoons* located on the *property* in connection with waste treatment or waste disposal?	Yes	(No)	Unk
9a. Is there currently any stained soil on the *property*?	Yes	(No)	Unk
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the *property*?	Yes	(No)	Unk
10a. Are there currently any registered or unregistered storage tanks (above or underground) located on the *property*?	Yes	(No)	Unk
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the *property*?	Yes	(No)	Unk
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	(No)	Unk
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	(No)	Unk
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	Yes	(No)	Unk
12b. Did you observe evidence or do you have any prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring drains, walls, ceilings or exposed grounds on the property?	Yes	(No)	Unk
13a. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Yes	(No)	Unk

OWNER/OCCUPANT INTERVIEW
PHASE I ESA

13b. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	Yes	(No)	Unk
14. Does the *owner* or *occupant* of the *property* have any knowledge of *environmental liens* or governmental notification relating to past or recurrent violations of environmental laws with respect to the *property* or any facility located on the *property*?	Yes	(No)	Unk
15a. Has the *owner* or *occupant* of the *property* been informed of the past existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?	Yes	(No)	Unk
15b. Has the *owner* or *occupant* of the *property* been informed of the current existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?	Yes	(No)	Unk
15c. Has the *owner* or *occupant* of the *property* been informed of the past existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	(No)	Unk
15d. Has the *owner* or *occupant* of the *property* been informed of the current existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	(No)	Unk
16. Does the *owner* or *occupant* of the *property* have any knowledge of any *environmental site assessment* of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?	Yes	(No)	Unk
17. Does the *owner* or *occupant* of the *property* know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum product* involving the *property* by any owner or occupant of the *property*?	Yes	(No)	Unk
18a. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a storm water system?	Yes	(No)	Unk
18b. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a sanitary sewer system?	Yes	(No)	Unk
19. Did you observe evidence or do you have any prior knowledge that any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the *property*?	Yes	(No)	Unk
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes	(No)	Unk

OWNER/OCCUPANT INTERVIEW
PHASE I ESA

HELPFUL DOCUMENTS: Do any of the following documents exist for the property? Yes No (Unk)

- Environmental Site Assessment Reports/Environmental Audit Reports.
- Reports regarding hydrogeologic conditions or geotechnical studies.
- Environmental permits (including storage tank registrations).
- Material safety data sheets for chemicals stored or used on the property.
- Community Right to Know Plan; Safety Plan; Preparedness & Prevention Plan; Spill Prevention, Countermeasures, and Control Plan.
- Hazardous Waste Generator Notices or Reports.
- Notice or correspondence from any government agency relating to past or current violation of environmental laws with respect to the property.

COMMENTS (Explain any "Yes" answers to the preceding questions)

- END OF QUESTIONNAIRE -

RUBICON

OWNER/OCCUPANT INTERVIEW
PHASE I ESA

Property Location:

Alberhill, CA

Riverside County APNs 391-120-023 & 391-160-021

Answers to the questionnaire should be provided by one or more of the following:

- The current owner of the property listed above.
- Any major occupant of the property listed above.
- Any occupant of the property listed above likely using, treating, generating, storing, or disposing of hazardous substances or petroleum products on or from the property.

The objective of this questionnaire is to obtain information indicating recognized environmental conditions with the property. The questions should be answered in good faith and to the extent reasonably ascertainable based on observations, site records, and knowledge of or experience with operations on the property. This questionnaire is based on the ASTM Standard E1528-00 guidelines for Environmental Site Assessments for Commercial Real Estate.

"Yes" answers should be explained in the comments section at the end of the questionnaire.

"Unk" denotes unknown.

This questionnaire was completed by:	
Owner/Operator Name:	William M. Smith, trustee
Relationship to the property:	
Company:	
Address:	
Telephone:	
Date Completed:	11 September 2009
Preparer's Name (if not completed by owner/operator):	
Preparer's relationship to the property:	Owner
Preparer's address:	591 Mt. Hunter Way, Boulder City, NV 89005
Preparer's telephone:	

Owner/Preparer represents that to the best of their knowledge the following statements and facts are true and correct and to the best of their actual knowledge, no material facts have been suppressed or misstated.

Signature: Wm Smith	*Date:* 11 September 2009
Signature:	*Date:*

1a. Is the *property* used for an industrial use?	Yes	No	Unk
1b. Is any *adjoining property* used for an industrial use?	Yes	No	Unk
2a. Did you observe evidence or do you have any prior knowledge that the *property* has been used for an industrial use in the past?	Yes	No	Unk
2b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used for an industrial use in the past?	Yes	No	Unk
3a. Is the *property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
3b. Is any *adjoining property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
4a. Did you observe evidence or do you have any prior knowledge that the *property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
4b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate	Yes	No	Unk
5b. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the *property* or at the facility?	Yes	No	Unk
6a. Are there currently any industrial *drums* (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes	No	Unk

ALL UNKNOWN

6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial *drums* (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes	No	Unk
7a. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the property that originated from a contaminated site?	Yes	No	Unk
7b. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the property that is of an unknown origin?	Yes	No	Unk
8a. Are there currently any *pits, ponds*, or *lagoons* located on the *property* in connection with waste treatment or waste disposal?	Yes	No	Unk
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any *pits, ponds*, or *lagoons* located on the *property* in connection with waste treatment or waste disposal?	Yes	No	Unk
9a. Is there currently any stained soil on the *property*?	Yes	No	Unk
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the *property*?	Yes	No	Unk
10a. Are there currently any registered or unregistered storage tanks (above or underground) located on the *property*?	Yes	No	Unk
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the *property*?	Yes	No	Unk
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	No	Unk
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	No	Unk
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	Yes	No	Unk
12b. Did you observe evidence or do you have any prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring drains, walls, ceilings or exposed grounds on the property?	Yes	No	Unk
13a. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Yes	No	Unk

ALL UNKNOWN

13b. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	Yes	No	Unk	
14. Does the *owner* or *occupant* of the *property* have any knowledge of *environmental liens* or governmental notification relating to past or recurrent violations of environmental laws with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	
15a. Has the *owner* or *occupant* of the *property* been informed of the past existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	
15b. Has the *owner* or *occupant* of the *property* been informed of the current existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	
15c. Has the *owner* or *occupant* of the *property* been informed of the past existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	
15d. Has the *owner* or *occupant* of the *property* been informed of the current existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	No	Unk	ALL UNKNOWN
16. Does the *owner* or *occupant* of the *property* have any knowledge of any *environmental site assessment* of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?	Yes	No	Unk	
17. Does the *owner* or *occupant* of the *property* know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum products* involving the *property* by any owner or occupant of the *property*?	Yes	No	Unk	
18a. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a storm water system?	Yes	No	Unk	
18b. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a sanitary sewer system?	Yes	No	Unk	
19. Did you observe evidence or do you have any prior knowledge that any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the *property*?	Yes	No	Unk	
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes	No	Unk	

HELPFUL DOCUMENTS: Do any of the following documents exist for the property? Yes No Unk

- Environmental Site Assessment Reports/Environmental Audit Reports.
- Reports regarding hydrogeologic conditions or geotechnical studies.
- Environmental permits (including storage tank registrations).
- Material safety data sheets for chemicals stored or used on the property.
- Community Right to Know Plan; Safety Plan; Preparedness & Prevention Plan; Spill Prevention, Countermeasures, and Control Plan.
- Hazardous Waste Generator Notices or Reports.
- Notice or correspondence from any government agency relating to past or current violation of environmental laws with respect to the property.

COMMENTS (Explain any "Yes" answers to the preceding questions)

I purchased this property from the State of California and have

no information as to it's history.

- END OF QUESTIONNAIRE -

OWNER/OCCUPANT INTERVIEW
PHASE I ESA

Property Location:

Answers to the questionnaire should be provided by one or more of the following:

- The current owner of the property listed above.
- Any major occupant of the property listed above.
- Any occupant of the property listed above likely using, treating, generating, storing, or disposing of hazardous substances or petroleum products on or from the property.

The objective of this questionnaire is to obtain information indicating recognized environmental conditions with the property. The questions should be answered in good faith and to the extent reasonably ascertainable based on observations, site records, and knowledge of or experience with operations on the property. This questionnaire is based on the ASTM Standard E1528-00 guidelines for Environmental Site Assessments for Commercial Real Estate.

"Yes" answers should be explained in the comments section at the end of the questionnaire.

"Unk" denotes unknown.

This questionnaire was completed by:	
Owner/Operator Name:	THOMAS J. BOYLE
Relationship to the property:	Owner
Company:	
Address:	1410 Idaho Cyn Rd.
Telephone:	951-454-3576
Date Completed:	
Preparer's Name (if not completed by owner/operator):	
Preparer's relationship to the property:	
Preparer's address:	
Preparer's telephone:	

Owner/Preparer represents that to the best of their knowledge the following statements and facts are true and correct and to the best of their actual knowledge, no material facts have been suppressed or misstated.

Signature: Thomas J. Boyle	*Date:* 9/21/09
Signature:	*Date:*

1a. Is the *property* used for an industrial use?	Yes	No	Unk
1b. Is any *adjoining property* used for an industrial use?	Yes	No	Unk
2a. Did you observe evidence or do you have any prior knowledge that the *property* has been used for an industrial use in the past?	Yes	No	Unk
2b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used for an industrial use in the past?	Yes	No	Unk
3a. Is the *property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
3b. Is any *adjoining property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
4a. Did you observe evidence or do you have any prior knowledge that the *property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
4b. Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate	---	No	Unk
5b. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the *property* or at the facility?	Yes	No	Unk
6a. Are there currently any industrial *drums* (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes	No	Unk

6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial *drums* (typically 55 gal (208 L)) or sacks of chemicals located on the property or at the facility?	Yes	(No)	Unk
7a. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the property that originated from a contaminated site?	Yes	(No)	Unk
7b. Did you observe evidence or do you have any prior knowledge that *fill dirt* has been brought onto the property that is of an unknown origin?	Yes	(No)	Unk
8a. Are there currently any *pits, ponds, or lagoons* located on the *property* in connection with waste treatment or waste disposal?	Yes	(No)	Unk
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any *pits, ponds, or lagoons* located on the *property* in connection with waste treatment or waste disposal?	Yes	(No)	Unk
9a. Is there currently any stained soil on the *property*?	Yes	(No)	Unk
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the *property*?	Yes	(No)	Unk
10a. Are there currently any registered or unregistered storage tanks (above or underground) located on the *property*?	Yes	(No)	Unk
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the *property*?	Yes	(No)	Unk
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	(No)	Unk
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	Yes	(No)	Unk
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	Yes	(No)	Unk
12b. Did you observe evidence or do you have any prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring drains, walls, ceilings or exposed grounds on the property?	Yes	(No)	Unk
13a. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Yes	(No)	Unk

Here is a Septic tank

13b. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	Yes	No	Unk
14. Does the *owner* or *occupant* of the *property* have any knowledge of *environmental liens* or governmental notification relating to past or recurrent violations of environmental laws with respect to the *property* or any facility located on the *property*?	Yes	No	Unk
15a. Has the *owner* or *occupant* of the *property* been informed of the past existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?	Yes	No	Unk
15b. Has the *owner* or *occupant* of the *property* been informed of the current existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?	Yes	No	Unk
15c. Has the *owner* or *occupant* of the *property* been informed of the past existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	No	Unk
15d. Has the *owner* or *occupant* of the *property* been informed of the current existence of environmental violations with respect to the *property* or any facility located on the *property*?	Yes	No	Unk
16. Does the *owner* or *occupant* of the *property* have any knowledge of any *environmental site assessment* of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?	Yes	No	Unk
17. Does the *owner* or *occupant* of the *property* know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum products* involving the *property* by any owner or occupant of the *property*?	Yes	No	Unk
18a. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a storm water system?	Yes	No	Unk
18b. Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the *property* and/or into a sanitary sewer system?	Yes	No	Unk
19. Did you observe evidence or do you have any prior knowledge that any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the *property*?	Yes	No	Unk
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes	No	Unk

HELPFUL DOCUMENTS: Do any of the following documents exist for the property? Yes No Unk

- Environmental Site Assessment Reports/Environmental Audit Reports.
- Reports regarding hydrogeologic conditions or geotechnical studies.
- Environmental permits (including storage tank registrations).
- Material safety data sheets for chemicals stored or used on the property.
- Community Right to Know Plan; Safety Plan; Preparedness & Prevention Plan; Spill Prevention, Countermeasures, and Control Plan.
- Hazardous Waste Generator Notices or Reports.
- Notice or correspondence from any government agency relating to past or current violation of environmental laws with respect to the property.

COMMENTS (Explain any "Yes" answers to the preceding questions)

- END OF QUESTIONNAIRE -

ASTM 1527-05 - USER QUESTIONNAIRE

(1.) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).
Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law?

No

(2.) Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).
Are you aware of any AULs, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

No

(3.) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).
As the *user* of this *ESA* do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

No

(4.) Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).
Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?

Yes

(5.) Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30).
Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example, as *user*,

(a.) Do you know the past uses of the *property*? Residential & Rural Ranch

(b.) Do you know of specific chemicals that are present or once were present at the *property*? No

(c.) Do you know of spills or other chemical releases that have taken place at the *property*? No

(d.) Do you know of any environmental cleanups that have taken place at the *property*? No

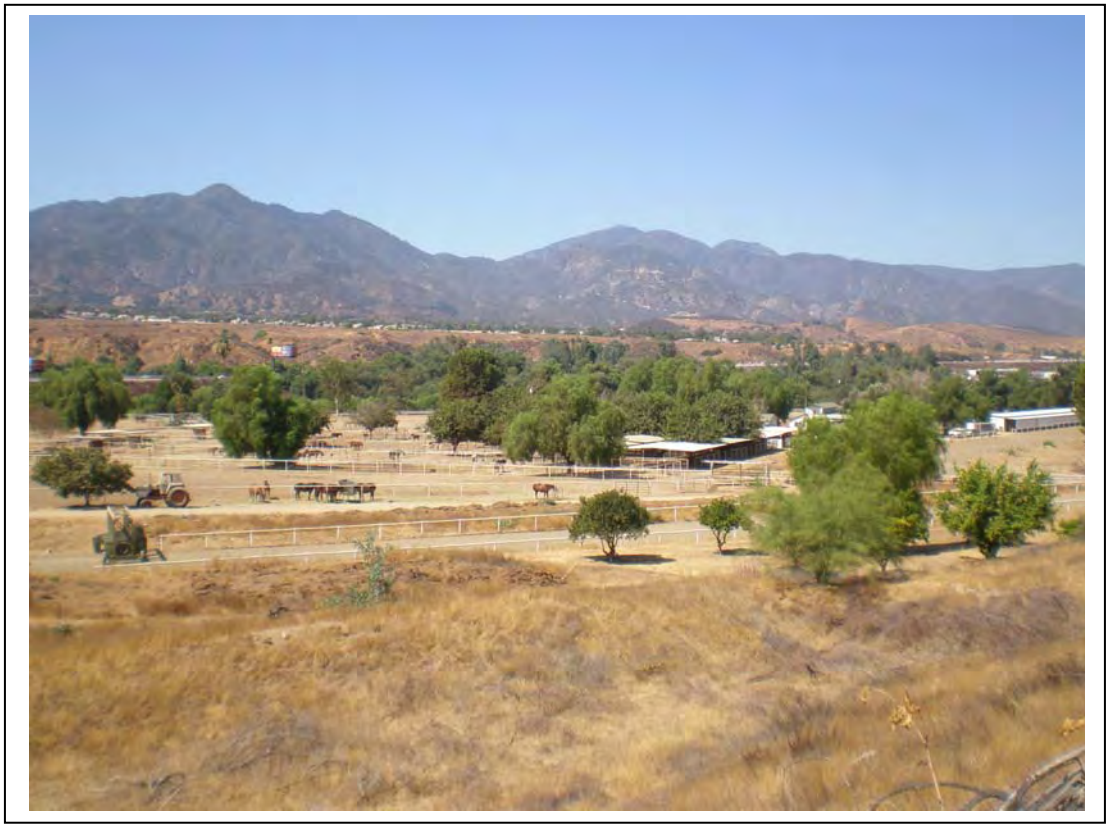
(6.) The degree of obviousness of the presence of likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).
As the *user* of this *ESA*, based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

No

Appendix G

Photographs

(1). Access Road to APN 391-120-003 and Western Boundary of the Site Looking North



(2). Horse Ranch on the W Portion of the Site Looking Southwest

(3). Vacant Land on the Eastern Portion of the Site Looking North

(4). Mr. Thomas Boyle's Residence (APN 391-120-003)

Picture (5). Horse Track Looking Southeast

Picture (6). Animal Pens in the Horse Track

Picture (7). Horse Barn

Picture (8). Horse Corrals

Picture (9). Residential Dwelling at the Horse Ranch

Picture (10). Garage Building and Trash Bin at the Horse Ranch

Picture (11). 55-Gallon Drums containing Horse Feeds

Picture (12). Aboveground Water Tank at the Horse Ranch

Picture (13). Abandoned Mobil Home at the Northwestern Corner of the Horse Ranch

Picture (14). Fiberglass Pieces at the Northwestern Corner of the Horse Ranch

Picture (15). Adjoining Property to the West (Vacant Land)

Picture (16). Adjoining Property to the North of Horse Ranch (Trucking Company)

Picture (17). Adjoining Property to the East (Mostly Vacant Land with Several Residential Dwellings)

Picture (18). Adjoining Property to the South (Vacant Land, Concordia Road, and 15 Freeway)

Appendix H

Qualifications of
Environmental Professional

MOHSEN MEHRAN, Ph. D.

Principal Hydrologist

FIELDS OF EXPERTISE

Dr. Mehran's academic background and consulting experience in the last 35 years focus on hydrogeology and ground water quality. He has taught advanced courses in ground water hydrology, contaminant transport in fractured/porous media, and soil mechanics. He has been the principal investigator and manager for Remedial Investigation/Feasibility Studies; RCRA Facility Investigations, risk assessment; and design, installation, and operation of remediation systems. He has developed and applied numerous computer models to solve ground water flow problems and investigate the migration of various chemical compounds in fractured/porous media - e.g., petroleum compounds, hexavalent chromium and other metals, chlorinated solvents, herbicides, volatile organic compounds, and numerous other chemicals. He has applied this technical specialty to site characterization, evaluation of remedial alternatives, development of cleanup criteria, and allocation of cost among potentially-responsible parties for the aerospace, petroleum, electronics, chemical, wood preserving, communications, and other industries.

Dr. Mehran is active professionally by publishing and has been a reviewer for the *Journal of Ground Water* and *Journal of Ground Water Monitoring and Remediation*. Dr. Mehran provides legal support and expert witness testimony for cases related to causes of contamination, identification of multiple sources of contamination, and cost recovery/allocation. He has published more than 50 technical papers.

EDUCATION

Ph.D., 1971, Civil Engineering University of California, Davis

M.S., 1966, Soil Physics University of California, Davis

B.S., 1962, Agricultural Engineering, Tehran University

PROFESSIONAL REGISTRATIONS

Certified Ground Water Professional No. 189

Qualified Environmental Professional - Institute of Professional Environmental Practice

EMPLOYMENT HISTORY

2004 to present	Principal Hydrologist, Rubicon Engineering Corporation
2000 to 2004	Chief Executive Officer, England Geosystem, Inc.
1986 to 2000	Principal-in-Charge and Project Manager, Geosystem Consultants, Inc., Irvine, California
1981 to 1985	Project Manager/Technical Specialist – Hydrogeology, IT Corporation Irvine, California

1979 to 1981	Staff Scientist, Lawrence Berkeley Laboratory, Berkeley, California
1977 to 1979	Visiting Associate Professor, University of California, Davis, California
1974 to 1977	Associate Professor, Civil Engineering Department, Tehran Polytechnique, Iran
1971 to 1974	Post-Graduate Scientist, University of California, Davis, California

SELECT PROJECT EXPERIENCE

- Project manager and principal investigator of RCRA Facility Investigation/Corrective Measures Study at two chemical distribution facilities in Los Angeles, California since 1987 with the oversight of California Department of Toxic Substances Control (DTSC); Responsible for negotiation with DTSC in drafting a Corrective Action Consent Agreement.

- Technical expert for the allocation of responsibility and costs of remediation related to volatile organic compounds and hexavalent chromium in ground water – Burbank versus Glendale Operating Units (OUs) and the Potentially Responsible Parties (PRPs) within the Glendale North and Glendale South. This included assessment of the contribution by Burbank OU to contamination in Glendale OUs and by various PRPs within the Glendale OUs using ground water and contaminant transport modeling.

- Principal investigator and expert witness in more than 15 environmental cases representing the private sector and government agencies on behalf of plaintiffs and defendants.

- Principal investigator and project manager in evaluation and remediation of sites contaminated with tetrachloroethene (PCE) originated from dry cleaning operations.

- Principal investigator for remediation of soil and ground water impacted by TCE and methylene chloride at an aerospace facility in Long Beach, California.

- Principal investigator for Focused Feasibility Study for remediation of chlorinated hydrocarbons in soil and ground water at a manufacturing facility in Los Angeles.

- Conducted hydrologic investigations and prepared site-specific numeric models of transport of contaminants (chlorinated solvents, petroleum hydrocarbons, semi-volatile organic compounds, and metals) in soils and ground water.

- Responsible for conducting evaluations of cleanup alternatives, negotiating with state and federal agencies, preparing Remedial Action Plans, and conducting remedial actions at sites throughout California.

- Designed and evaluated extraction/treatment system to remediate dissolved TCE migration in a fractured sandstone formation; assessed remedial action effectiveness.

- Investigated hexavalent chromium contamination in soil and ground water at Superfund sites, performed geochemical studies to assess sources of hexavalent chromium and its migration

behavior, conducted feasibility studies to select the most appropriate remedial technology, and performed pilot tests to evaluate the feasibility of in situ remediation technologies.

– Evaluated migration pathways of TCE, 1,2-dichloroethene, and carbon tetrachloride in fractured limestone formation and developed containment and remedial technologies.

– Demonstrated natural attenuation of chlorinated hydrocarbons in drinking water aquifer to support site closure.

– Evaluated effectiveness of ground water remediation program to reduce the concentrations of methylene chloride, TCE, and tetrachloroethene in a multilayered aquifer system

– Modeled ground water flow and ethylene dibromide (EDB) transport to evaluate the effectiveness of an extraction/injection program at a chemical manufacturing facility and prepared technical reports in accordance with the requirements of the California Regional Water Quality Control Board.

– Conducted a soil and ground water investigation to delineate the extent of hexavalent chromium contamination in Ukiah, California – including site characterization, geochemical evaluation of leaching of chromium, hydrogeologic studies, Remedial Action Plan preparation, and in-situ remediation assessment.

– Performance of a comprehensive RI/FS at a site in Central Valley, California. Hexavalent chromium, trivalent chromium, and arsenic were the principal chemicals of concern. Activities involved over 50 ground water monitoring wells; drilling and sampling of more than 120 borings; evaluation of in-situ remediation technologies and feasibility study.

– Taught courses in advanced ground water hydrology, contaminant transport modeling, and soil mechanics. Continued research in transport phenomena in fractured/porous media. Dr. Mehran has supervised numerous graduate students on various research topics.

– Responsible for fundamental formulation and computer model development of the simultaneous transport of water, contaminant, and heat in fractured/porous media and evaluation of the hydrogeologic consequences of dewatering deep formations. Utilizing numerical models developed the capability of simulating the long-term effects of dewatering and reinvasion of water by considering saturated-unsaturated flow in fractured shale formations. A practical application of this research relates to the migration of dissolved organic constituents and radionuclides in fractured formations.

– Conducted research on transport and transformation of various nitrogen species in soils under saturated and unsaturated flow conditions, applied to nitrate pollution of ground water. This work was supported by the National Science Foundation. The computer models developed by Dr. Mehran have been successfully applied to the behavior of nitrogen and other chemical compounds in actual field problems.

PROFESSIONAL AFFILIATIONS

American Geophysical Union
American Chemical Society
Association of Ground Water Scientists and Engineers
National Ground Water Association
Member of the Research Advisory Board of the National Water Research Institute

PUBLICATIONS

Mehran, M., "Influence of Soil Moisture Suction on Soil Tensile and Compressive Strength," M.S. Thesis, University of California, Davis, 1966.

Mehran, M., "Development of Air Force Erosion Control Manual," report to Water Resources Engineers, Inc., Walnut Creek, California, 1969.

Mehran, M., "Electrical Dispersion and Electrokinetic Phenomena in Clays," Ph.D. Dissertation, University of California, 1971.

Mehran, M., and K.K. Tanji, "Chemical Transport in Flooded Rice Fields," paper presented before the Environmental Division of American Society of Agronomy Meeting, November 1, 1972, Miami, Florida.

Mehran, M., K.K. Tanji, J.W. Biggar, and D.W. Henderson, "Chemical Transport under Different Water Management Systems," Proceedings of 14th Rice Tech., Working Group, p. 72, 1972.

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Tanji, K.K., M. Mehran, J.W. Biggar, and D.W. Henderson, "Flood and Seepage Water Sampling Techniques in Rice Fields under Different Water Management Systems," Soil Science Society of America, Proceedings 37:483-485, 1973.

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Tanji, K.K., J.W. Biggar, M. Mehran, and D.W. Henderson, "Herbicide Persistence and Movement Studies with Molinate in Rice Irrigation Management," California Agriculture 28(5):10-12, 1974.

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Tanji, K.K., T.K. Kam, and M. Mehran, "Nitrogen Studies in Secondary Sewage Percolation Ponds," Symposium on Nitrogen Transport and Transformation, Chicago, Illinois, 1974.

Mehran, M., "Contamination of Surface and Ground Waters by Nitrogenous Compounds," Proceedings of 24th Iranian Medical Congress, Ramsar, Iran, September 1975.

Mehran, M., and K. Arulanandan, "Low Frequency Conductivity Dispersion in Clay-Water-Electrolyte Systems," Clays and Clay Minerals 25:38-48, 1977.

Tanji, K.K., F.E. Broadbent, M. Mehran, and M. Fried, "An Extended Version of a Conceptual Model for Evaluating Annual Nitrogen Leaching Losses from Croplands," Journal of Environmental Quality 8(1):114-120, 1979.

Tanji, K.K., and M. Mehran, "Nitrogen Modeling in Croplands," final report, Nitrate in Effluents from Irrigated Agriculture for National Science Foundation, Grant No. ENV 76-10283 A01, 1979.

Mehran, M., T.N. Narasimhan, and J.P. Fox, "An Investigation of Dewatering for the Modified In-situ Retorting Process, Peance Basin, Colorado," Lawrence Berkeley Laboratory Report No. LBL-11819, 1980.

Mehran, M., K.K. Tanji, and I.K. Iskandar, "Compartmental Modeling for Prediction of Nitrate Leaching Losses," Chapter 16 in: Modeling Wastewater Renovation by Land Treatment. I.K. Iskandar (ed.), John Wiley and Sons, 1981.

Gupta, S.K., K.K. Tanji, and M. Mehran, "Field Simulation of Water and Nitrogen Transport in Soil-Water-Plant Systems. Part I: Water Flow."

Mehran, M., K.K. Tanji, and S.K. Gupta, "Field Simulation of Water and Nitrogen Transport in Soil-Water-Plant Systems. Part II: Nitrogen Transport and Transformations."

Tanji, K.K., M. Mehran, and S.K. Gupta, "Water and Nitrogen Fluxes in the Root Zone of Irrigated Maize. Chapter 4.1: Description of Models," in: Simulation of Nitrogen Behavior in Soil Plant Systems. M.J. Frissel and J.A. Van Veen (ed.), Center for Agricultural Publishing and Documentation, Wageningen, The Netherlands, 1981.

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Noorishad, J., M. Mehran, and T.N. Narasimhan, "On the Formulation of Saturated-Unsaturated Fluid Flow in Deformable Porous Media," Advances in Water Resources, Vol. 5, 61-62, 1982.

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Mehran, M., J. Noorishad, and K.K. Tanji, "Numerical Simulation of the Effect of Soil Nitrogen Transport and Transformation on Ground Water Contamination, "Proceeding of the 16th Congress of The International Association of Hydrogeologists, Prague, Czechoslovakia, September 1982.

Selim, H.M., M. Mehran, K.K. Tanji, and I.K. Iskandar, "Mathematical Simulation of Nitrogen Interactions in Soils," Mathematics and Computers in Simulation, Vol. 25, No. 3, 241-248, 1983.

Mehran, M., M. J. Nimmons, and E.B. Sirota, "Delineation of Underground Hydrocarbon Leaks by Organic Carbon Detection," Proceedings of National Conference on Management of Uncontrolled Hazardous Waste Sites, Washington, D.C., 94-97, October 31, 1983.

Mehran, M., J. Noorishad, and K.K. Tanji, "A Numerical Technique for Simulating the Effects of Soil Nitrogen Transport and Transformations on Ground Water Contamination," Journal of Environmental Geology, Vol. 5, No. 4, 213-218, 1984.

Mehran, M., and R.L. Olsen, "Adsorption Characteristics of Trichloroethylene (TCE) in Soil-Water Systems," paper presented at the Spring Meeting of the American Geophysical Union, Cincinnati, Ohio, May 1984.

Mehran, M., and B.M. Rector, "Ground Water Treatment and Contaminant Migration Control," paper presented at a meeting of the Chemical Manufacturers Association, Atlanta, Georgia, September 1984.

Mehran, M., and R.L. Pellissier, "Geochemical Characteristics of Ethylene Dibromide," paper presented at the International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, December 1984.

Mehran, M., "University-Industry Round-Table: Research Needs in Hazardous Waste Management," presented before the faculties of Civil Engineering and Environmental Engineering, University of Southern California, October 9, 1985.

Mehran, M., "Modeling of Volatile Organic Compounds in Ground Water Systems," paper presented at the University of Southern California, November 8, 1985.

Parmele, C.S., R.D. Allen, and M. Mehran, "Steam-Regenerated Activated Carbon -- An Emission-Free Cost-Effective Ground Water Treatment Process," presented at American Institute of Chemical Engineers Annual Meeting, Chicago, Illinois, November 13, 1985.

Parmele, C.S., T.L. Schomer, and M. Mehran, "Industrial Prospective on In-Situ Methodology," paper presented at Southeastern Symposium on In-Situ Treatment and Immobilization of Hazardous and Radioactive Waste, Knoxville, Tennessee, June 8-10, 1986.

Mehran, M., R.L. Olsen, and B.M. Rector, "Distribution Coefficient of Trichloroethylene in Soil Water Systems," Ground Water, Volume 25, No. 3,275-282, 1987.

Mehran, M., "Ground Water/Contaminant Transport Models -- Uses and Misuse," presented to the California Environmental Health Association, October 28, 1987.

Mehran, M., "Statistical Techniques for Waste Environmental Sampling," presented at a meeting of the American Statistical Association, New Orleans, Louisiana, August 1988.

Mehran, M., "Role of Geochemistry of Chromium on Soil and Ground Water Remediation at Wood Preserving Facilities," presented at a meeting of the American Wood Preservers Association, Seattle, Washington, September 1988.

Azari, A., M.H. Alemi, and M. Mehran, "Estimating Mean of Groundwater Trace Constituents and Toxic Compounds for Censored Data," presented at a meeting of the American Society of Agronomy, Anaheim, California, November 27 to December 2, 1988.

Mehran, M., "Environmental Considerations Related to Siting and Operation of Wood Preserving Facilities," presented at a meeting of the American Wood Preservers Association, Richmond, Virginia, September 12, 1989.

Mehran, M., R.L. Olsen, and R.W. Chappell, "Adsorption and Desorption Characteristics of Chlorinated Volatile Organic Compounds," presented at the Ground Water Geochemistry Conference of National Water Well Association, Kansas City, Missouri, February 21, 1990.

Mehran, M., "Evaluation of Hexavalent Chromium Migration for Ground Water Remediation," presented at the 84th Annual Meeting & Exhibition of Air & Waste Management Association, Vancouver, British Columbia, June 16 - 21, 1991.

Mehran, M., "Fate and Transport of Ethylene Dibromide in Soil and Ground Water Systems," presented at the 85th Annual Meeting & Exhibition of Air & Waste Management Association, Kansas City, Missouri, June 21 - 26, 1992.

Mehran, M., "Design of Extraction/Injection Systems Using Analytic Models," presented at the 85th Annual Meeting & Exhibition of Air & Waste Management Association, Kansas City, Missouri, June 21 - 26, 1992.

Mehran, M., "Soil and Ground Water Remediation by Vapor Extraction and Air Sparging," American Water Resources Association, Chicago, Illinois, November 1994.

Mehran, M., "Combined Effects of Water Table Drawdown, Vapor Extraction, and Air Sparging on Soil and Ground Water Remediation," Emerging Technologies in Hazardous Waste Management VII, American Chemical Society, Atlanta, Georgia, September 1995.

Mehran, M., "Soil and Ground Water Remediation by Vapor Extraction and Air Sparging," International Chemical Congress, Honolulu, Hawaii, December 1995.

Mehran, M., "Impacts of Pollutants on Ground Water Resources: Trends and Research Needs," International Conference on Industrial Pollution and Control Technologies, November 17 - 19, 1997, Hyderabad, India.

Mehran, M., "Natural Attenuation of Methylene Chloride in Ground Water," The 5th International Symposium on In-Situ and On-Site Bioremediation, April 1999, San Diego, California.

Mohsen, M., D. C. Hogshead, and R. L. Herndon, 2007, "Modeling Contaminant Sources Prior to Site Selection of Ground Water Recharge Basins, " Paper published by Groundwater Resource association of California.

Mehran, M. , D.C. Hogshead, S. Afshari, S. Zachary, P. Sones, J. Scott, and N. Garson, 2008, "Application of Modeling for Design and Optimization of Hydraulic Containment and In-Situ Chemical Oxidation", Paper accepted for presentation and publication at Battelle, May 2008.

Mehran, M. D.C. Hogshead, Brad Rogers, 2008, "Prevention of Off-Site VOC Vapor Intrusion through On-Site Soil Vapor Extraction", Paper accepted for presentation and publication at Battelle, May 2008.

(Revised April 2008)

Peter Lee
Staff Engineer

FIELD OF EXPERTISE

Mr. Peter Lee has performed more than 200 Phase I Environmental Site Assessments in last 4 years in California. The properties he has assessed include primarily commercial and industrial facilities. He has performed these assessments in accordance with the current ASTM standards and practices. Mr. Lee has also conducted site characterization including soil and vapor sampling, well installation, ground water monitoring, and installation and operation/maintenance of the remediation systems.

EDUCATION

CALIFORNIA STATE UNIVERSITY AT POMONA
Bachelor of Science, Electrical Engineering, 2004

EMPLOYMENT HISTORY

Rubicon Engineering Corporation, Irvine, CA: 2008 to 2009
Staff Engineer

- Phase I Environmental Site Assessments
- EDR searches
- File reviews at the regulatory agencies
- Soil and ground water sampling
- Drilling and well installation
- Operation ad maintenance

Western Environmental Engineer's Co., Santa Ana, CA : 2005 – 2008
Project Engineer

PHASE I ENVIRONMENTAL SITE ASSESSMENTS

- Performed over 200 Phase I Environmental Site Assessments for numerous commercial and industrial properties, including assessments conducted in adherence to ASTM Standard Practice E1527-05 (AAI).
- Provided Assessments for financial institutions, real estate developers, property owners and managers located in western states.
- Assessments included on and off-site inspection, regulatory file review and report preparation with recommendations.

PHASE II ENVIRONMENTAL SITE ASSESSMENTS

- Involved in numerous intrusive subsurface impact assessments of various commercial and industrial facilities. Work included scheduling and organizing work activities, obtaining permits, and performing public relation duties.
- Experience with performing Phase II Environmental Site Assessments, supervising soil borings, installing groundwater monitoring wells, groundwater and soil sampling, soil profiling, and report writing.

PHASE III REMEDIATION / SOIL AND GROUNDWATER MONITORING

- Acquired an experience of maintaining and operating vapor-extraction system (**SVE & DPE**), which utilizes an Engine or thermal oxidizer to suck-out, and combust hydrocarbon vapors from underground soil.
- Performed quarterly groundwater monitoring and sampling including the following: water level monitoring, tide measurement, free product testing and removal, field measurements (pH, dissolved oxygen, turbidity, conductivity, etc.), PID measurement, air sampling, pilot testing, groundwater sample collection and laboratory analysis of samples.
- Additional work included scheduling and organizing remediation projects; and preparing reports.

AMIR MATIN, PG, CEG, CHG, MBA

Program Manager, Principal Hydrogeologist

FIELDS OF EXPERTISE

Mr. Matin has over 30 years of experience in the technical and managerial aspects of geotechnical and environmental engineering, hydrogeology, management of toxic chemicals, regulatory processes, environmental assessment, technology selection, remedial action, and site closure projects. He has well-developed skills in project and program management, scheduling and cost control, having had responsibility for leading multi-disciplinary teams of environmental professionals on demanding, complex, and fast-paced multi-million-dollar projects. These programs have honed his skills in planning, data analysis and interpretation, agency negotiations, and customer-focused sales and service delivery.

He has extensive experience in all aspects of the remediation process, including remedial investigation/feasibility studies (RI/FS), and the design, installation, and operation of soil and groundwater remediation systems. He is highly experienced in dealing with Federal and State of California environmental laws and regulations, and in interacting with Federal and California agencies. His broad expertise comes from over 30 years of personal experience ranging from task management to office management as well as leading multi-disciplinary technical groups of environmental, engineering, and construction professionals in the past 22 years. Mr. Matin's customers benefit from his ability to adapt to changing conditions using creative solutions that help achieve client goals cost-effectively and on-time.

EDUCATION

M.B.A., Global Management, 1999, University of Phoenix, Sacramento, California
M.S., Engineering Geology, 1982, California State University, Los Angeles, California
B.S., Geology, 1976, Central Michigan University, Mt. Pleasant, Michigan

REGISTRATIONS

Registered/Professional Geologist (PG), CA # 4190, 1986
Certified Engineering Geologist (CEG), CA #1396, 1988
Certified Hydrogeologist (CHg), CA #137, 1995

CERTIFICATIONS

Certified Engineering Geologist, California
Certified Hydrogeologist, California
General Engineering Contractor License, "A" Class, California
Hazardous Substances Removal and Remedial Action License, "Haz" Class, California

EMPLOYMENT HISTORY

Rubicon Engineering Corporation 20 Corporate Park, Suite 285 Irvine, California Vice President/Program Manager Principal Hydrogeologist	April 2008 to Present
Cape, Inc. Irvine and Sacramento, CA Regional Manager Senior Program Manager	2005 to 2008
URS, Inc. Sacramento, CA Department Manager Senior Program Manager Marketing Manager	2002 to 2005
Jacobs Engineering Group Inc. Pasadena and Sacramento, CA Department Manager/Deputy Office Manager Program Manager/Manager of Projects Office Manager/Technical Resources Manager	1991 to 2002
CET Environmental Services/TG Environmental, Inc. Tustin, Anaheim and Long Beach, CA Senior Vice President/Program Manager Vice President/General Manager Principal Hydrogeologist	1988 - 1991
J.H. Kleinfelder and Associates Compton and Artesia, CA Engineering Manager/Operations Manager Senior Project Manager Senior Hydrogeologist/ Engineering geologist	1986 - 1988
Leroy Crandall and Associates/Law Environmental Los Angeles and Burbank, CA Hydrogeologist Engineering geologist Project Manager	1979 - 1986
AMCS (Family Business) Monterey Park, CA Hydrogeologist	1977 - 1979

CAREER DETAILS

Since April 2008, Mr. Matin has been the director of Federal Programs for Rubicon Engineering Corporation in charge of development and execution of all federal projects. His focus is to grow and continually improve the services to the all important Federal customers. He advocates growing business by understanding and responding to customer needs. His main responsibilities are: 1) Business Development, 2) Proposal Management and 3) Program Management. As the program manager for the Navy, Air Force and Army Corps of Engineers, he serves as the single point of contact for coordination with the clients. He is responsible for overall management of the contracts including cost, schedule and technical quality.

At CAPE Corporation from 2006 to 2008, Mr. Matin responsibilities included:

- Mr. Matin was the Regional Manager for CAPE Corporation's Western Region overseeing the day to day operations activities of two offices – Irvine and Sacramento, California. He was responsible for the growth of the western region for CAPE and oversees several large Department of Defense projects, including Vandenberg Air Force Base (AFB), March Air Reserve Base and Tustin Naval Air Station (NAS) and Ventura County NAS, Point Mugu in southern California as well as Camp Parks and Fort Mason bases in northern California for the Army Corps of Engineers, Sacramento District. He also oversaw the development and implementation of quality programs in the western region.

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At URS Corporation from 2002 to 2006, Mr. Matin responsibilities included:

- From 2004 to 2006, Mr. Matin was the lead Senior Program/Marketing Manager for URS Corporation's Air Force Market Sector, the company's most important Federal customers. To improve his sales and customer management skills, Mr. Matin took several sales and marketing training opportunities (e.g., Proposing to Win, Strategic Selling, Presentation Skills). Subsequently, he incorporated key concepts into Best Practices for the company's large programs (e.g., establishment of a formal process to gather and act on customer feedback, Client Expectation and Client Feedback Surveys System). Mr. Matin continued to lead, as the program manager, all of URS' projects efforts at Travis Air Force Base (AFB), and as the quality manager he oversees the quality assurance program at McClellan AFB as well as managing several projects for Cal EPA's DTSC. He also provides strategic planning and analysis, technical review and support to other Air Force, Army, state, and private sector programs throughout the western US.

- From 2002 to 2004, Mr. Matin was the Remedial System Services Department Manager for URS, Inc. His department consisted of three groups: Monitoring and Reporting; Operation and Maintenance; and Data Management and Computer Modeling. Mr. Matin's responsibilities included managing day to day operation of these groups, which consist of approximately 40 environmental scientists, chemists, engineers, geologists, hydrogeologist, geophysicists, and data manager professionals working mainly on large, complex projects at the U. S. Army Corps of Engineers and Air Force bases in California. His other responsibilities included leading URS' Sacramento Office Air Force marketing efforts as well as program and quality management at the following facilities:

- **Travis AFB, Fairfield, CA.** Mr. Matin was the Program Manager for a complex environmental remediation program, including operations and maintenance (O&M) of three groundwater and three SVE treatment systems. The program includes basewide groundwater sampling and analysis of over 500 monitoring wells and semi-annual evaluation of system performance and optimization. The program also included community relation support, Remedial Design/Remedial Action, and risk assessment, including indoor air and ecological.
- **Army Corps of Engineers' HTRW Contract, CA**. Mr. Matin was the Program Manager for the implementation of all of the URS projects under this contract from 2002 to 2005. This was a multi-year and multi-million dollar program and included the following projects: Fort Irwin, Tooele Army Depot, Sacramento Army Depot, TEAD groundwater Alternative Measures Study and Hawthorne Army Depot.
- **McClellan AFB, Sacramento, CA**. Mr. Matin was the Quality Manger of all URS' assessment and remediation programs as well as the manager who oversees a large and complex O&M and LTM activities at the base, which ranked as the number one Superfund facility in the U.S. Air Force. He was the project manager for the implementation of a comprehensive PA/SI and was also the main author for a comprehensive Flow and Fate and Transport computer model, which was used for the development of the much contested Record of Decision (ROD) and groundwater system optimization.
- **Wake Island Airfield, Wake Atoll**. Mr. Matin was the technical program Manager for the implementation of this large assessment and cleanup program of the Wake Island. The work also included Removal Actions and Mr. Matin oversaw the implementation numerous Engineering Evaluations/Cost Analyses (EE/CA).

At *Jacobs Engineering Group Inc.*, Mr. Matin's accomplishments include the following:

- From December 2001 to October 2002, Mr. Matin was the office manager of the Jacobs' Sacramento Office; where he managed the daily operations of about 40 employees. He was also the Program Manager of several complex multi-disciplinary remediation projects at various Department of Energy and Department of Defense sites. These sites included Lawrence Livermore National Laboratory (LLNL), Vandenberg and McClellan Air Force Bases and at Vernal, Utah – United States Army Corps of Engineers' site. He was an integral part of the proposal development and review team for DOD nationwide contracts (e.g., AFCEE 3P-AE, 4P and ENRAC as well as Navy Southwest Div).

- From January 1998 to February 2002, Mr. Matin was the Deputy Office Manager and the program manager for all of the Jacobs' projects at Castle Air Force Base under the IRP and $ 150 million full-service Remedial Action Contract (RAC) with the Air Force Center for Environmental Excellence (AFCEE). As the program manager, Mr. Matin was responsible for planning, proposals, budgets, staffing, cost and schedule performance, technical and contractual performance and compliance, and management coordination, including implementation of the Jacobs Quality

Advancement Process. The implementation of project tasks requires the coordination of Jacobs's personnel as well as subcontracted resources such as for construction, remediation and disposal services, analytical services, drilling and other field support services, as well as supplies and equipment in accordance with federal contract requirements. As the result of his outstanding performance, Jacobs has received 99.3, 100, 100 and 100 percents award fees from AFCEE for the last four years and Mr. Matin has received commendation letters from AFCEE and BRAC Environmental Coordinator at Castle AFB (e.g., one entitled A Delightful Experience).

- From February 1994 to January1998, Mr. Matin was the lead Project Manager, and then Program Manager, for all projects at McClellan AFB under the Air Force IRP, McClellan ID/IQ, and AFCEE RI/FS contracts, totaling $75 million. His responsibilities included managing large (178 sites) RI/FS and removal action projects at the site ranked as the number one Superfund facility in the U.S. Air Force. These projects use unique approaches to site characterization and remediation (e.g., utilization of mobile laboratory and borehole conversion criteria for real-time decisions on further characterization or installation of remedial action equipment) because of significant environmental problems at the base, including degraded groundwater that has migrated off base. He was responsible for the technical direction and quality of documents including sampling and analysis plans, quality assurance plans, RI/FS and engineering evaluation/cost analyses. He was also responsible for implementing field programs and for developing strategies for site prioritization and accelerated remediation. He also has provided technical input to several remedial action projects at other Air Force Bases in soil vapor extraction, bioventing, and air stripper/vapor phase carbon pump and treat systems. Mr. Matin has received numerous commendations from the Air Force for conducting excellent field programs and preparing innovative reports that received very few comments from the agencies. He also provided technical input to several remedial action projects at other CERCLA sites in SVE, bioventing, air/liquid strippers and carbon/oxidation treatment systems.

- During 1992 and 1993, he was the lead project manager for implementation of a major ($25 million) RI/FS and removal action programs at Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms. He successfully managed the first implementation of an innovative, proactive, fast-track program called PEECP (Pilot Expedited Environmental Cleanup Program), which was established by Congress in 1992 to streamline the cleanup of contaminants on military installations using innovative, cost-effective methods. Mr. Matin reduced the estimated project completion time several years by overlapping investigative steps and incorporating a real-time decision-making process in the field to evaluate cleanup options, select appropriate remedies, and implement the latest cleanup technologies. On many sites, monitoring and remediation equipment was installed during the site investigation, which resulted in $9 million in cost savings. Through ongoing communication with the regulatory agencies, Mr. Matin was instrumental in implementing a flexible work plan that complied with all environmental regulations. The program included extensive public participation. As a result of Mr. Matin's efforts, Jacobs was commended for the outstanding accomplishments achieved during the MCAGCC cleanup project, with the highest award fee rating (100%) secured since the inception of the Navy CLEAN Program. MCAGCC, in turn, received the prestigious Environmental Restoration Award from the Secretary of

Defense as well as the Environmental Cleanup Award from the Secretary of the Navy. Mr. Matin also received a Letter of Appreciation from General Sutton, U. S. Marine Corps Commanding General.

- During 1991 and 1992, he managed the RI/FS Department of the Pasadena Environmental Programs. His department consisted of seven groups: Geology, Geotechnical and Engineering Geology, Civil and Environmental Engineering, Chemistry, Air Quality and Risk Assessment, Planning and Regulatory Compliance and Field Services. These groups' tasks included site assessment, RI/FS studies, underground storage tank management and compliance activities, air toxics, community relations, RCRA permitting and compliance, and remediation. Mr. Matin's responsibilities included managing a diverse group of approximately 80 environmental scientists, chemists, engineers, geologists, hydrogeologists, geophysicists, and risk assessment professionals working mainly on large, complex projects at Navy and Air Force bases in California. He was one of the few lead technical reviewers on the Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, as well as on the Vandenberg, McClellan, and Edwards Air Force base projects. He also provided technical input to other major CLEAN projects such as NAS El Centro, MCLB Barstow, MCAS El Toro, NAS North Island (San Diego), MCAS Yuma, and MCAS Tustin.

At *CET Environmental Services* (formerly TG Environmental), Mr. Matin was Senior Vice President in charge of the Engineering and Remediation Services. In this capacity, he was responsible for the management and supervision of three area offices encompassing a staff of 75 environmental professionals conducting major soil and groundwater assessment and remediation programs. His accomplishments included:

- Stimulated growth by identifying the strengths and weaknesses of various departments and effectively reorganized administrative procedures to yield higher efficiency in the flow of information and reduce overhead costs
- Decreased bad debts by installing an effective collection system
- Actively pursued the attainment of new target markets in the remediation business
- Conducted senior review on all major projects and performed as specialized EPA ERCS Response Manager
- Increased technical quality, management care, technical efficiency, and computer applications
- Established strong controls in order to promote loss prevention and to effectively maintain maximum billability
- Ensured the development of technically sound, clearly written, and accurately calculated cost proposals
- Conducted quality control audits and contract approvals on all large projects
- Ensured the application of appropriate remedial action technologies across regional offices

As Vice President, *Med-Tox Associates* (a TG Environmental company), Mr. Matin successfully established a new division called GEO-TOX, performing environmental assessment and remediation programs. Mr. Matin:

- Developed a reputable company image through public relations and high-quality product and superior performance of projects
- Effectively executed administrative policies, which ensured loss prevention and higher profitability. The newly established division by Mr. Matin reached the highest level of profit margins within the company in less than one year
- Provided hands-on technical training to personnel in the field and office. The goal was to continually adhere to quality from proposal to project completion, which resulted in repeat business from existing clients and new businesses from outreach endeavors
- Reduced costs and improved efficiency by expanding computer applications in the field and office
- Decreased bad debts by installing a timely and effective collection system, providing strong contract administration and proposal development, and maintaining stringent quality assurance and control standards throughout project development
- As project director, effectively managed large and complex projects and gave technical input to all other projects
- Initiated innovative marketing approaches in an effort to be at the forefront of the industry with a name that was easily recognized and trusted. Marketing efforts included development of a sophisticated database with over 12,000 potential clients complete with detailed information, such as type of services they require

At *J.H. Kleinfelder and Associates*, Mr. Matin held two positions: As Engineering Manager/Operations Manager of the Southern California office, he effectively managed a staff of 26 environmental professionals conducting major soil and groundwater assessment and remediation programs. He also:

- Devised new systems to execute company goals such as reducing turnaround times and increasing collections
- Increased sales by systematically upgrading the production of the office through recognizing and eliminating problem areas and emphasizing quality performance
- Scheduled daily operations and monitored the staff's performance
- Purchased, inventoried, and controlled project equipment
- Devised and implemented time-saving procedures including staff scheduling and office capacity evaluation which resulted in identifying problem areas in projects and personnel
- Reduced cost through computerizing the office and increasing computer applications

As Senior Hydrogeologist/Project Manager, Mr. Matin was responsible for managing, planning, coordinating, and directing large projects as well as reviewing environmental and hydrogeologic studies for all projects, including underground storage tank investigations, environmental audits and assessments, landfill investigations, aquifer testing and groundwater contaminant modeling, and soil and groundwater remediation

programs. He also established a technical library and a mobile laboratory for the office, wrote effective proposals, and participated in marketing presentations. Mr. Matin was appointed to the company's Technical Advisory Committee, which was responsible for quality improvements across all offices.

At *Leroy Crandall and Associates/Law Environmental,* as a hydrogeologist/project manager, Mr. Matin supervised and conducted many diverse environmental assessment, remediation, and geotechnical projects involving landfills, high-rise structures, surface impoundments, large retail shopping centers, hospitals, chemical and industrial manufacturing companies, transportation companies, utilities, and government agencies. Mr. Matin conducted the following projects/tasks at Leroy Crandall and Associates:

- Long-term groundwater monitoring and sampling as well as operation and maintenance of pump-and-treat systems at several major aquifer restorations programs in California and Nevada for over six years continuously, including one of the very first Superfund sites. Duties also included design and installation of dewatering wells, water resource evaluation and development (basin, safe yield, and well field and productivity studies), field permeability, and water quality investigations.
- Field mapping, slope stability studies, geologic and seismic site investigations, landslide and fault investigations, soil boring and groundwater monitoring well installation and sampling, aquifer testing and analysis, groundwater flow and contaminant transport modeling, and soil and groundwater remediation
- Supervising subsurface geophysical studies using seismic refraction and reflection methods in hazardous waste landfills, power plants, and surface impoundment sites and testing the effectiveness of subsurface barriers in restraining migration of hazardous liquid

At AMCS, as a hydrogeologist, Amir worked on a project to determine the effects of water quality and soil properties on crop yield. One of the objective of the project was to ascertain the crop yield reduction as a function of water quality (i.e., increase in total dissolve solids). Amir also worked on basin study and well field projects with the objective of assessing and increasing ground water yield from wells and ganats.

Appendix I

Biology Review

September 3, 2009

BRETT PAULSON
CORPORATE REAL ESTATE DEPARTMENT

SUBJECT: Biology Study for Phase I Environmental Site Assessment
Alberhill 500 kV Substation at the N/E corner of Temescal Canyon Road and Concordia Ranch Road in Lake Elsinore, California

A biological resources assessment for the proposed Alberhill Substation parcels (parcels) was conducted based on a literature review, search of the California Department of Fish and Game Natural Diversity Database (CNDDB), USGS Alberhill 7.5 Minute Quadrangle Map, an analysis of recent aerial photos, and a site visit conducted on November 17-19, 2008 by Earth Tech/AECOM Biologist Matthew Mallé and Environmental Scientist Carl Rykaczewski. The purpose of the evaluation was to determine the potential for sensitive plant and wildlife species to exist on-site.

The southern portion of the parcels surveyed for this study is currently developed and being used as a horse ranch. This area contains corrals, stables, and residential dwellings. The northern portion of the survey area contains steep vegetated hills and is undeveloped. Vegetation communities present on-site include developed, non-native annual grassland, Riversidean coastal sage scrub, and mule fat scrub. Riversidean coastal sage scrub and mule fat scrub are native vegetation communities that could support special status plant or wildlife species.

The existing on-site habitat conditions when compared with the habitat requirements and historic occurrences for each of the species listed in the attached Table, leads to a determination that there is at least a moderate potential for 33 sensitive species to exist on-site including Quino checkerspot butterfly, Riverside fairy shrimp, orange-throated whiptail, northern red-diamond rattlesnake, coast horned lizard, coast patched-nosed snake, Cooper's hawk, coastal California gnatcatcher, tri-colored blackbird, long-eared owl, coastal cactus wren, northern harrier, yellow breasted chat, least Bell's vireo, burrowing owl, northwestern San Diego pocket mouse, Stephen's kangaroo rat, western mastiff bat, San Diego black-tailed jackrabbit, San Diego wood rat, and rare plants.

San Diego desert wood rat, Cooper's hawk, and northern harrier were observed onsite during the habitat assessment. Additional focused surveys and detailed habitat assessments for Riverside fairy shrimp, burrow owl, coastal California gnatcatcher, least Bell's vireo, Stephen's kangaroo rat, Quino checkerspot butterfly, and rare plants were conducted during the 2009 survey season. During surveys, two migrant coastal California gnatcatchers were observed onsite and Stephen's kangaroo rat is likely present in the southeastern corner of the site (trapping will be required to confirm Stephen's kangaroo rat). In addition, two sensitive plant species were also observed: paniculate tarweed and long-spined spine flower. Riverside fairy shrimp is absent. Suitable habitat for burrowing owl and Quino checkerspot butterfly are present including squirrel burrows for borrowing owl and larval host plant for Quino checkerspot butterfly but these species were not observed during surveys.

The existing buildings, trees, and shrubs within the parcel have the potential to provide nesting habitat for migratory birds during the nesting season (February – August). Migratory birds are protected by the Federal Migratory Bird Treaty Act (MBTA) and any activities that impact their successful nesting would result in a violation of the MBTA. Any activities that the lessee conducts that could impact the successful nesting of migratory birds between February-August should be avoided or conducted after a pre-construction nesting bird survey determines their absence from the parcel.

Ground disturbing activities including digging, vegetation removal, and site access within potential or likely Stephen's kangaroo rat habitat is prohibited unless trapping surveys confirm the absence of Stephen's kangaroo rat.

Ground disturbing activities including digging, vegetation removal, and site access should avoid known paniculate tarweed and long-spined spine flower populations.

Quino checkerspot butterfly was not observed during the 2009 flight season. Additional surveys are recommended during the 2010 flight season (approximately late February though mid-May).

Several upland drainage features and an isolated riparian area in the center of the horse track were observed onsite. These areas are potentially jurisdictional under Sections 401 and 404 of the Clean Water Act, Sections 1600-1616 of the California Fish and Game Code, and the Porter-Cologne Act. No ground disturbing activities or vegetation removal should occur in these areas prior to conducting a wetland delineation, determining the presence/absence of agency jurisdiction, and obtaining appropriate regulatory permits, if necessary.

This biological review confirmed the presence and/or moderate potential for the occurrence of sensitive biological resources, including state and federally listed species on-site at this time. The future activities on the property must be conducted in compliance with the MBTA, Western Riverside County MSHCP, and other applicable state and federal environmental regulations.

In summary, no biological surveys are required prior to initiation of Phase I or Phase II hazardous materials surveys. The Phase I survey consists of a pedestrian survey, which would not result in ground disturbance or vegetation removal. The Phase II survey may require bore samples at the well and septic systems located within developed portions of the proposed substation parcels. These disturbed locations are generally not considered sensitive for biological resources. In addition, the bore samples will be taken with hand-held equipment which will have minimal impacts to the soil and vegetation. Therefore, Phase II activities are not expected to adversely affect sensitive biological resources.

If mechanical ground disturbing or vegetation removal (i.e., by a tractor or bobcat) is expected, a biologist can determine if the impacts are adverse and/or would require permitting. However, this determination would require a more detailed project description and the location and extent of disturbance. In addition, a biological monitor may be required during these activities. Grading of sensitive resources such as occupied SKR habitat, suitable habitat for QCB, drainage features, rare plants, etc. is not permitted at this time. As shown in the attached figure, these resources should be avoided until take authorization from the resource agencies is granted.

Should you have any questions regarding this biology study, please feel free to contact me at 949-400-2942/949-333-6600.

Sincerely,

Amanda Duchardt
Contract Biologist (ICF Jones & Stokes)
Corporate Environment Health and Safety

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
chaparral sand-verbena *Abronia villosa* var. *aurita*	-/-/CNPS: 1B.1	Sandy areas within chaparral and coastal sage scrub habitat.	Jan.-Sep.	**Moderate.** Project Area contains coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.
Munz's onion *Allium munzii*	E/T/CNPS: 1B; WRC Narrow Endemic Plant Species	Occurs in clay soils (Within Western Riverside County unit Bosanko clay soils and Las Posas gravelly loam) within grasslands and openings within scrublands or woodlands.	March-May	**Moderate.** Project Area within vicinity of critical habitat units for this species.	Conduct a rare plant survey during blooming period if the proposed project will impact grassland and coastal sage scrub habitat.
San Diego ambrosia *Ambrosia pumila*	E/-/CNPS:1B.1; WRC Narrow Endemic Plant Species	Occurs in upland areas on clay slopes or dry margins of vernal pools. Often associated with open, gently-sloped grasslands, and generally found in alkaline soils.	April-Oct.	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
San Jacinto Valley crownscale *Atriplex coronata notatior*	E/-/CNPS:1B.1	Occurs primarily in floodplains dominated by alkali scrub, alkali playas, vernal pools, and to a lesser extent alkali grasslands. Restricted to highly alkaline, silty-clay soils in association with Travers-Domino-Willows soil association.	April-August	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.
Parish's brittlescale *Atriplex parishii*	-/-/CNPS:1B.1; WRC Criteria Area Species	Occurs in alkaline habitats in association with alkali vernal pools, alkali annual grasslands, alkali playas, and alkali scrub components of alkali vernal plains.	June-Oct.	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
Davidson's saltscale *Atriplex serenana davidsonii*	-/-/CNPS:1B.2; WRC Criteria Area Species	Occurs in the Domino-Willows-Travers soil series in association with alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub.	April-Oct.	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.
three-leaved brodiaea *Brodiaea filifolia*	T/E/CNPS:1B.1; WRC Criteria Area Species	Occurs in gentle hillsides, valleys, and floodplains in semi alkaline mudflats, vernal pools, mesic southern needlegrass grassland, mixed native/non-native grassland and alkaline grassland plant communities in association with clay, loamy sand, or alkaline silty-clay soils.	March-June	**Moderate.** Project Area contains sloped grasslands.	Conduct a rare plant survey during blooming period if the proposed project will impact grassland habitat.
round-leaved filaree *California macrophyllum*	-/-/CNPS:1B.1; WRC Criteria Area Species	Occurs in grasslands with relatively low cover of annual grasses on friable soils	March-May	**Moderate.** Project Area contains grassland habitat.	Conduct a rare plant survey during blooming period if the proposed project will impact grassland habitat.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
Payson's jewel flower *Caulanthus simulans*	-/-/CNPS:4.2	Occurs in frequently burned areas or in other disturbed sites such as streambeds within chaparral and coastal scrub habitats.	Feb.-June	**Moderate.** Project Area contains coastal sage scrub with drainage beds.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.
smooth tarplant *Centromadia pungens* ssp. *laevis*	-/-/CNPS: 1B.1; WRC Criteria Area Species	Occurs in alkali meadow or alkali scrub within valley and foothill grasslands, meadows, playas or riparian woodland.	April-Sept.	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.
Parry's spineflower *Chorizanthe parryi var. parryi*	-/-/CNPS: 3.2	Occurs in coastal sage scrub and chaparral. Found on dry slopes and flats within dry sandy soils.	April-June	**Moderate.** Project Area contains coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
long-spined spineflower *Chorizanthe polygonoides* var. *longspina*	-/-/CNPS:1B.2	Occurs in Gabbroic clay soils within chaparral, coastal scrub, meadows, and valley and foothill grasslands.	April-July	**Moderate.** Project Area contains coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.
slender-horned spineflower *Dodecahema leptoceras*	E/E/CNPS:1B.1; WRC Narrow Endemic Plant Species	Chaparral, coastal scrub. Flood deposited terraces and washes. Associations include *Encelia, Dalea, Lepidospartum*, etc.	April-June	**Moderate.** Project Area contains coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.
many-stemmed dudleya *Dudleya multicaulis*	-/-/CNPS:1B.2; WRC Narrow Endemic Plant Species	Occurs in heavy often clayey soils or grassy slopes in chaparral, coastal sage scrub, and valley and foothill grasslands.	April-July	**Moderate.** Project Area contains coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.
Palmer's grapplinghook *Harpagonella palmeri*	-/-/CNPS:4.2	Occurs within chaparral, coastal scrub, valley and foothill grassland. Prefers clay soils; open grassy areas within shrubland.	March-May	**Moderate.** Project Area contains coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
mesa horkelia *Horkelia cuneata* ssp. *puberula*	-/-/CNPS: 1B.1	Occurs in chaparral, cismontane woodland, and coastal scrub. Requires sandy or gravelly sites.	Feb.-Sept.	**Moderate.** Project Area contains coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact coastal sage scrub habitat.
Coulter's goldfields *Lasthenia glabrata coulteri*	-/-/CNPS:1B.1; WRC Criteria Area Species	Occurs primarily in highly alkaline, silty-clay soils. Travers-Domino-Willows soil association within alkali vernal plains community.	Feb.-June	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.
heart-leaved pitcher sage *Lepechinia cardiophylla*	-/-/CNPS:1B.2	Occurs in closed-cone coniferous forest, chaparral, and cismontane woodland	April-July	**No Potential.** The Project Area does not contain suitable habitat for this species.	No further surveys recommended.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
felt-leaved monardella *Monardella hypoleuca* ssp. *lanata*	-/-/CNPS:1B.2	Occurs within chaparral and cismontane woodland. Occurs in understory in mixed chaparral, chamise chaparral, and southern oak woodland. Also prefers sandy soils.	June-August	**No Potential.** The Project Area does not contain suitable habitat for this species.	No further surveys recommended.
Hall's monardella *Monardella macrantha* ssp. *Hallii*	-/-/CNPS:1B.3	Occurs within broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, and valley and foothill grassland habitats. Often associated with dry slopes and ridges in openings within the above communities.	June-August	**No Potential.** The Project Area does not contain suitable habitat for this species.	No further surveys recommended.
little mousetail *Myosurus minimus* ssp. *Apus*	-/-/CNPS:3.1; WRC Criteria Area Species	Occurs in alkaline soils/vernal pools.	March-June	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
spreading navarretia *Navarretia fossalis*	T/-/CNPS:1B.1; WRC Narrow Endemic Plant Species	Primarily associated with vernal pools, depressions, and ditches in areas that once supported vernal pools. Often associated with a larger vernal floodplain(s) dominated by annual alkali grasslands and alkali playa.	April-June	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended.
California orcutt-grass *Orcuttia californica*	E/E/CNPS:1B.1; WRC Narrow Endemic Plant Species	All known localities are associated with vernal pools. Specifically, southern basaltic clay pan and alkaline vernal pools.	Apr.-Aug.	**No Potential.** The Project Area does not contain suitable habitat for this species.	No further surveys recommended.
San Miguel Savory *Satureja chandleri*	-/-/CNPS: 1B.2; WRC Narrow Endemic Plant Species	Occurs in chaparral, cismontane woodland, coastal scrub, rip woodland, valley and foothill grasslands. Requires rocky, gabbroic or metavolcanic substrate.	March-July	**No Potential.** The Project Area does not contain suitable habitat for this species.	No further surveys recommended.

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations
Hammit's clay-cress *Sibaropsis hamittii*	-/-/CNPS:1B.2; WRC Narrow Endemic Plant Species	Chaparral and valley and foothill grassland	March-Apr.	**Moderate.** Project Area contains foothill grassland habitat within coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact foothill grassland habitat within coastal sage scrub.
San Bernardino aster *Symphyotrichum defoliatum*	-/-/CNPS:1B.2	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland habitat. Found in vernally mesic grasslands or near ditches, streams, springs, and disturbed areas .	July-Nov.	**Moderate.** Project Area contains grassland and coastal sage scrub.	Conduct a rare plant survey during blooming period if the proposed project will impact grassland and coastal sage scrub habitat.
Wright's trichocoronis *Trichocoronis wrightii wrightii*	-/-/CNPS:2.1; WRC Narrow Endemic Plant Species	Occupies more mesic portions of alkaline vernal plains and associated alkali playa, annual grassland and vernal pool habitats.	May-Sept.	**Unlikely.** Areas with potential to flood occur; however, soils within potential area are Honcut loam, which are slightly acidic and well drained.	No further surveys recommended

Special Status Plant Species with the Potential to Occur within the Project Area

Common/Scientific Name	Status Federal/State/ Other	Preferred Habitat	Bloom Period	Potential for Occurrence	Recommendations

Note: Potential for Special Status Species Plant Species to Occur in the Project Area. List compiled from the California Department of Fish and Game Natural Diversity Database (2008) for the Alberhill, Steel Peak, Lake Elsinore, and Lake Mathews USGS 7.5' quadrangles and a review various documents associated with Western Riverside County Multiple Species Habitat Conservation Plan..

T = Threatened, E = Endangered, SC = Species of Concern

CNPS Codes:

1A. Presumed extinct in California
1B. Rare or Endangered in California and elsewhere
2. Rare or Endangered in California, more common elsewhere
3. Plants for which we need more information - Review list
4. Plants of limited distribution - Watch list

.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Potential for Special Status Species Wildlife Species to Occur in the Project Area

Species	Federal/State/ Other Status	Preferred Habitat	Potential for Occurrence	Recommendations
Invertebrates				
Quino checkerspot butterfly *Euphydryas editha quino*	E/-/-	Associated with chaparral and coastal sage scrublands. Requires high density of food plants *Plantago erecta*, *Plantago insularis*, and *Orthocarpus purpurescens*	**Moderate.** The Project area occurs south of federally designated critical habitat and the coastal sage scrub habitat present within the Project Area could provide host plant or nectar sources.	Conduct protocol level surveys at the beginning of adult flight season.
Riverside fairy shrimp *Streptocephalus woottoni*	E/-/-	Endemic to Western Riverside, Orange, and San Diego Counties in areas of tectonic swales/earth sump basins in grassland and coastal sage scrub. Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in season.	**Moderate**. The grassland in the southeast corner of the Project Area may contain habitat constituents suitable for this species.	Determine whether suspected area contains necessary habitat requirements for the fairy shrimp after a significant precipitation event. If constituents are present, then proceed with wet-season protocol level surveys.
Reptiles				
orange-throated whiptail *Aspidoscelis hyperythra*	-/SC/-	Associated with coarse soils in open coastal sage scrub and chaparral vegetation. Often found in areas with 50 percent vegetation cover to 50 percent barren soil.	**Moderate.** Coastal sage scrub habitat may provide suitable habitat for this species including cover sites and foraging habitat.	Pre-construction survey, on-site monitoring during ground disturbing activities, and relocation

Potential for Special Status Species Wildlife Species to Occur in the Project Area

Species	Federal/State/ Other Status	Preferred Habitat	Potential for Occurrence	Recommendations
northern red-diamond rattlesnake *Crotalus ruber ruber*	-/SC/-	Occurs in rocky areas or dense vegetation within chaparral, woodland, and grassland habitat. Requires rodent burrows, cracks in rocks or surface cover objects.	**Moderate.** Coastal sage scrub habitat may provide suitable habitat for this species including cover sites and foraging habitat.	Pre-construction survey, on-site monitoring during ground disturbing activities, and relocation
coast (San Diego) horned lizard *Phrynosoma coronatum*	-/SC/-	Associated in areas with abundant, open vegetation, such as chaparral or coastal sage scrub. Prefers friable, rocky or shallow sandy soils	**Moderate.** Coastal sage scrub habitat may provide suitable habitat for this species including cover sites and foraging habitat.	Pre-construction survey, on-site monitoring during ground disturbing activities, and relocation
coast patch-nosed snake *Salvadora hexalepis virgultea*	-/SC/-	Brushy or shrubby vegetation in coastal southern California; requires small mammal burrows for refuge and over wintering sites.	**Moderate.** Coastal sage scrub habitat may provide suitable habitat for this species including cover sites and foraging habitat.	Pre-construction survey, on-site monitoring during ground disturbing activities, and relocation
Birds				
Cooper's hawk *Accipiter cooperii*	-/SC/-	Nests within open interrupted or marginal woodlands. Often associated with riparian growths of deciduous trees.	**Present.** This species was observed foraging within the Project Area during surveys.	Remove vegetation outside of breeding season and conduct pre-construction surveys.

Potential for Special Status Species Wildlife Species to Occur in the Project Area

Species	Federal/State/ Other Status	Preferred Habitat	Potential for Occurrence	Recommendations
tri-colored blackbird *Agelaius tricolor*	-/SC/-	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate and foraging area with insect prey within a few kilometers of the colony.	**Moderate.** Potential nesting habitat for this species occurs within the dry pond area inside the equestrian track.	Remove vegetation outside of breeding season and conduct pre-construction surveys.
long-eared owl *Asio otus*	-/SC/-	Occurs in riparian bottomlands within grown to tall willows and cottonwoods with presence of old crow or hawk nests. Requires adjacent open land productive of mice and other small mammals.	**Moderate.** Riparian habitat associated with Temescal Wash and adjacent to the southwest corner and southern boundary of the Project Area could provide nesting habitat for this species.	If construction is scheduled during breeding season for this species within 250 feet Temescal Wash, then pre-construction surveys should be conducted to determine presence.
burrowing owl *Athene cunicularia hypugaea*	-/SC/-	Occurs in open, dry, low growing annual or perennial grasslands. Dependent upon fossorial animals, most notably, the California ground squirrel.	**Moderate.** The low growing coastal sage scrub, grassland habitat and some portions of developed property may provide suitable habitat for this species.	Conduct protocol-level breeding season surveys to determine presence.
coastal cactus wren *Campylorhynchus brunneicapillus sandiegensis*	-/SC/-	Occurs within southern California coastal sage scrub habitat. The bird requires tall *Opuntia* cactus for nesting and roosting.	**Moderate.** Potential foraging or nesting habitat, for this species could be found in coastal sage scrub habitat within and adjacent to Project Area	Remove vegetation outside of breeding season and conduct pre-construction surveys.

Potential for Special Status Species Wildlife Species to Occur in the Project Area

Species	Federal/State/ Other Status	Preferred Habitat	Potential for Occurrence	Recommendations
northern harrier *Circus cyaneus*	-/SC/-	Occurs in marsh areas. Nests and forages in grasslands. Species usually builds a large nest of mounded sticks near wet areas.	**Present.** This species was observed foraging within the Project Area during surveys.	Remove vegetation outside of breeding season and conduct pre-construction surveys.
yellow-breasted chat *Icteria virens*	-/SC/-	Summer resident, inhabits riparian thickets of willow and other brushy tangles near water courses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape. Forages and nests within 10ft off ground.	**Moderate.** Riparian habitat associated with Temescal Wash and adjacent to the southwest corner and southern boundary of the Project Area could provide suitable habitat for this species.	If construction is scheduled during breeding season for this species within 250 feet Temescal Wash, then pre-construction surveys should be conducted to determine presence.
coastal California gnatcatcher *Polioptila californica californica*	T/SC/-	Associated with low coastal sage scrub in arid washes, on mesas, and slopes. Habitat is dominated or co-dominated by California sagebrush.	**Moderate.** The coastal sage scrub, grassland habitat within the Project Area may provide suitable habitat for this species.	Conduct protocol-level breeding season surveys to determine presence.

Potential for Special Status Species Wildlife Species to Occur in the Project Area

Species	Federal/State/ Other Status	Preferred Habitat	Potential for Occurrence	Recommendations
least Bell's vireo *Vireo bellii pusillus*	E/E/-	Summer resident of southern California in low early to mid-successional riparian habitat in vicinity of water or in dry river bottoms. Nests placed along margins of bushes or on twigs projecting into pathways, usually *Baccharis* or willow.	**Moderate.** Riparian habitat associated with Temescal Wash and adjacent to the southwest corner and southern boundary of the Project Area could provide nesting habitat for this species.	If construction is scheduled during breeding season for this species within 250 feet Temescal Wash, then protocol-level breeding season surveys to determine presence should be conducted
Mammals				
northwestern San Diego pocket mouse *Chaetodipus fallux fallux*	-/SC/-	Occurs in sandy, herbaceous areas, usually in association with rocks or coarse gravel within coastal scrub, chaparral, grasslands, and sagebrush habitats.	**Moderate.** Coastal sage scrub habitat present in Project Area may provide suitable habitat for this species.	Pre-construction survey, on-site monitoring during ground disturbing activities, and relocation
Stephen's kangaroo rat *Dipodomys stephensi*	E/T/-	Found exclusively in open grasslands or sparse scrub with vegetation cover of less than 50% during summer. Prefers sandy to sandy loam soils with low clay to gravel content.	**Moderate.** Coastal sage scrub habitat present in Project Area may provide suitable habitat for this species. Riverside County has identified Project Area as being within fee area.	Consult with the County of Riverside to determine course of action.

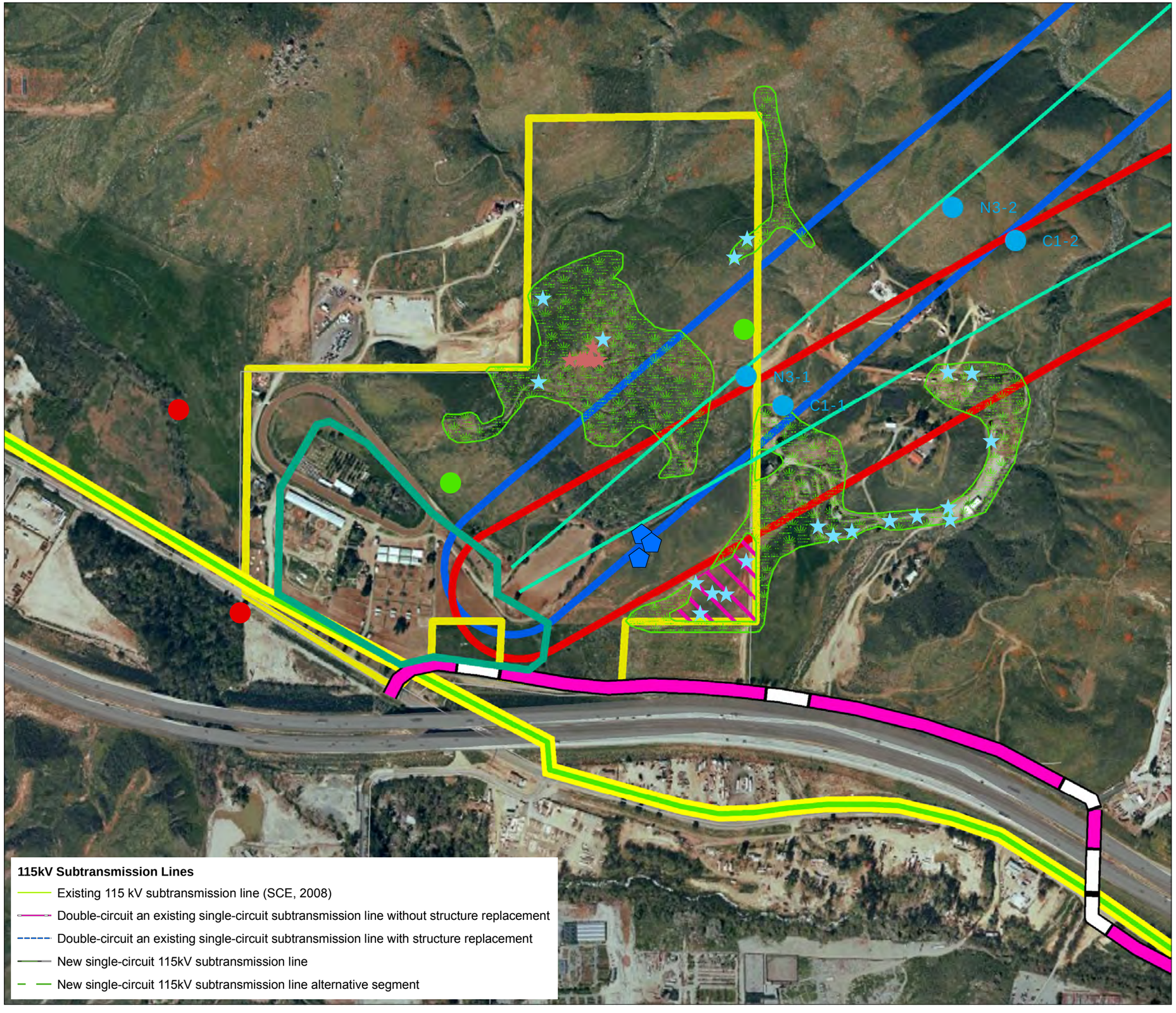
Potential for Special Status Species Wildlife Species to Occur in the Project Area

Species	Federal/State/ Other Status	Preferred Habitat	Potential for Occurrence	Recommendations
western mastiff bat *Eumops perotis californicus*	-/SC/-	Roosts in crevices in cliff faces, high buildings, trees, and tunnels within many open arid to semi-arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.	**Moderate.** Trees and buildings in the Project Area may provide suitable roost habitat for this species.	Preconstruction roost survey in appropriate habitat.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	-/SC/-	Occurs in coastal sage scrub habitats in Southern California. Prefers intermediate canopy stages of shrub habitats and open shrub/herbaceous and tree/herbaceous edge vegetation communities.	**Moderate.** Coastal sage scrub habitat present in Project Area may provide suitable habitat for this species.	Preconstruction survey.
San Diego desert woodrat *Neotoma lepida intermedia*	-/SC/-	Particularly abundant in rock outcrops and rock cliffs and slopes. Prefer moderate to dense canopies within coastal scrub.	**Present.** Woodrat nests were observed within northern portion of Project Area	Conduct woodrat nest preconstruction surveys in scrub habitats scheduled for ground disturbance.

Note: List compiled from the California Department of Fish and Game Natural Diversity Database (2008) for the Alberhill, Steel Peak, Lake Elsinore, and Lake Mathews USGS 7.5' quadrangles and a review of other CDFG lists and publications.

T = Threatened, E = Endangered, SC = Species of Concern

Figure 4.4-7
Focused Survey Results and Sensitive Species Observations



Incidental Species
- Long-Spined Spineflower
- Paniculate Tarplant
- Coastal California Gnatcatcher
- Least Bell's Vireo

Kangaroo Rat Survey
- Active Kangaroo Rat Burrow and Scat Location
- L: Likely SKR (High likelihood that SKR are present, but trapping is needed to confirm)
- P: Potential for SKR (Generally suitable for SKR. Scat and burrows are present at most P locations. Due to the density of herb cover, sign could not be found at some P polygons. However, kangaroo rats may still be present at very low density at these locations and they should be trapped.)

Substations
- Proposed Alberhill Substation
- Proposed C1 Project Area
- Proposed N3 Project Area

500kV Transmission Lines (SCE, 2007)
- Proposed 500kV Transmission Line
- SCE Service Territory Boundary (SCE, 2006)
- Water Features (TBM, 2008)

N
W E
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0 250 500 1,000
Feet

115kV Subtransmission Lines
- Existing 115 kV subtransmission line (SCE, 2008)
- Double-circuit an existing single-circuit subtransmission line without structure replacement
- Double-circuit an existing single-circuit subtransmission line with structure replacement
- New single-circuit 115kV subtransmission line
- New single-circuit 115kV subtransmission line alternative segment

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C:\Projects\alberhill substation\ArcGIS\peainew\4_4-7 focused survey results.mxd

Alberhill Substation Site
Recommended Best Management Practices
August 30, 2011

During demolition and weed abatement activities, the following best management practices should be implemented.

Air Quality

Weed Abatement

- Exempt from the provisions of Rule 403 provided that:
    - Mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil

Demolition

- Apply water in sufficient quantities to prevent the generation of visible dust plumes
    - Stabilize wind erodible surfaces to reduce dust
    - Stabilize surface soil where support equipment and vehicles will operate
    - Stabilize loose soils and demolition debris
    - Comply with SCAQMD Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities

Biological Resources

See Attachment A

Cultural Resources

See Attachment B

Water Quality

See Attachment C

Attachment A

Alberhill Substation Site

August 29, 2011

Due to the need for pre-activity surveys and the timing of the Labor Day holiday, work cannot begin until Wednesday September 7, 2011.

BIO Plan Measures for Weed Abatement

- Weed abatement activities shall be delayed until after nesting season has ended (generally August 31).

- Should demolition and weed abatement activities be conducted outside of the recommended timeframe (after August 31 but before September 30), the following is required:

    - A thorough nesting bird survey shall be conducted **no more than seven days prior to weed abatement activities**.

    - If active nests are detected, which is anticipated, the biological monitor shall establish no-impact buffer zones.

    - Generally, the biological monitor shall establish a 50-100 foot buffer zone for common bird species to be determined by qualified biologist.

    - The biological monitor shall establish a 300-foot buffer for raptors and regulatory-status species (i.e., American kestrel, yellow warbler, rufous-crowned sparrow, etc). Some buffers may be decreased depending on the species and observations made by the biologist regarding the birds' level of agitation.

    - No work shall be permitted within these buffer zones.

    - Monitoring of all weed abatement activities shall be performed by a qualified biological monitor.

    - No removal of trees is permitted.

    - Soil disturbance is not permitted, and vegetation to be removed will be done no lower than ground level.

    - A qualified biological monitor shall be onsite during all weed abatement activities, and in coordination with the SCE Lead Biologist, has the authority to stop work in the event non-compliance issues arise.

If you have any questions, please contact the SCE Lead Biologist, Wendy Worthey, at (619) 890-2762.

BIO Plan Measures for Building Demolition

- All demolition activities must be delayed until after nesting season has ended (generally August 31). A qualified biologist will determine is nesting season has ceased as the recommended timeframe approaches.

- All demolition activities must occur before September 30 in order to avoid potential impacts to winter roosting bat species.

- All demolition activities shall be scheduled when both day and night-time temperatures exceed 50°F.

- All demolition shall occur exclusively during daytime hours.

- A bat biologist shall be onsite **3 days prior to demolition** to perform a pre-demolition survey. Further, the bat biologist shall be onsite to ensure that no bats have moved in to occupy the buildings since the time of the pre-demolition survey.

- If results of the pre-demolition emergence survey indicate that bats are not roosting in the buildings at that time, then proceed with demolition within three days of the survey. If it is not possible to completely demolish the buildings on a single day, removal of the roof of each building is recommended to discourage roosting by bats prior to completion of demolition.

- If the results of the pre-demolition survey indicate that bats are roosting in one or more of the buildings then structure modification is recommended (e.g. roof removal) to make the building inhospitable to bats. Structure modification shall be overseen by a bat biologist and shall focus on changing the air flow, light and moisture conditions within the occupied structures. After structure modifications are made, demolition activities can continue in buildings adjacent to known bat roosts. Modified structures shall require an additional pre-construction survey to determine if bats are still using the building as a roost. Once it is determined the modified structure no longer contains an active bat roost, demolition shall occur the following day.

- The bat biologist and/or biological monitor shall be onsite during all demolition activities, and is authorized to remove and relocate bats (not more than 10 bats) if found in the buildings, assuming the work is done outside of the bat winter torpor period. Bat removal and relocation is not permitted during the winter torpor period.

- In coordination with the SCE Lead Biologist, the bat biologist has the authority to stop work in the event non-compliance issues arise.

If you have any questions, please contact the SCE Lead Biologist, Wendy Worthey, at (619) 890-2762.

Attachment B

Alberhill Substation Site

Cultural Plan Measures for Weed Abatement

August 30, 2011

- An archaeological monitor must be present during all ground disturbing activities including grading and digging.

- The Historic Structure and Historic Reservoir as seen on the attached map must be avoid during weed abatement.

- If suspected archaeological materials (e.g. pottery fragments, concentrations of chipped volcanic glass [obsidian], smoothed or polished stone tools, concentrations of shell or bone, buried house or wall foundations, etc.) are unearthed during any Project activity, work should be halted in the area (5-meter radius) of the find(s) and the onsite archaeologist must be contacted immediately. If an archaeological monitor is not present, contact the Project Archaeologist, Andrew Belcourt at 626-999-7178.

- If human remains or suspected human remains are encountered, State Health and Safety Code Section 7050.5 states that "...no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and distribution pursuant to Public Resources Code Section 5097.98." Therefore, all work shall halt within 200 feet of the suspected remains and the Project Archaeologist Andrew Belcourt (626-999-7178) must be contacted immediately. If Belcourt is unavailable, contact the on-call archaeologist via the Edison Operator. Work shall not resume in the area of the suspected remains until authorized.

- **Additional study will be required if any changes to the project are proposed.**

Please do not hesitate to contact the Project Archaeologist, Andrew Belcourt (626-999-7178) with any questions regarding the above measures.

Attachment: Cultural Resources Map

Cultural Plan Measures for Building Demolition

August 30, 2011

- Prior to abatement and demolition, we must receive a letter from the SHPO stating that they concur with SCE's evaluation that the historic structure on the Alberhill Substation site is not eligible for the California Register of Historical Resources.

- An archaeological monitor must be present during all ground disturbing activities including grading and digging.

- If suspected archaeological materials (e.g. pottery fragments, concentrations of chipped volcanic glass [obsidian], smoothed or polished stone tools, concentrations of shell or bone, buried house or wall foundations, etc.) are unearthed during any Project activity, work should be halted in the area (5-meter radius) of the find(s) and the onsite archaeologist must be contacted immediately. If an archaeological monitor is not present, contact the Project Archaeologist, Andrew Belcourt at 626-999-7178.

- If human remains or suspected human remains are encountered, State Health and Safety Code Section 7050.5 states that "...no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and distribution pursuant to Public Resources Code Section 5097.98." Therefore, all work shall halt within 200 feet of the suspected remains and the Project Archaeologist Andrew Belcourt (626-999-7178) must be contacted immediately. If Belcourt is unavailable, contact the on-call archaeologist via the Edison Operator. Work shall not resume in the area of the suspected remains until authorized.

- **Additional study will be required if any changes to the project are proposed.**

Please do not hesitate to contact the Project Archaeologist, Andrew Belcourt (626-999-7178) with any questions regarding the above measures.

Attachments: Cultural Resources Map

Southern California Edison

Legend

Cultural Resource

Issued For: Cultural

Date: August 24, 2011

Prepared By: Sidor

Project Number:

Index Map

Projection: NAD 83 UTM Zone 11

Contains Transmission Information Distribution limited to FERC Standards of Conduct

CONFIDENTIAL

Contains Critical Electric Infrastructure Information

If any questions contact Corporate Security (27875) for handling/storage requirements.

Thomas Bros. Maps® A RAND MCNALLY COMPANY

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Attachment C

Alberhill Substation Site

Recommended BMPs for Demolition Activities

August 29, 2011

The following BMP list and narrative has been selected for the demolition activities associated with the Alberhill Substation Project. Please note that Southern California Edison (SCE) has determined that there will be no soil disturbance within these activities.

The Contractor will implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, the good housekeeping measures shall consist of the following:

1. Identify the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions.

2. Store chemicals (fuel) in watertight containers with appropriate secondary containment to prevent any spillage or leakage or in a storage shed providing complete enclosure.

3. Minimize exposure of construction materials to precipitation (not applicable to materials designed to be outdoors and exposed to the environment).

4. Implement BMPs to control the off-site tracking of loose construction and landscape materials.

The Contractor will implement good housekeeping measures for waste management, which at a minimum shall consist of the following:

1. Preventing disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

2. Ensuring the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the stormwater drainage system or receiving water.

3. Cleaning or replacing sanitation facilities and inspecting them regularly for leaks and spills.

4. Covering waste disposal containers at the end of every business day and prior to a rain event.

5. Preventing discharges from waste disposal containers to the stormwater drainage system or receiving water. Containing and securely protecting stockpiled waste material from wind and rain at all times unless actively being used.

6. Implementing procedures that effectively address hazardous and non-hazardous spills.

7. Developing a spill response and implementation procedure prior to commencement of construction activities. To these ends, the Contractor shall require that:

    - Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly.

- Appropriate spill response personnel are assigned and trained.

8. Ensuring the containment of concrete washout areas and other washout areas that may contain additional pollutants to prevent discharge into the underlying soil and onto the surrounding areas.

The Contractor will implement good housekeeping for vehicle storage and maintenance, which at a minimum, shall consist of the following:

1. Preventing oil, grease, or fuel from leaking into the ground, storm drains or surface waters.

2. Implementing appropriate BMPs whenever equipment or vehicles are fueled, maintained, or stored.

3. Cleaning leaks immediately and disposing of leaked materials properly.

The Contractor will implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.

The Contractor will practice proper management of non-stormwater by:

1. Implementing measures to control all non-stormwater discharges during demolition

2. Washing vehicles in such a manner as to prevent non-stormwater discharges to surface waters or Municipal Separate Storm Sewer System (MS4) drainage systems.

3. Cleaning streets in such a manner as to prevent unauthorized non-stormwater discharges from reaching surface water or MS4 drainage systems.

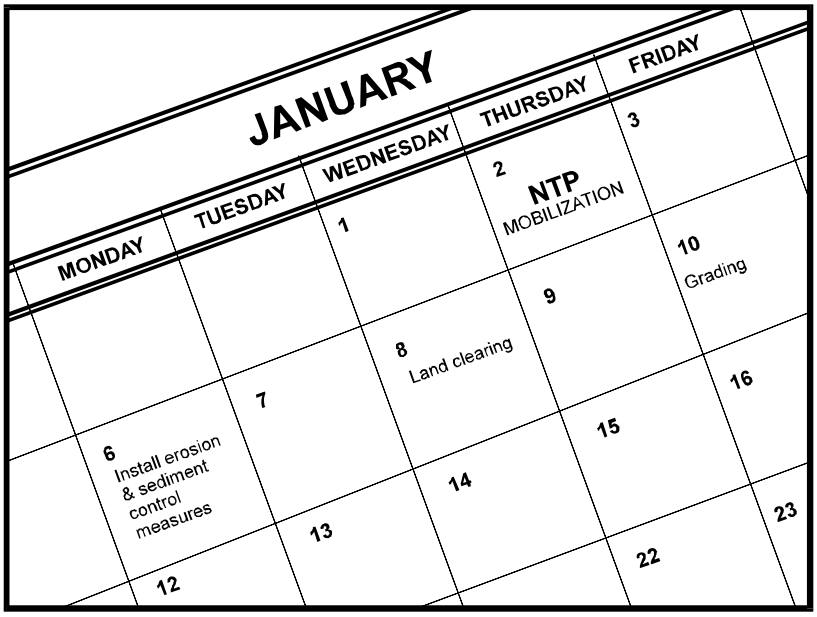
<u>RECOMMENDED BMPs:</u>

The following BMPs are recommended for demolition activities:

EC-1: Scheduling
EC-2: Preservation of Existing Vegetation
SE-7: Street Sweeping and Vacuuming
WE-1: Wind Erosion Control
TC-1: Stabilized Construction Entrance/Exit
NS-1: Water Conservation Practices
NS-9: Vehicle and Equipment Fueling
NS-10: Vehicle and Equipment Maintenance
WM-1: Material Delivery and Storage
WM-2: Material Use
WM-4: Spill Prevention and Control
WM-5: Solid Waste Management
WM-6: Hazardous Waste Management (if needed)
WM-8: Concrete Waste Management
WM-9: Sanitary/Septic Waste Management

CASQA BMP Fact Sheets have been included for reference.

Scheduling EC-1



Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TC	Tracking Control	☒
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Suitable Applications

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Limitations

- Environmental constraints such as nesting season prohibitions reduce the full capabilities of this BMP.

Implementation

- Avoid rainy periods. Schedule major grading operations during dry months when practical. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means or to install sediment trapping devices.
- Plan the project and develop a schedule showing each phase

of construction. Clearly show how the rainy season relates to soil disturbing and re-stabilization activities. Incorporate the construction schedule into the SWPPP.

- Include on the schedule, details on the rainy season implementation and deployment of:
  - Erosion control BMPs
  - Sediment control BMPs
  - Tracking control BMPs
  - Wind erosion control BMPs
  - Non-stormwater BMPs
  - Waste management and materials pollution control BMPs
- Include dates for activities that may require non-stormwater discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, pavement cleaning, etc.
- Work out the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, foundation pouring utilities installation, etc., to minimize the active construction area during the rainy season.
  - Sequence trenching activities so that most open portions are closed before new trenching begins.
  - Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
  - Schedule establishment of permanent vegetation during appropriate planting time for specified vegetation.
- Non-active areas should be stabilized as soon as practical after the cessation of soil disturbing activities or one day prior to the onset of precipitation.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year round to deploy erosion control and sediment control BMPs. Erosion may be caused during dry seasons by un-seasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

Costs

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

Inspection and Maintenance

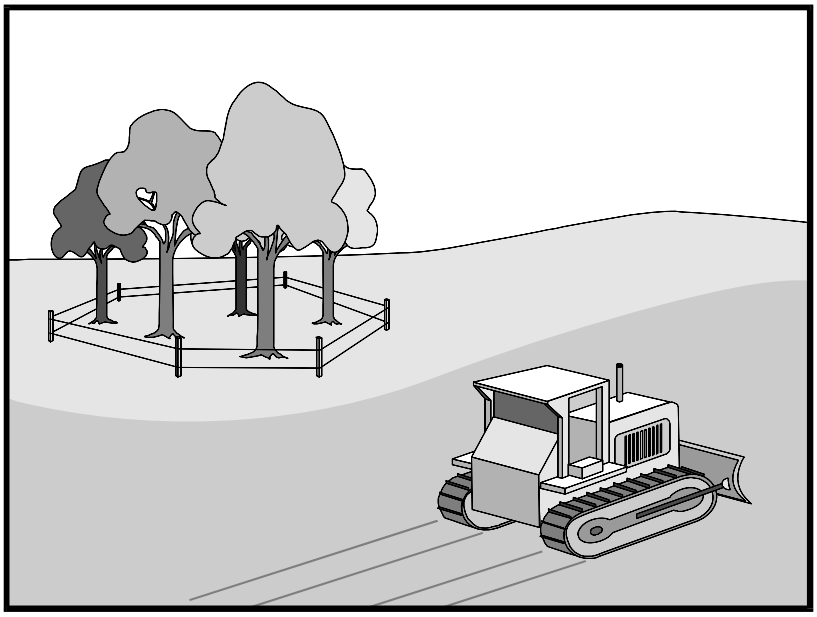
- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted.
- Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

References

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005), U.S. Environmental Protection Agency, Office of Water, September 1992.

Preservation Of Existing Vegetation EC-2



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TC	Tracking Control	
WE	Wind Erosion Control	
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WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs, and grasses that protect soil from erosion.

Suitable Applications

Preservation of existing vegetation is suitable for use on most projects. Large project sites often provide the greatest opportunity for use of this BMP. Suitable applications include the following:

- Areas within the site where no construction activity occurs, or occurs at a later date. This BMP is especially suitable to multi year projects where grading can be phased.
- Areas where natural vegetation exists and is designated for preservation. Such areas often include steep slopes, watercourse, and building sites in wooded areas.
- Areas where local, state, and federal government require preservation, such as vernal pools, wetlands, marshes, certain oak trees, etc. These areas are usually designated on the plans, or in the specifications, permits, or environmental documents.
- Where vegetation designated for ultimate removal can be temporarily preserved and be utilized for erosion control and sediment control.

Limitations

- Requires forward planning by the owner/developer,

contractor, and design staff.

- Limited opportunities for use when project plans do not incorporate existing vegetation into the site design.

- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactory for the planned development.

Implementation

The best way to prevent erosion is to not disturb the land. In order to reduce the impacts of new development and redevelopment, projects may be designed to avoid disturbing land in sensitive areas of the site (e.g., natural watercourses, steep slopes), and to incorporate unique or desirable existing vegetation into the site's landscaping plan. Clearly marking and leaving a buffer area around these unique areas during construction will help to preserve these areas as well as take advantage of natural erosion prevention and sediment trapping.

Existing vegetation to be preserved on the site must be protected from mechanical and other injury while the land is being developed. The purpose of protecting existing vegetation is to ensure the survival of desirable vegetation for shade, beautification, and erosion control. Mature vegetation has extensive root systems that help to hold soil in place, thus reducing erosion. In addition, vegetation helps keep soil from drying rapidly and becoming susceptible to erosion. To effectively save existing vegetation, no disturbances of any kind should be allowed within a defined area around the vegetation. For trees, no construction activity should occur within the drip line of the tree.

Timing

- Provide for preservation of existing vegetation prior to the commencement of clearing and grubbing operations or other soil disturbing activities in areas where no construction activity is planned or will occur at a later date.

Design and Layout

- Mark areas to be preserved with temporary fencing. Include sufficient setback to protect roots.
  - Orange colored plastic mesh fencing works well.
  - Use appropriate fence posts and adequate post spacing and depth to completely support the fence in an upright position.
- Locate temporary roadways, stockpiles, and layout areas to avoid stands of trees, shrubs, and grass.
- Consider the impact of grade changes to existing vegetation and the root zone.
- Maintain existing irrigation systems where feasible. Temporary irrigation may be required.
- Instruct employees and subcontractors to honor protective devices. Prohibit heavy equipment, vehicular traffic, or storage of construction materials within the protected area.

Costs

There is little cost associated with preserving existing vegetation if properly planned during the project design, and these costs may be offset by aesthetic benefits that enhance property values. During construction, the cost for preserving existing vegetation will likely be less than the cost of applying erosion and sediment controls to the disturbed area. Replacing vegetation inadvertently destroyed during construction can be extremely expensive, sometimes in excess of $10,000 per tree.

Inspection and Maintenance

During construction, the limits of disturbance should remain clearly marked at all times. Irrigation or maintenance of existing vegetation should be described in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below should be followed:

- Verify that protective measures remain in place. Restore damaged protection measures immediately.
- Serious tree injuries shall be attended to by an arborist.
- Damage to the crown, trunk, or root system of a retained tree shall be repaired immediately.
- Trench as far from tree trunks as possible, usually outside of the tree drip line or canopy. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching or tunneling near or under trees to be retained, place tunnels at least 18 in. below the ground surface, and not below the tree center to minimize impact on the roots.
- Do not leave tree roots exposed to air. Cover exposed roots with soil as soon as possible. If soil covering is not practical, protect exposed roots with wet burlap or peat moss until the tunnel or trench is ready for backfill.
- Cleanly remove the ends of damaged roots with a smooth cut.
- Fill trenches and tunnels as soon as possible. Careful filling and tamping will eliminate air spaces in the soil, which can damage roots.
- If bark damage occurs, cut back all loosened bark into the undamaged area, with the cut tapered at the top and bottom and drainage provided at the base of the wood. Limit cutting the undamaged area as much as possible.
- Aerate soil that has been compacted over a trees root zone by punching holes 12 in. deep with an iron bar, and moving the bar back and forth until the soil is loosened. Place holes 18 in. apart throughout the area of compacted soil under the tree crown.
- Fertilization
  - Fertilize stressed or damaged broadleaf trees to aid recovery.
  - Fertilize trees in the late fall or early spring.

- Apply fertilizer to the soil over the feeder roots and in accordance with label instructions, but never closer than 3 ft to the trunk. Increase the fertilized area by one-fourth of the crown area for conifers that have extended root systems.

- Retain protective measures until all other construction activity is complete to avoid damage during site cleanup and stabilization.

References

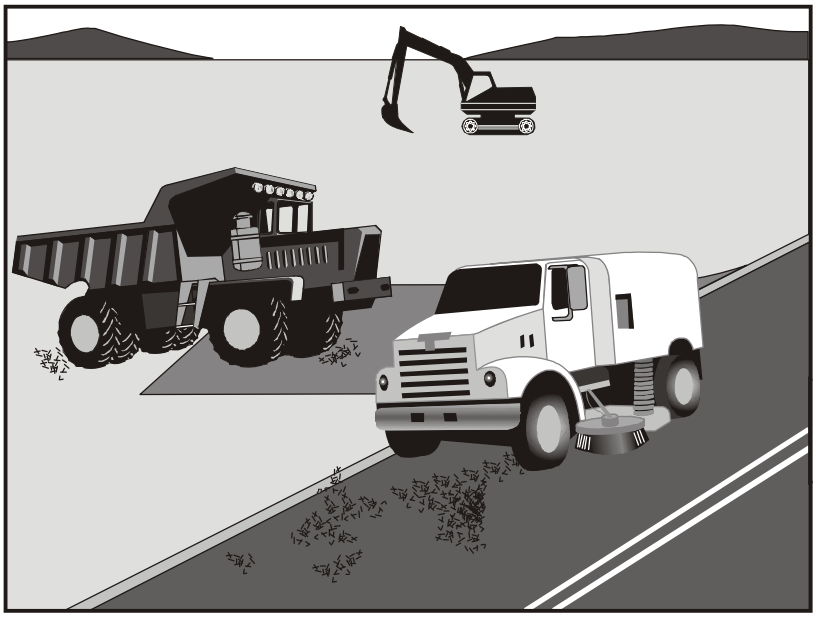
County of Sacramento Tree Preservation Ordinance, September 1981.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for The Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Street Sweeping and Vacuuming SE-7



Categories		
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SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Suitable Applications

Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

Limitations

Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).

Implementation

- Controlling the number of points where vehicles can leave the site will allow sweeping and vacuuming efforts to be focused, and perhaps save money.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking should be swept or vacuumed on a daily basis.
- Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.

- If not mixed with debris or trash, consider incorporating the removed sediment back into the project

Costs

Rental rates for self-propelled sweepers vary depending on hopper size and duration of rental. Expect rental rates from $58/hour (3 yd^3 hopper) to $88/hour (9 yd^3 hopper), plus operator costs. Hourly production rates vary with the amount of area to be swept and amount of sediment. Match the hopper size to the area and expect sediment load to minimize time spent dumping.

Inspection and Maintenance

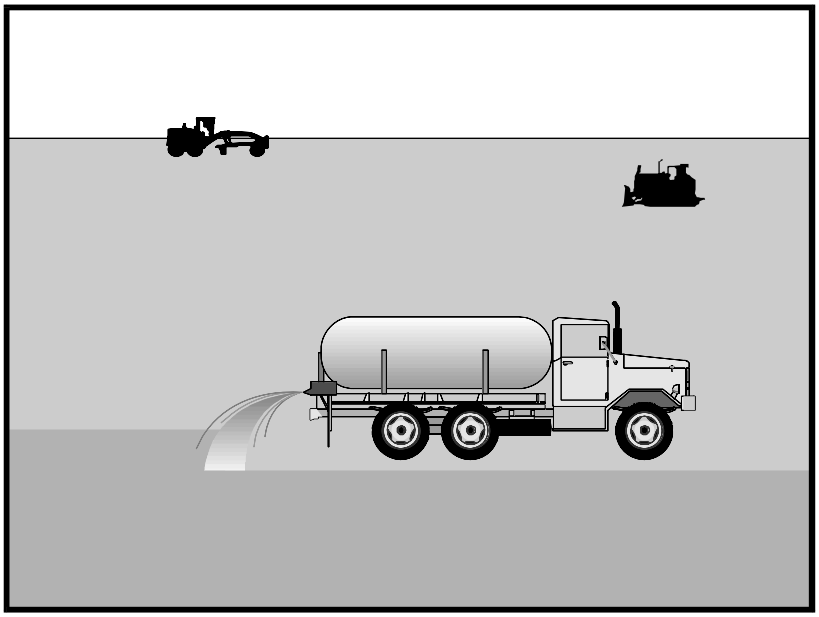
- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- When actively in use, points of ingress and egress must be inspected daily.
- When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions.
- Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- Adjust brooms frequently; maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Labor Surcharge and Equipment Rental Rates, State of California Department of Transportation (Caltrans), April 1, 2002 – March 31, 2003.

Wind Erosion Control WE-1



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SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	☑
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WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-5 Soil Binders

Description and Purpose

Wind erosion or dust control consists of applying water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

California's Mediterranean climate, with a short "wet" season and a typically long, hot "dry" season, allows the soils to thoroughly dry out. During the dry season, construction activities are at their peak, and disturbed and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment. Site conditions and climate can make dust control more of an erosion problem than water based erosion. Additionally, many local agencies, including Air Quality Management Districts, require dust control and/or dust control permits in order to comply with local nuisance laws, opacity laws (visibility impairment) and the requirements of the Clean Air Act. Wind erosion control is required to be implemented at all construction sites greater than 1 acre by the General Permit.

Suitable Applications

Most BMPs that provide protection against water-based erosion will also protect against wind-based erosion and dust control requirements required by other agencies will generally meet wind erosion control requirements for water quality protection. Wind erosion control BMPs are suitable during the following construction activities:

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Construction vehicle traffic on unpaved roads
- Drilling and blasting activities
- Soils and debris storage piles
- Batch drop from front-end loaders
- Areas with unstabilized soil
- Final grading/site stabilization

Limitations

- Watering prevents dust only for a short period (generally less than a few hours) and should be applied daily (or more often) to be effective.
- Over watering may cause erosion and track-out.
- Oil or oil-treated subgrade should not be used for dust control because the oil may migrate into drainageways and/or seep into the soil.
- Chemical dust suppression agents may have potential environmental impacts. Selected chemical dust control agents should be environmentally benign.
- Effectiveness of controls depends on soil, temperature, humidity, wind velocity and traffic.
- Chemical dust suppression agents should not be used within 100 feet of wetlands or water bodies.
- Chemically treated subgrades may make the soil water repellant, interfering with long-term infiltration and the vegetation/re-vegetation of the site. Some chemical dust suppressants may be subject to freezing and may contain solvents and should be handled properly.
- In compacted areas, watering and other liquid dust control measures may wash sediment or other constituents into the drainage system.
- If the soil surface has minimal natural moisture, the affected area may need to be pre-wetted so that chemical dust control agents can uniformly penetrate the soil surface.

Implementation

Dust Control Practices

Dust control BMPs generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. The following table presents dust control practices that can be applied to varying site conditions that could potentially cause dust. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation and mulching can be employed for areas of occasional or no construction traffic. Preventive measures include minimizing surface areas to be disturbed, limiting onsite vehicle traffic to 15 mph or less, and controlling the number and activity of vehicles on a site at any given time.

Chemical dust suppressants include: mulch and fiber based dust palliatives (e.g. paper mulch with gypsum binder), salts and brines (e.g. calcium chloride, magnesium chloride), non-petroleum based organics (e.g. vegetable oil, lignosulfonate), petroleum based organics (e.g. asphalt emulsion, dust oils, petroleum resins), synthetic polymers (e.g. polyvinyl acetate, vinyls, acrylic), clay additives (e.g. bentonite, montimorillonite) and electrochemical products (e.g. enzymes, ionic products).

Site Condition	Dust Control Practices							
	Permanent Vegetation	Mulching	Wet Suppression (Watering)	Chemical Dust Suppression	Gravel or Asphalt	Temporary Gravel Construction Entrances/Equipment Wash Down	Synthetic Covers	Minimize Extent of Disturbed Area
Disturbed Areas not Subject to Traffic	x	x	x	x	x			x
Disturbed Areas Subject to Traffic			x	x	x	x		x
Material Stockpiles		x	x	x			x	x
Demolition			x			x	x	
Clearing/ Excavation			x	x				x
Truck Traffic on Unpaved Roads			x	x	x	x	x	
Tracking					x	x		

Additional preventive measures include:

- Schedule construction activities to minimize exposed area (see EC-1, Scheduling).
- Quickly treat exposed soils using water, mulching, chemical dust suppressants, or stone/gravel layering.
- Identify and stabilize key access points prior to commencement of construction.
- Minimize the impact of dust by anticipating the direction of prevailing winds.
- Restrict construction traffic to stabilized roadways within the project site, as practicable.
- Water should be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment should be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit should be available at all times to apply water or dust palliative to the project.
- If reclaimed waste water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality

Control Board (RWQCB) requirements. Non-potable water should not be conveyed in tanks or drain pipes that will be used to convey potable water and there should be no connection between potable and non-potable supplies. Non-potable tanks, pipes, and other conveyances should be marked, "NON-POTABLE WATER - DO NOT DRINK."

- Pave or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads.
- Provide covers for haul trucks transporting materials that contribute to dust.
- Provide for rapid clean up of sediments deposited on paved roads. Furnish stabilized construction road entrances and wheel wash areas.
- Stabilize inactive areas of construction sites using temporary vegetation or chemical stabilization methods.

For chemical stabilization, there are many products available for chemically stabilizing gravel roadways and stockpiles. If chemical stabilization is used, the chemicals should not create any adverse effects on stormwater, plant life, or groundwater and should meet all applicable regulatory requirements.

Costs

Installation costs for water and chemical dust suppression vary based on the method used and the length of effectiveness. Annual costs may be high since some of these measures are effective for only a few hours to a few days.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check areas protected to ensure coverage.
- Most water-based dust control measures require frequent application, often daily or even multiple times per day. Obtain vendor or independent information on longevity of chemical dust suppressants.

References

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

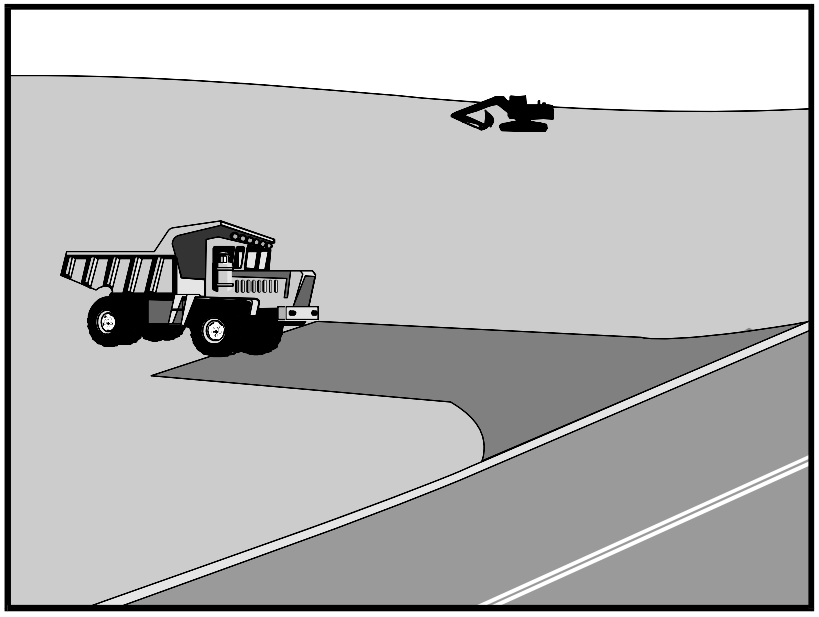
California Air Pollution Control Laws, California Air Resources Board, updated annually.

Construction Manual, Chapter 4, Section 10, "Dust Control"; Section 17, "Watering"; and Section 18, "Dust Palliative", California Department of Transportation (Caltrans), July 2001.

Prospects for Attaining the State Ambient Air Quality Standards for Suspended Particulate Matter (PM10), Visibility Reducing Particles, Sulfates, Lead, and Hydrogen Sulfide, California Air Resources Board, April 1991.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stabilized Construction Entrance/Exit TC-1



Description and Purpose

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Suitable Applications

Use at construction sites:

- Where dirt or mud can be tracked onto public roads.
- Adjacent to water bodies.
- Where poor soils are encountered.
- Where dust is a problem during dry weather conditions.

Limitations

- Entrances and exits require periodic top dressing with additional stones.
- This BMP should be used in conjunction with street sweeping on adjacent public right of way.
- Entrances and exits should be constructed on level ground only.
- Stabilized construction entrances are rather expensive to construct and when a wash rack is included, a sediment trap of some kind must also be provided to collect wash water

Categories

EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

runoff.

Implementation

General

A stabilized construction entrance is a pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights of way or streets. Reducing tracking of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust.

Where traffic will be entering or leaving the construction site, a stabilized construction entrance should be used. NPDES permits require that appropriate measures be implemented to prevent tracking of sediments onto paved roadways, where a significant source of sediments is derived from mud and dirt carried out from unpaved roads and construction sites.

Stabilized construction entrances are moderately effective in removing sediment from equipment leaving a construction site. The entrance should be built on level ground. Advantages of the Stabilized Construction Entrance/Exit is that it does remove some sediment from equipment and serves to channel construction traffic in and out of the site at specified locations. Efficiency is greatly increased when a washing rack is included as part of a stabilized construction entrance/exit.

Design and Layout

- Construct on level ground where possible.
- Select 3 to 6 in. diameter stones.
- Use minimum depth of stones of 12 in. or as recommended by soils engineer.
- Construct length of 50 ft minimum, and 30 ft minimum width.
- Rumble racks constructed of steel panels with ridges and installed in the stabilized entrance/exit will help remove additional sediment and to keep adjacent streets clean.
- Provide ample turning radii as part of the entrance.
- Limit the points of entrance/exit to the construction site.
- Limit speed of vehicles to control dust.
- Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
- Route runoff from stabilized entrances/exits through a sediment trapping device before discharge.
- Design stabilized entrance/exit to support heaviest vehicles and equipment that will use it.

Stabilized Construction Entrance/Exit TC-1

- Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. Do not use asphalt concrete (AC) grindings for stabilized construction access/roadway.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 12 in. depth, or place aggregate to a depth recommended by a geotechnical engineer. A crushed aggregate greater than 3 in. but smaller than 6 in. should be used.
- Designate combination or single purpose entrances and exits to the construction site.
- Require that all employees, subcontractors, and suppliers utilize the stabilized construction access.
- Implement SE-7, Street Sweeping and Vacuuming, as needed.
- All exit locations intended to be used for more than a two-week period should have stabilized construction entrance/exit BMPs.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMPs are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment.
- Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment.
- Keep all temporary roadway ditches clear.
- Check for damage and repair as needed.
- Replace gravel material when surface voids are visible.
- Remove all sediment deposited on paved roadways within 24 hours.
- Remove gravel and filter fabric at completion of construction

Costs

Average annual cost for installation and maintenance may vary from $1,200 to $4,800 each, averaging $2,400 per entrance. Costs will increase with addition of washing rack, and sediment trap. With wash rack, costs range from $1,200 - $6,000 each, averaging $3,600 per entrance.

References

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April 1992.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

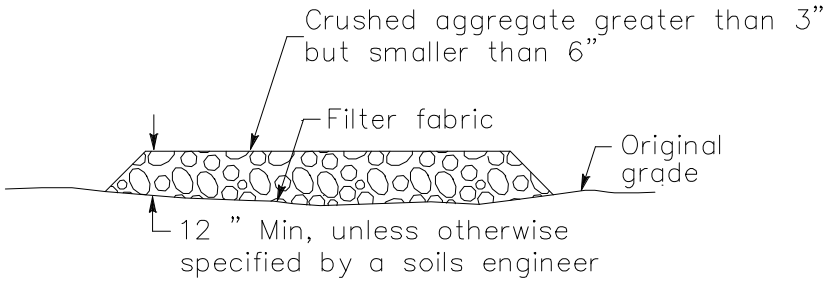
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

Guidance Specifying Management Measures for Nonpoint Pollution in Coastal Waters, EPA 840-B-9-002, USEPA, Office of Water, Washington, DC, 1993.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Stabilized Construction Entrance/Exit TC-1



SECTION B–B
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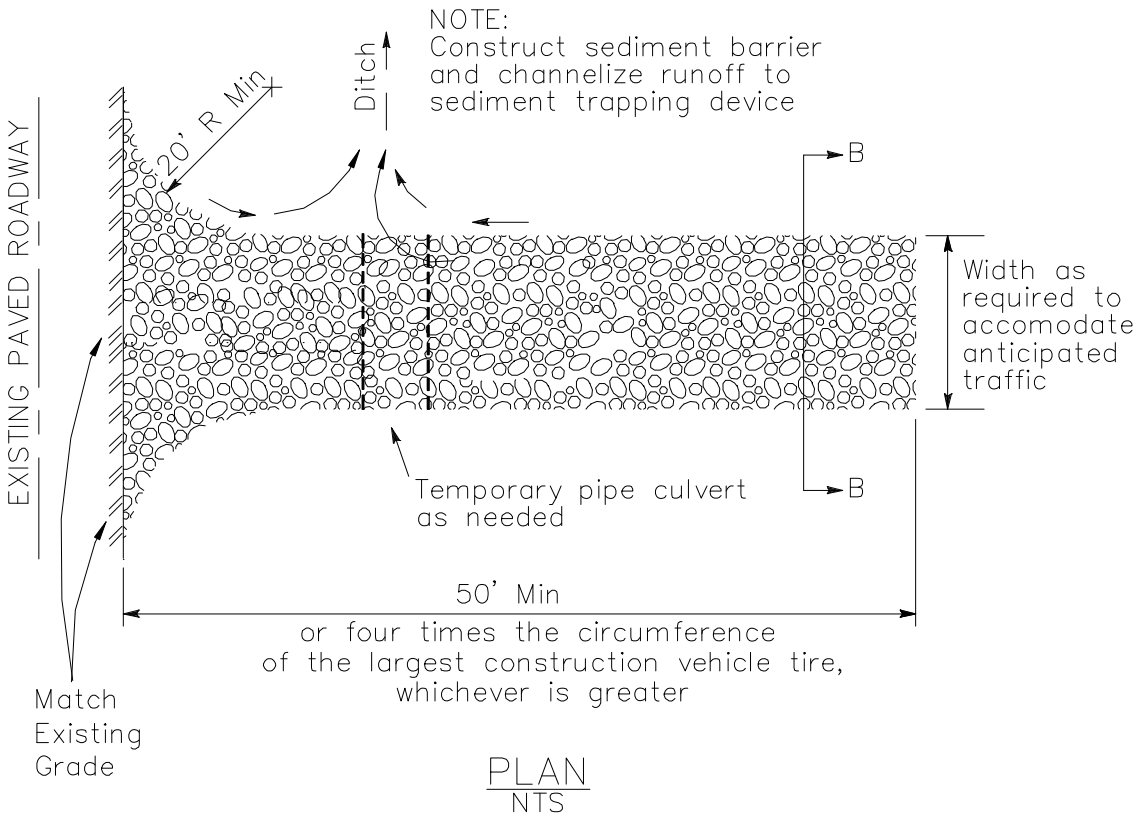

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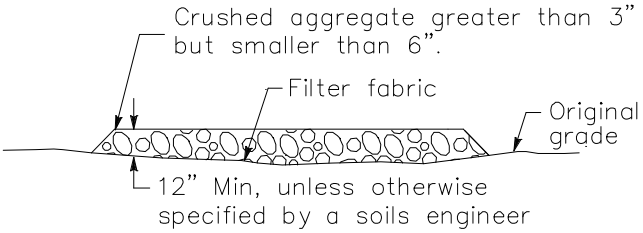
NTS

Stabilized Construction Entrance/Exit TC-1



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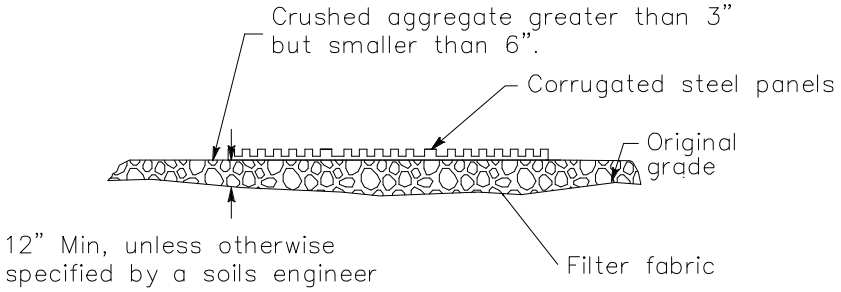
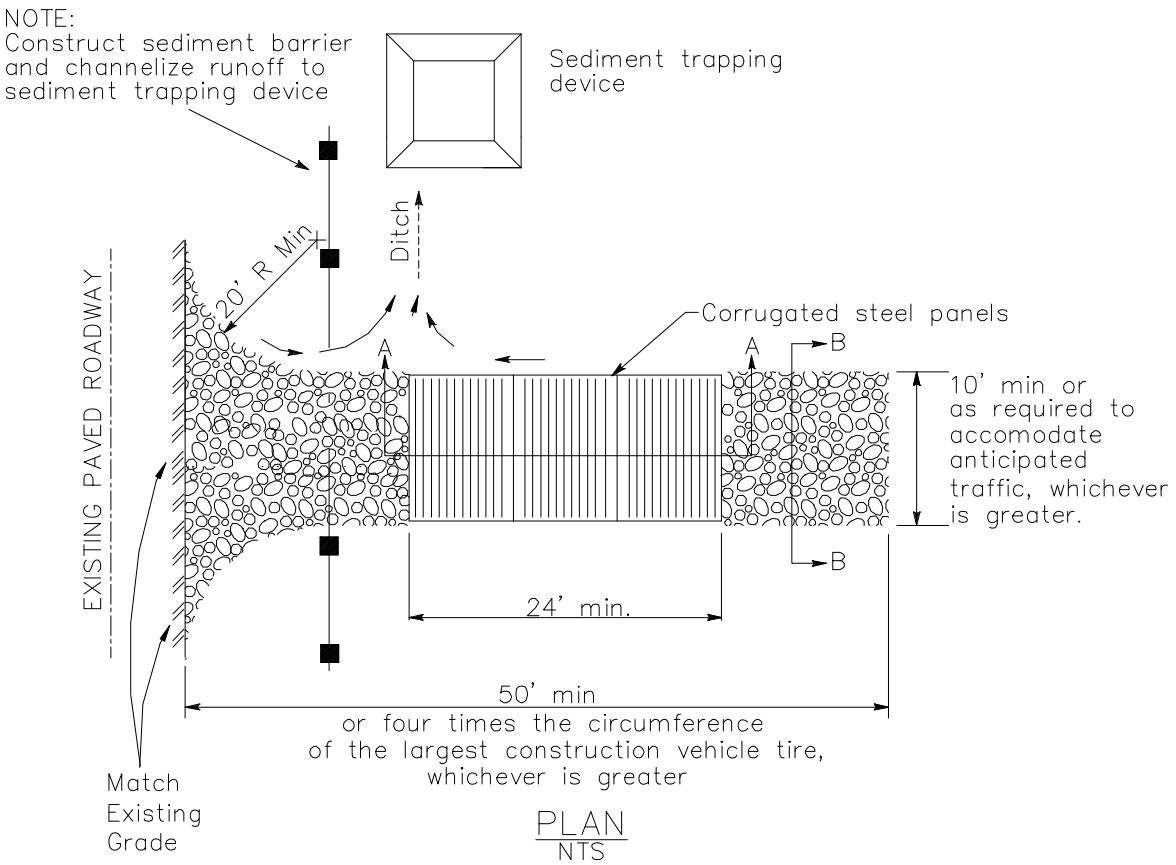


SECTION A–A
NOT TO SCALE



PLAN
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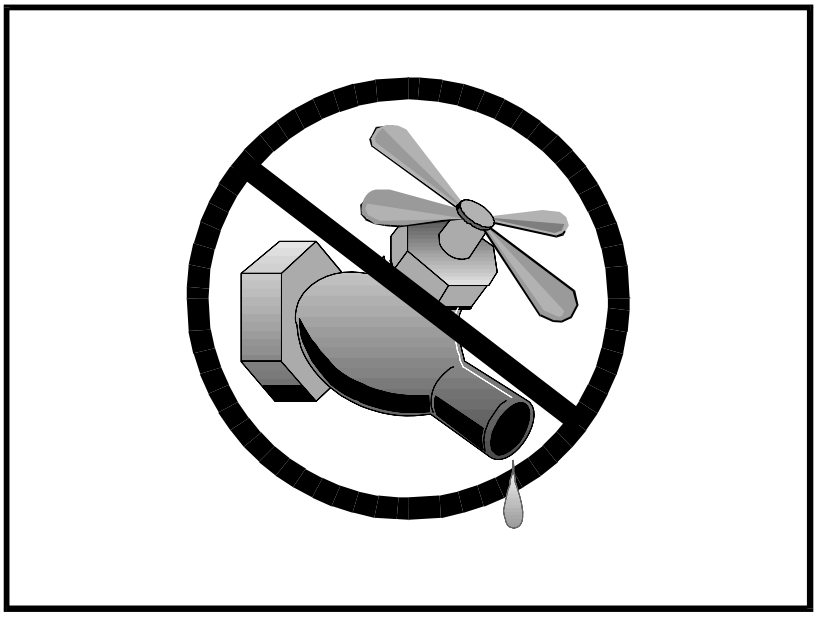
Water Conservation Practices NS-1



Categories		
EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and the transport of pollutants offsite. These practices can reduce or eliminate non-stormwater discharges.

Suitable Applications

Water conservation practices are suitable for all construction sites where water is used, including piped water, metered water, trucked water, and water from a reservoir.

Limitations

- None identified.

Implementation

- Keep water equipment in good working condition.
- Stabilize water truck filling area.
- Repair water leaks promptly.
- Washing of vehicles and equipment on the construction site is discouraged.
- Avoid using water to clean construction areas. If water must be used for cleaning or surface preparation, surface should be swept and vacuumed first to remove dirt. This will minimize amount of water required.
- Direct construction water runoff to areas where it can soak

into the ground or be collected and reused.

- Authorized non-stormwater discharges to the storm drain system, channels, or receiving waters are acceptable with the implementation of appropriate BMPs.
- Lock water tank valves to prevent unauthorized use.

Costs

The cost is small to none compared to the benefits of conserving water.

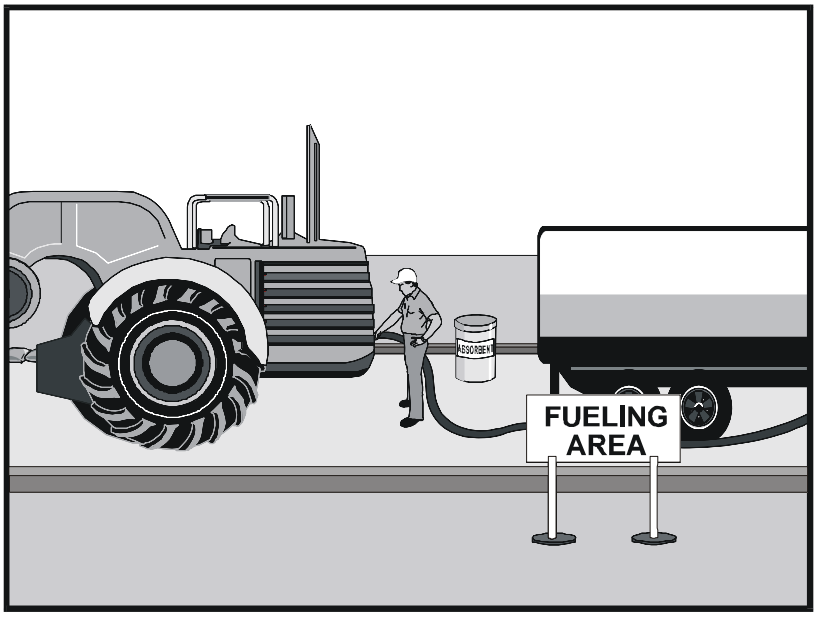
Inspection and Maintenance

- Inspect and verify that activity based BMPs are in place prior to the commencement of authorized non-stormwater discharges.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges are occuring.
- Repair water equipment as needed to prevent unintended discharges.
  - Water trucks
  - Water reservoirs (water buffalos)
  - Irrigation systems
  - Hydrant connections

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Vehicle and Equipment Fueling NS-9



Categories

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☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment fueling takes place.

Limitations

Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

Implementation

- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
- Discourage "topping-off" of fuel tanks.
- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should

be disposed of properly after use.

- Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the adsorbent materials promptly and dispose of properly.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and large excavators, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- When fueling must take place onsite, designate an area away from drainage courses to be used. Fueling areas should be identified in the SWPPP.
- Dedicated fueling areas should be protected from stormwater runon and runoff, and should be located at least 50 ft away from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent runon, runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD).
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

Costs

- All of the above measures are low cost except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.

Inspection and Maintenance

- Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.

References

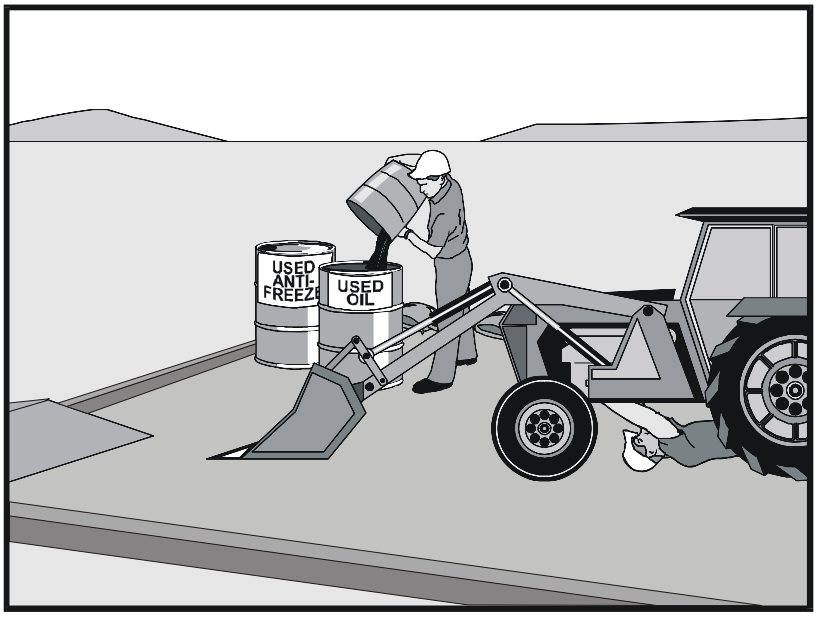
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Vehicle & Equipment Maintenance NS-10



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Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	
Nutrients	☑
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the contamination of stormwater resulting from vehicle and equipment maintenance by running a "dry and clean site". The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing cover for materials stored outside, checking for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

Suitable Applications

These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

Onsite vehicle and equipment maintenance should only be used where it is impractical to send vehicles and equipment offsite for maintenance and repair. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/Exit.

Outdoor vehicle or equipment maintenance is a potentially significant source of stormwater pollution. Activities that can contaminate stormwater include engine repair and service, changing or replacement of fluids, and outdoor equipment storage and parking (engine fluid leaks). For further information on vehicle or equipment servicing, see NS-8, Vehicle and Equipment Cleaning, and NS-9, Vehicle and

Equipment Fueling.

Implementation

- Use offsite repair shops as much as possible. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur onsite, use designated areas, located away from drainage courses. Dedicated maintenance areas should be protected from stormwater runon and runoff, and should be located at least 50 ft from downstream drainage facilities and watercourses.
- Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- All fueling trucks and fueling areas are required to have spill kits and/or use other spill protection devices.
- Use adsorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately.
- Keep vehicles and equipment clean; do not allow excessive build-up of oil and grease.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic and transmission fluids. Provide secondary containment and covers for these materials if stored onsite.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- Drip pans or plastic sheeting should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than 1 hour.
- For long-term projects, consider using portable tents or covers over maintenance areas if maintenance cannot be performed offsite.
- Consider use of new, alternative greases and lubricants, such as adhesive greases, for chassis lubrication and fifth-wheel lubrication.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.

- Repair leaks of fluids and oil immediately.

Listed below is further information if you must perform vehicle or equipment maintenance onsite.

Safer Alternative Products

- Consider products that are less toxic or hazardous than regular products. These products are often sold under an "environmentally friendly" label.
- Consider use of grease substitutes for lubrication of truck fifth-wheels. Follow manufacturers label for details on specific uses.
- Consider use of plastic friction plates on truck fifth-wheels in lieu of grease. Follow manufacturers label for details on specific uses.

Waste Reduction

Parts are often cleaned using solvents such as trichloroethylene, trichloroethane, or methylene chloride. Many of these cleaners are listed in California Toxic Rule as priority pollutants. These materials are harmful and must not contaminate stormwater. They must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check the list of active ingredients to see whether it contains chlorinated solvents. The "chlor" term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

Recycling and Disposal

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous wastes separate, do not mix used oil solvents, and keep chlorinated solvents (like,-trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around. Provide cover and secondary containment until these materials can be removed from the site.

Oil filters can be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Costs

All of the above are low cost measures. Higher costs are incurred to setup and maintain onsite maintenance areas.

Vehicle & Equipment Maintenance NS-10

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Keep ample supplies of spill cleanup materials onsite.
- Maintain waste fluid containers in leak proof condition.
- Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

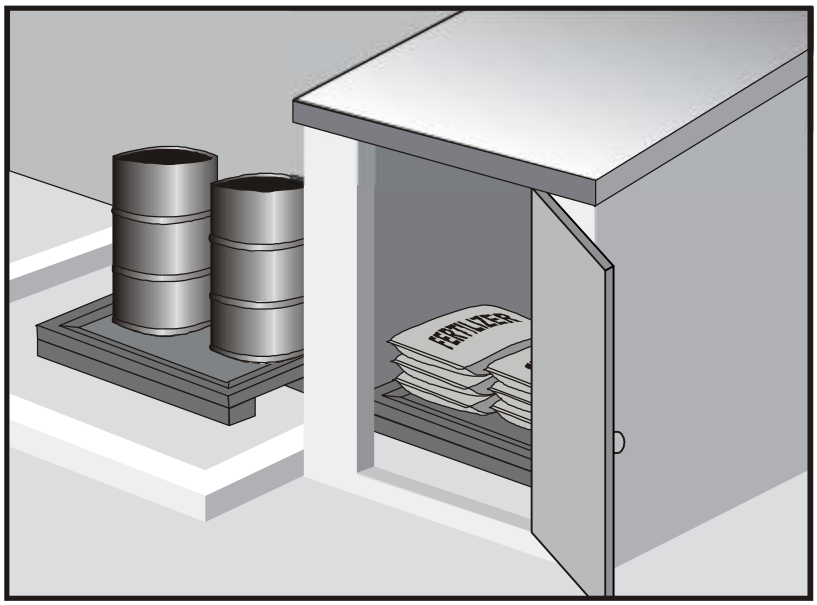
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Material Delivery and Storage WM-1



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EC	Erosion Control	
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Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease

- Asphalt and concrete components
- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

Implementation

The following steps should be taken to minimize risk:

- Chemicals must be stored in water tight containers with appropriate secondary containment or in a storage shed.
- When a material storage area is located on bare soil, the area should be lined and bermed.
- Use containment pallets or other practical and available solutions, such as storing materials within newly constructed buildings or garages, to meet material storage requirements.
- Stack erodible landscape material on pallets and cover when not in use.
- Contain all fertilizers and other landscape materials when not in use.
- Temporary storage areas should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be available on-site for all materials stored that have the potential to effect water quality.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located away from waterways, if possible.
    - Avoid transport near drainage paths or waterways.
    - Surround with earth berms or other appropriate containment BMP. See EC-9, Earth Dikes and Drainage Swales.
    - Place in an area that will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.

- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- Keep ample spill cleanup supplies appropriate for the materials being stored. Ensure that cleanup supplies are in a conspicuous, labeled area.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove and dispose of materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Materials should be covered prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or completely enclosed storage sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous wastes.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

Spill Cleanup

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.
- If spills or leaks of materials occur that are not contained and could discharge to surface waters, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

Cost

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Keep storage areas clean and well organized, including a current list of all materials onsite.
- Inspect labels on containers for legibility and accuracy.

- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

References

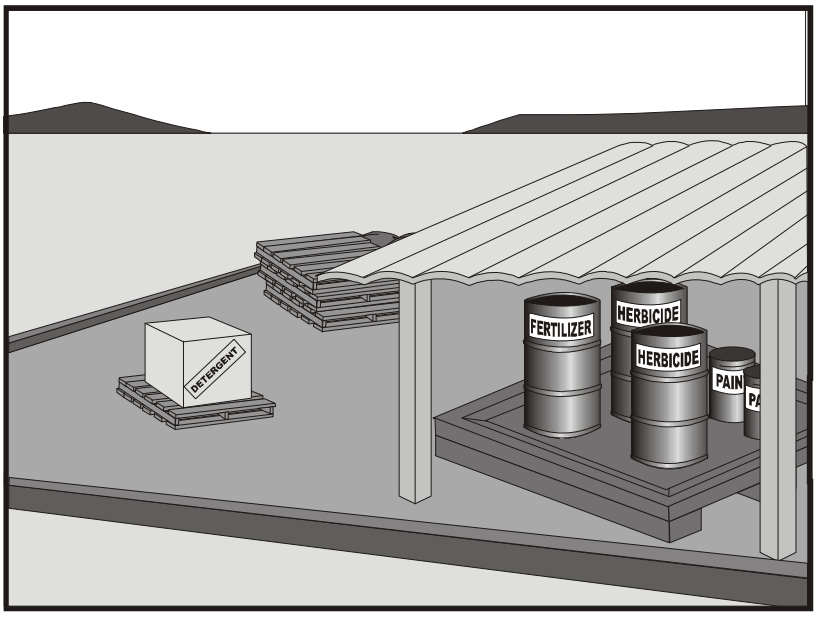
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Material Use WM-2



Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for use at all construction projects. These procedures apply when the following materials are used or prepared onsite:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Other materials that may be detrimental if released to the environment

Limitations

Safer alternative building and construction products may not be available or suitable in every instance.

Implementation

The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train personnel who use pesticides. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct onsite inspections.
- The preferred method of termiticide application is soil injection near the existing or proposed structure foundation/slab; however, if not feasible, soil drench application of termiticides should follow EPA label guidelines and the following recommendations (most of which are applicable to most pesticide applications):
  - Do not treat soil that is water-saturated or frozen.
  - Application shall not commence within 24-hours of a predicted precipitation event with a 40% or greater probability. Weather tracking must be performed on a daily basis prior to termiticide application and during the period of termiticide application.
  - Do not allow treatment chemicals to runoff from the target area. Apply proper quantity to prevent excess runoff. Provide containment for and divert stormwater from application areas using berms or diversion ditches during application.
  - Dry season: Do not apply within 10 feet of storm drains. Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or ponds; estuaries; and commercial fish farm ponds).
  - Wet season: Do not apply within 50 feet of storm drains or aquatic habitats (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or ponds; estuaries; and commercial fish farm ponds) unless a vegetative buffer is present (if so, refer to dry season requirements).
  - Do not make on-grade applications when sustained wind speeds are above 10 mph (at application site) at nozzle end height.
  - Cover treatment site prior to a rain event in order to prevent run-off of the pesticide into non-target areas. The treated area should be limited to a size that can be backfilled and/or covered by the end of the work shift. Backfilling or covering of the treated area shall be done by the end of the same work shift in which the application is made.
  - The applicator must either cover the soil him/herself or provide written notification of the above requirement to the contractor on site and to the person commissioning the

application (if different than the contractor). If notice is provided to the contractor or the person commissioning the application, then they are responsible under the Federal Insecticide Fungicide, and Rodenticide Act (FIFRA) to ensure that: 1) if the concrete slab cannot be poured over the treated soil within 24 hours of application, the treated soil is covered with a waterproof covering (such as polyethylene sheeting), and 2) the treated soil is covered if precipitation is predicted to occur before the concrete slab is scheduled to be poured.

- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydraulic application. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals before predicted rainfall.
- Train employees and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse to a drain leading to a sanitary sewer where permitted, or contain for proper disposal off site. For oil-based paints, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.
- Document the location, time, chemicals applied, and applicator's name and qualifications.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.
- Discontinue use of erodible landscape material within 2 days prior to a forecasted rain event and materials should be covered and/or bermed.

- Provide containment for material use areas such as masons' areas or paint mixing/preparation areas to prevent materials/pollutants from entering stormwater.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Ensure employees and subcontractors throughout the job are using appropriate practices.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

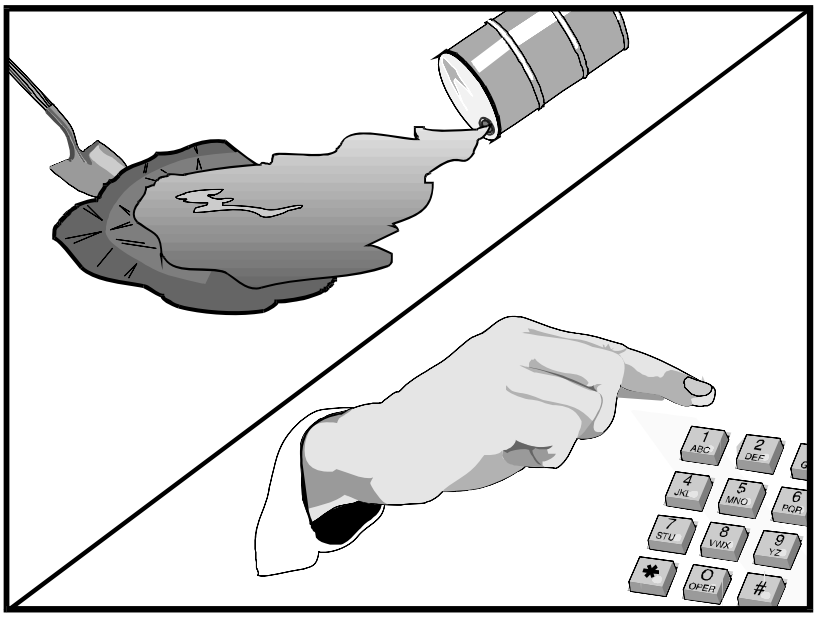
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Comments on Risk Assessments Risk Reduction Options for Cypermethrin: Docket No. OPP–2005–0293; California Stormwater Quality Association (CASQA) letter to USEPA, 2006.Environmental Hazard and General Labeling for Pyrethroid Non-Agricultural Outdoor Products, EPA-HQ-OPP-2008-0331-0021; USEPA, 2008.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Spill Prevention and Control WM-4



Categories		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

This BMP is suitable for all construction projects. Spill control procedures are implemented anytime chemicals or hazardous substances are stored on the construction site, including the following materials:

- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals

- Fuels
- Lubricants
- Other petroleum distillates

Limitations

- In some cases it may be necessary to use a private spill cleanup company.
- This BMP applies to spills caused by the contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored onsite

Implementation

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn't compromise clean up activities.
- Do not bury or wash spills with water.

- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
  - Contain the spread of the spill.
  - Recover spilled materials.
  - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

- Spills should be cleaned up immediately:
  - Contain spread of the spill.
  - Notify the project foreman immediately.
  - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
  - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
  - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
  - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
  - Notify the Governor's Office of Emergency Services Warning Center, (916) 845-8911.
  - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
  - Notification should first be made by telephone and followed up with a written report.
  - The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
  - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designate areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

Costs

Prevention of leaks and spills is inexpensive. Treatment and/ or disposal of contaminated soil or water can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.

- Keep ample supplies of spill control and cleanup materials onsite, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

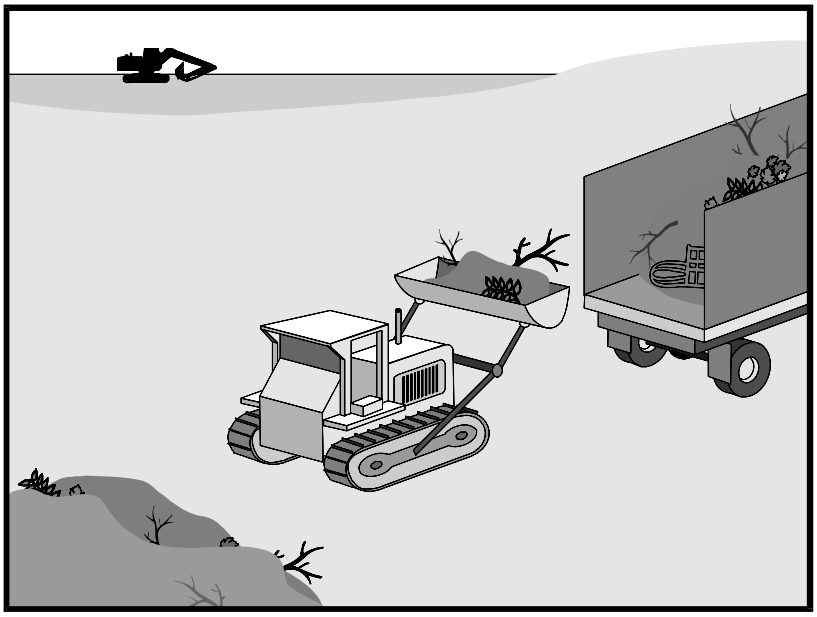
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Solid Waste Management WM-5



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EC	Erosion Control	
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WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

Description and Purpose

Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction
- Packaging materials including wood, paper, and plastic
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces and masonry products
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Construction wastes including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials
- Highway planting wastes, including vegetative material,

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plant containers, and packaging materials

Limitations

Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Implementation

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

Education

- Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).

- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

Collection, Storage, and Disposal

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Trash receptacles should be provided in the contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly manner.
- Stormwater runon should be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters should be securely covered from wind and rain by covering the waste with tarps or plastic.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- For disposal of hazardous waste, see WM-6, Hazardous Waste Management. Have hazardous waste hauled to an appropriate disposal and/or recycling facility.

- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Inspect construction waste area regularly.
- Arrange for regular waste collection.

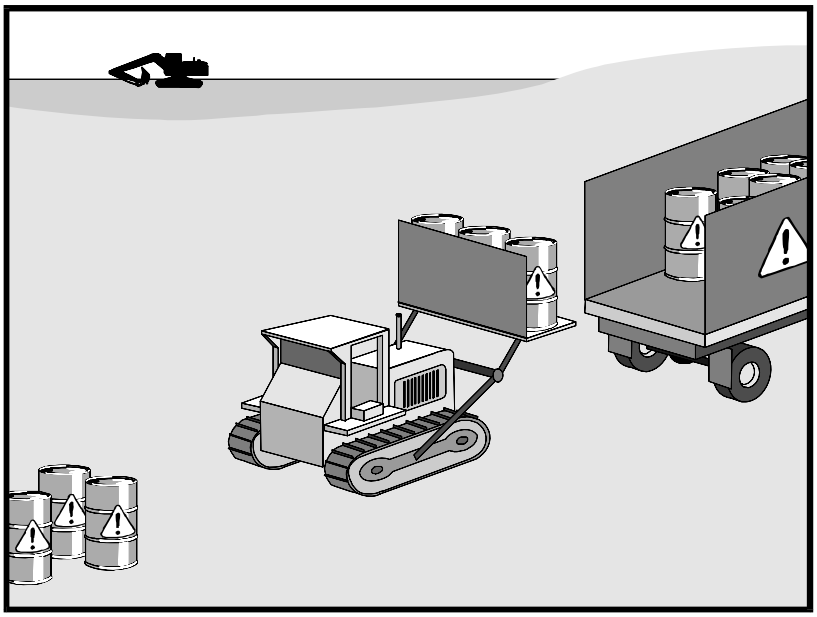
References

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Hazardous Waste Management WM-6



Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Hazardous waste management practices are implemented on construction projects that generate waste from the use of:

- Petroleum Products
- Asphalt Products
- Concrete Curing Compounds
- Pesticides
- Palliatives
- Acids
- Septic Wastes
- Paints
- Stains
- Solvents
- Wood Preservatives
- Roofing Tar
- Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302

Categories

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑

Potential Alternatives

None

In addition, sites with existing structures may contain wastes, which must be disposed of in accordance with federal, state, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints
- Asbestos
- PCBs (particularly in older transformers)

Limitations

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Nothing in this BMP relieves the contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.
- This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to WM-7, Contaminated Soil Management.

Implementation

The following steps will help reduce stormwater pollution from hazardous wastes:

Material Use

- Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179.
- All hazardous waste should be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.
- Waste containers should be stored in temporary containment facilities that should comply with the following requirements:
  - Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater.
  - Temporary containment facility should be impervious to the materials stored there for a minimum contact time of 72 hours.
  - Temporary containment facilities should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be placed into drums after each rainfall. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids should be sent to an approved disposal site.
  - Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.

  - Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.

  - Throughout the rainy season, temporary containment facilities should be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs.

- Drums should not be overfilled and wastes should not be mixed.

- Unless watertight, containers of dry waste should be stored on pallets.

- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application. Allow time for infiltration and avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with federal and state regulations.

- Paint brushes and equipment for water and oil based paints should be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused should be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste.

- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.

- The following actions should be taken with respect to temporary contaminant:

  - Ensure that adequate hazardous waste storage volume is available.

  - Ensure that hazardous waste collection containers are conveniently located.

  - Designate hazardous waste storage areas onsite away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.

  - Minimize production or generation of hazardous materials and hazardous waste on the job site.

  - Use containment berms in fueling and maintenance areas and where the potential for spills is high.

  - Segregate potentially hazardous waste from non-hazardous construction site debris.

  - Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.

- Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.
- Place hazardous waste containers in secondary containment.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes.
- Use all of the product before disposing of the container.
- Do not remove the original product label; it contains important safety and disposal information.

Waste Recycling Disposal

- Select designated hazardous waste collection areas onsite.
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix wastes, this can cause chemical reactions, making recycling impossible and complicating disposal.
- Recycle any useful materials such as used oil or water-based paint.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste (e.g., excess oil-based paint and sludge) is collected, removed, and disposed of only at authorized disposal areas.

Disposal Procedures

- Waste should be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.
- A Department of Health Services certified laboratory should sample waste to determine the appropriate disposal facility.
- Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.
- Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

Education

- Educate employees and subcontractors on hazardous waste storage and disposal procedures.
- Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.
- Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.
- Instruct employees and subcontractors in identification of hazardous and solid waste.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings).
- The contractor's superintendent or representative should oversee and enforce proper hazardous waste management procedures and practices.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Hazardous waste should be regularly collected.
- A foreman or construction supervisor should monitor onsite hazardous waste storage and disposal procedures.
- Waste storage areas should be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.
- Hazardous spills should be cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS) and the instructions posted at the project site.

- The National Response Center, at (800) 424-8802, should be notified of spills of federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302. Also notify the Governors Office of Emergency Services Warning Center at (916) 845-8911.
- A copy of the hazardous waste manifests should be provided.

References

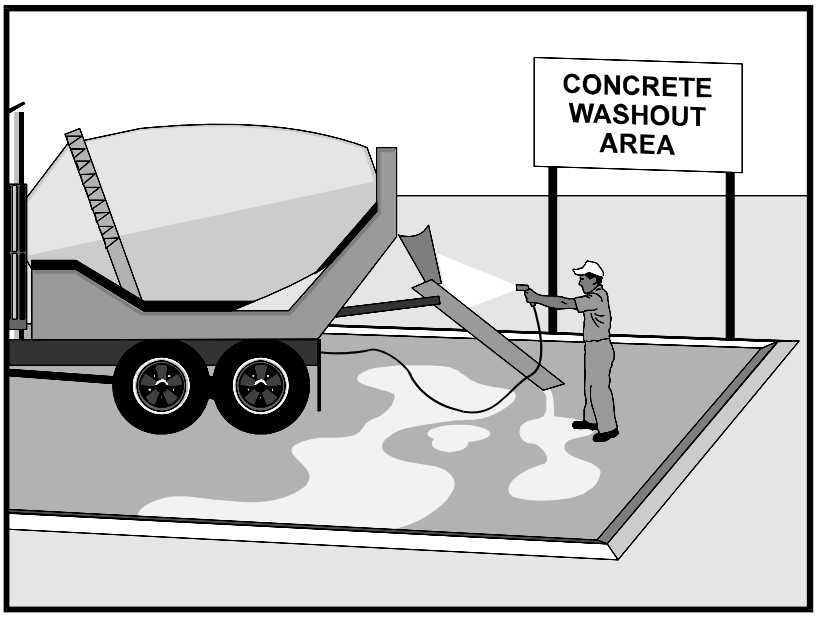
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Concrete Waste Management WM-8



Categories		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Prevent the discharge of pollutants to stormwater from concrete waste by conducting washout onsite or offsite in a designated area, and by employee and subcontractor training.

The General Permit incorporates Numeric Effluent Limits (NEL) and Numeric Action Levels (NAL) for pH (see Section 2 of this handbook to determine your project's risk level and if you are subject to these requirements).

Many types of construction materials, including mortar, concrete, stucco, cement and block and their associated wastes have basic chemical properties that can raise pH levels outside of the permitted range. Additional care should be taken when managing these materials to prevent them from coming into contact with stormwater flows and raising pH to levels outside the accepted range.

Suitable Applications

Concrete waste management procedures and practices are implemented on construction projects where:

- Concrete is used as a construction material or where concrete dust and debris result from demolition activities.
- Slurries containing portland cement concrete (PCC) are generated, such as from saw cutting, coring, grinding, grooving, and hydro-concrete demolition.

- Concrete trucks and other concrete-coated equipment are washed onsite.
- Mortar-mixing stations exist.
- Stucco mixing and spraying .
- See also NS-8, Vehicle and Equipment Cleaning.

Limitations

- Offsite washout of concrete wastes may not always be possible.
- Multiple washouts may be needed to assure adequate capacity and to allow for evaporation.

Implementation

The following steps will help reduce stormwater pollution from concrete wastes:

- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Store dry and wet materials under cover, away from drainage areas. Refer to WM-1, Material Delivery and Storage for more information.
- Avoid mixing excess amounts of concrete.
- Perform washout of concrete trucks in designated areas only, where washout will not reach stormwater.
- Do not wash out concrete trucks into storm drains, open ditches, streets, streams or onto the ground. Trucks should always be washed out into designated facilities.
- Do not allow excess concrete to be dumped onsite, except in designated areas.
- For onsite washout:
  - On larger sites, it is recommended to locate washout areas at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
  - Washout wastes into the temporary washout where the concrete can set, be broken up, and then disposed properly.
  - Washout should be lined so there is no discharge into the underlying soil.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose in the trash.
- See typical concrete washout installation details at the end of this fact sheet.

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.

- Arrange for contractor's superintendent or representative to oversee and enforce concrete waste management procedures.
- Discuss the concrete management techniques described in this BMP (such as handling of concrete waste and washout) with the ready-mix concrete supplier before any deliveries are made.

Concrete Demolition Wastes

- Stockpile concrete demolition waste in accordance with BMP WM-3, Stockpile Management.
- Dispose of or recycle hardened concrete waste in accordance with applicable federal, state or local regulations.

Concrete Slurry Wastes

- PCC and AC waste should not be allowed to enter storm drains or watercourses.
- PCC and AC waste should be collected and disposed of or placed in a temporary concrete washout facility (as described in Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures, below).
- A foreman or construction supervisor should monitor onsite concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.
- Saw-cut concrete slurry should not be allowed to enter storm drains or watercourses. Residue from grinding operations should be picked up by means of a vacuum attachment to the grinding machine or by sweeping. Saw cutting residue should not be allowed to flow across the pavement and should not be left on the surface of the pavement. See also NS-3, Paving and Grinding Operations; and WM-10, Liquid Waste Management.
- Concrete slurry residue should be disposed in a temporary washout facility (as described in Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures, below) and allowed to dry. Dispose of dry slurry residue in accordance with WM-5, Solid Waste Management.

Onsite Temporary Concrete Washout Facility, Transit Truck Washout Procedures

- Temporary concrete washout facilities should be located a minimum of 50 ft from storm drain inlets, open drainage facilities, and watercourses. Each facility should be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign should be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
- Temporary concrete washout facilities should be constructed above grade or below grade at the option of the contractor. Temporary concrete washout facilities should be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.

- Temporary washout facilities should have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete materials generated during washout procedures.
- Temporary washout facilities should be lined to prevent discharge to the underlying ground or surrounding area.
- Washout of concrete trucks should be performed in designated areas only.
- Only concrete from mixer truck chutes should be washed into concrete wash out.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed of or recycled offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete should be broken up, removed, and disposed of per WM-5, Solid Waste Management. Dispose of or recycle hardened concrete on a regular basis.
- Temporary Concrete Washout Facility (Type Above Grade)
    - Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft; however, smaller sites or jobs may only need a smaller washout facility. With any washout, always maintain a sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.
    - Materials used to construct the washout area should conform to the provisions detailed in their respective BMPs (e.g., SE-8 Sandbag Barrier).
    - Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
    - Alternatively, portable removable containers can be used as above grade concrete washouts. Also called a “roll-off”; this concrete washout facility should be properly sealed to prevent leakage, and should be removed from the site and replaced when the container reaches 75% capacity.
- Temporary Concrete Washout Facility (Type Below Grade)
    - Temporary concrete washout facilities (type below grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft. The quantity and volume should be sufficient to contain all liquid and concrete waste generated by washout operations.
    - Lath and flagging should be commercial type.
    - Plastic lining material should be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

- The base of a washout facility should be free of rock or debris that may damage a plastic liner.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and properly disposed or recycled in accordance with federal, state or local regulations. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and properly disposed or recycled in accordance with federal, state or local regulations..

- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

Costs

All of the above are low cost measures. Roll-off concrete washout facilities can be more costly than other measures due to removal and replacement; however, provide a cleaner alternative to traditional washouts. The type of washout facility, size, and availability of materials will determine the cost of the washout.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Temporary concrete washout facilities should be maintained to provide adequate holding capacity with a minimum freeboard of 4 in. for above grade facilities and 12 in. for below grade facilities. Maintaining temporary concrete washout facilities should include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials should be removed and properly disposed or recycled in accordance with federal, state or local regulations.

- Washout facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

- Inspect washout facilities for damage (e.g. torn liner, evidence of leaks, signage, etc.). Repair all identified damage.

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000, Updated March 2003.

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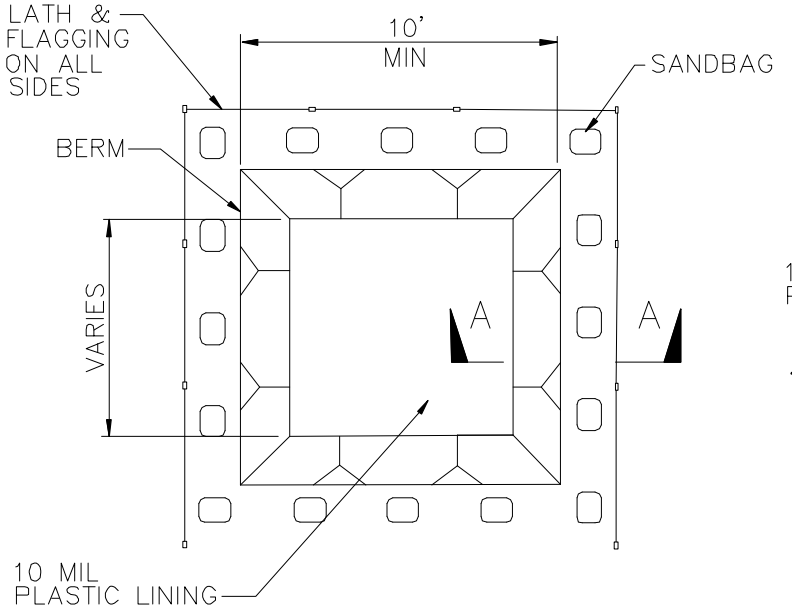
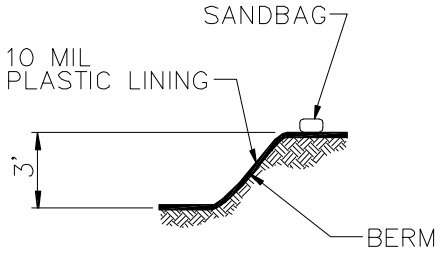
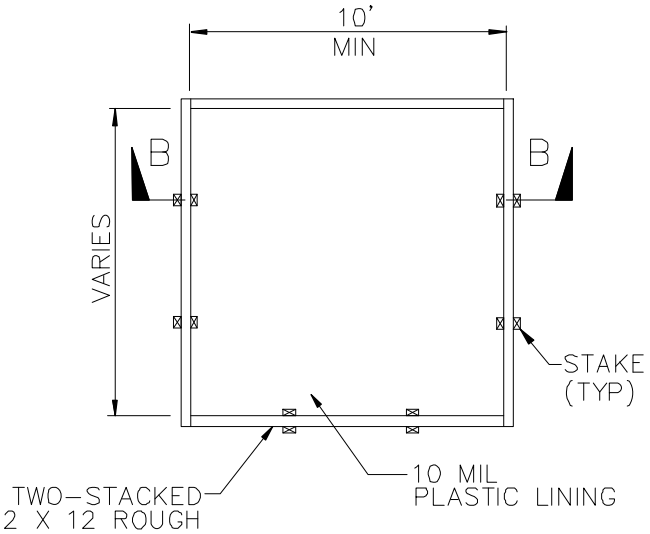


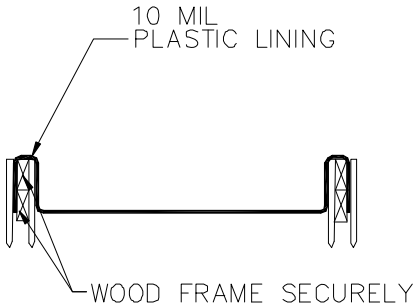
PLAN
NOT TO SCALE
TYPE "BELOW GRADE"



SECTION A–A
NOT TO SCALE



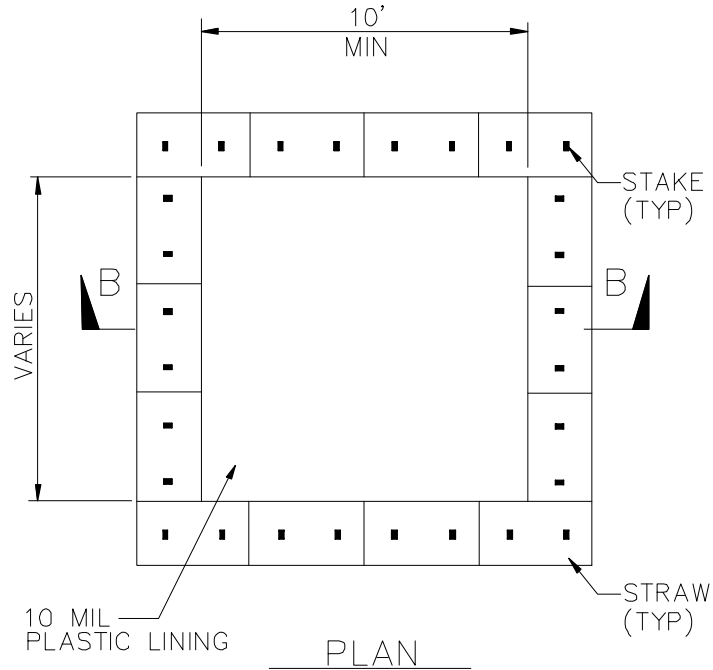
PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"



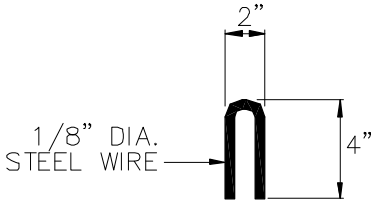
SECTION B–B
NOT TO SCALE

NOTES

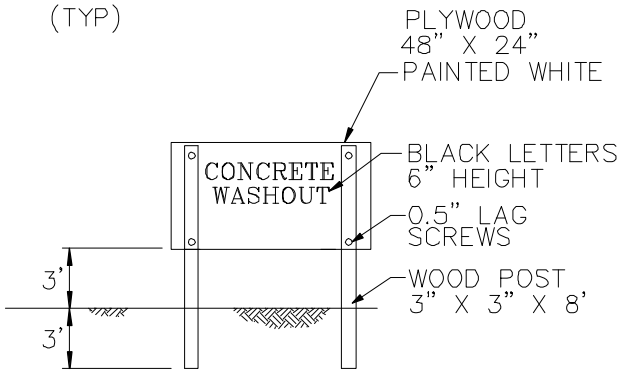
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.



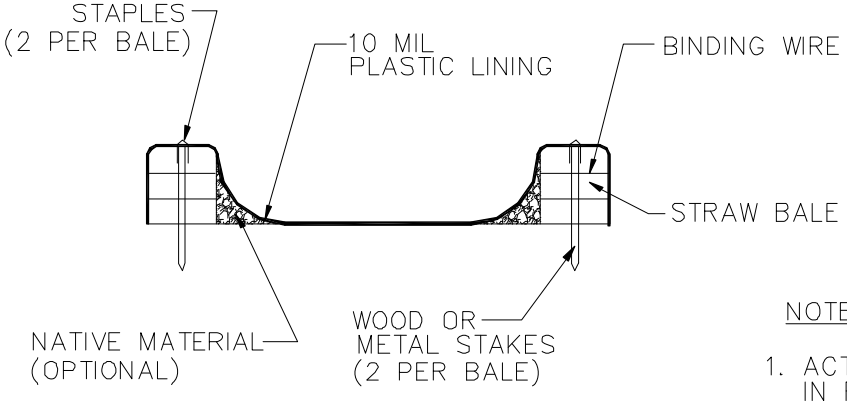
PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"
WITH STRAW BALES



STAPLE DETAIL



CONCRETE WASHOUT
SIGN DETAIL
(OR EQUIVALENT)

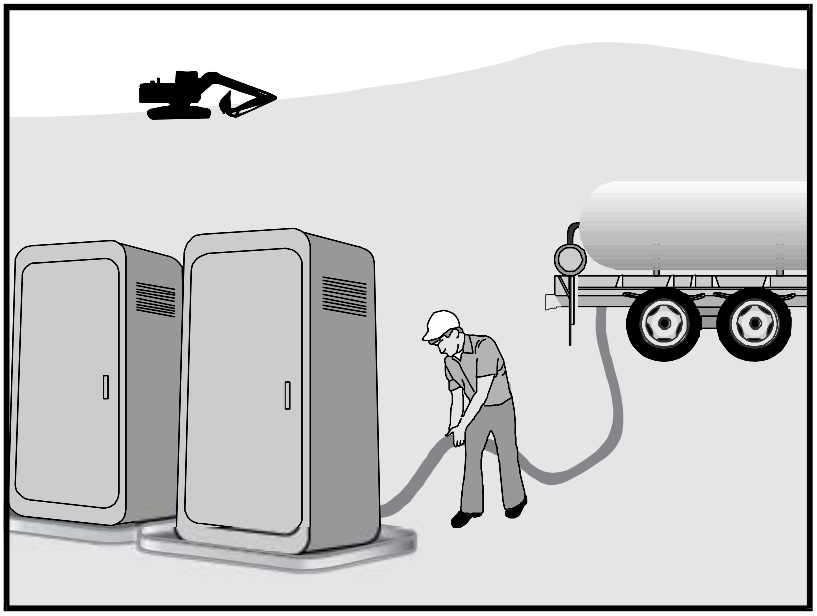


SECTION B–B
NOT TO SCALE

NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Sanitary/Septic Waste Management WM-9



Categories		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
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WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	
Nutrients	☑
Trash	☑
Metals	
Bacteria	☑
Oil and Grease	
Organics	☑

Potential Alternatives

None

Description and Purpose

Proper sanitary and septic waste management prevent the discharge of pollutants to stormwater from sanitary and septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Suitable Applications

Sanitary septic waste management practices are suitable for use at all construction sites that use temporary or portable sanitary and septic waste systems.

Limitations

None identified.

Implementation

Sanitary or septic wastes should be treated or disposed of in accordance with state and local requirements. In many cases, one contract with a local facility supplier will be all that it takes to make sure sanitary wastes are properly disposed.

Storage and Disposal Procedures

- Temporary sanitary facilities should be located away from drainage facilities, watercourses, and from traffic circulation. If site conditions allow, place portable facilities a minimum of 50 feet from drainage conveyances and traffic areas. When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning.

- Temporary sanitary facilities must be equipped with containment to prevent discharge of pollutants to the stormwater drainage system of the receiving water.
- Consider safety as well as environmental implications before placing temporary sanitary facilities.
- Wastewater should not be discharged or buried within the project site.
- Sanitary and septic systems that discharge directly into sanitary sewer systems, where permissible, should comply with the local health agency, city, county, and sewer district requirements.
- Only reputable, licensed sanitary and septic waste haulers should be used.
- Sanitary facilities should be located in a convenient location.
- Temporary septic systems should treat wastes to appropriate levels before discharging.
- If using an onsite disposal system (OSDS), such as a septic system, local health agency requirements must be followed.
- Temporary sanitary facilities that discharge to the sanitary sewer system should be properly connected to avoid illicit discharges.
- Sanitary and septic facilities should be maintained in good working order by a licensed service.
- Regular waste collection by a licensed hauler should be arranged before facilities overflow.
- If a spill does occur from a temporary sanitary facility, follow federal, state and local regulations for containment and clean-up.

Education

- Educate employees, subcontractors, and suppliers on sanitary and septic waste storage and disposal procedures.
- Educate employees, subcontractors, and suppliers of potential dangers to humans and the environment from sanitary and septic wastes.
- Instruct employees, subcontractors, and suppliers in identification of sanitary and septic waste.
- Hold regular meetings to discuss and reinforce the use of sanitary facilities (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Arrange for regular waste collection.
- If high winds are expected, portable sanitary facilities must be secured with spikes or weighed down to prevent over turning.
- If spills or leaks from sanitary or septic facilities occur that are not contained and discharge from the site, non-visible sampling of site discharge may be required. Refer to the General Permit or to your project specific Construction Site Monitoring Plan to determine if and where sampling is required.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
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(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

10 November 2011

In reply refer to: FERC110308A

Sara Bholat
Senior Archaeologist
Biological and Archaeological Group
Corporate Environmental, Health & Safety
Southern California Edison
2244 Walnut Grove Ave
Rosemead, CA 93605

RE: Comments regarding the Southern California Edison 500/115kV Alberhill Substation Project, Riverside County, CA

Dear Ms. Bholat:

Thank you for your 25 August 2011 letter requesting that I comment on the conclusions and recommendations for the proposed Alberhill Substation Project.

As I understand it, SCE plans to construct a new substation on approximately 140 acres at Alberhill in Riverside County. The California Public Utilities Commission has declined to comment on the project pursuant to the California Environmental Quality Act (CEQA) and you have asked that we comment on your findings.

Two potential historical resources were identified in the project area: P-33-17571 (CWA18-1/water reservoir) and P-33-17572 (CWA18-2/house). Site P-33-17571 is a tile and concrete reservoir constructed in the mid-20th century and is associated with agricultural activities in the area. Site P-33-17572 is a small vernacular residence built in 1950. Neither site appeared to be significant under California Register of Historical Resources criteria and thus was not recommended as a historical resource. After reviewing your findings, I do not object to your conclusions.

Thank you for considering historic properties as part of your project planning and I look forward to consultation on future projects. Please direct any questions or concerns that you may have to Amanda Blosser, Project Review Unit architectural historian, at 916-445-7048 or email at ablosser@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

MWD: ab

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-013

To: ENERGY DIVISION
Prepared by: Milissa Marona
Title: Regulatory Representative
Dated: 07/20/2011

Question 12.7.1:

a) Provide documentation that indicates it is SCE's standard practice to remove structures from property newly acquired by SCE.

b) Provide the results of nesting clearance surveys conducted prior to demolition.

c) Indicate the dates and times of demolition and each structure that was demolished. Provide a figure of appropriate scale that indicates where structures were demolished and the boundary within which land was disturbed during demolition activities.

d) Provide a list of each permit obtained for demolition of the horse ranch.

e) List the number of wells and septic tank pits abated and list all associated permits obtained. Confirm that abatement was carried out in accordance with either Section 722.0 of the Uniform Plumbing Code or by methods approved by the County Building Official.

f) Indicate how much solid waste was removed during demolition. Indicate how much solid waste was recycled. List the types of materials that were disposed of and the types of waste that were recycled.

g) List the amount and types of hazardous wastes that were removed and how it was disposed of.

h) Indicate if contaminated soil or groundwater were encountered during demolition and the actions that were taken if encountered

i) Emissions estimates were revised to include horse ranch demolition in response to Data Gap Requests #1.8 and #9.1. Update these estimates based on the actual work performed.

Response to Question 12.7.1:

a. Please find attached the Violations received from the County of Riverside noting why SCE needed to keep their property in good condition for public safety. Please see attachments "CV 1103195.NoticeOfDefects.pdf" and CV1103195.NoticeOfViolation.pdf".

b. Please see attached file "Alberhill_Pre-Activity_Abatement-and-Demo_9-21-11.docx" for the nesting bird surveys done prior to demolition. Also please see "Alberhill_Post_Abatement-Demo_Report_9-20-11_Part1.pdf" and "Alberhill_Post_Abatement-Demo_Report_9-20-11_Part2.pdf" for the reports done post construction.

c. Please see attached file "Contractor Dailies for Demo and Weed Abatement.pdf" for weed abatement detail between 9-8-2011 and 9-16-2011. Please see attached "Site Rep dailies for demo and weed abatement.pdf" for demolition at the proposed Alberhill site between 9-8-2011 and 9-20-2011. Please see attached Figure "Demo-Weed Scope Map 7.26.11.pdf" for the structures demolished and the boundary of demolition and weed abatement.

d. Please see the attached file, " Alberhill - copy of permit cards and receipts.pdf" as well as the list below for a list of each permit SCE obtained for demolition of the horse ranch.

Description:	Permit#:	Date:
Demo SFR 44' x 60' Structure	BDE110047	9/12/11
Demo Garage & Addition to Garage Structure	BDE110048	9/12/11
Demo Barn	BDE110049	9/12/11
Demo Mobile Home	BDE110050	9/12/11
Demo Single Family Unit	BDE110068	12/12/11

e. SCE did not remove any wells or septic tanks. They were left in place to avoid ground disturbance.

f. SCE removed 176 tons of wood, drywall, misc. debris from houses during demolition. The 45 tons of concrete and rock from the rock house was recycled. Please see the attached files, "Dump Tickets 9-15, 9-16, 12-15.pdf" and "Recycle tickers - Concrete Loads.pdf" for disposal records.

g. Karcher Environmental conducted lead and asbestos abatement prior to demolition activities. Please see the attached report labeled "Proposed Alberhill Substation Closeout.PDF", for further details.

h. No contaminated soil or groundwater were encountered during demolition.

i. Emissions estimates for horse ranch demolition were originally provided within "Alberhill Data Request 9.1." These estimates have been revised based upon the "Daily Project Journals" dated 9-8-2011 through 9-16-2011 as provided by the contractor. Please see the attached spreadsheets for the ranch demolition activities. All emissions remain less than the SCAQMD thresholds of significance. Greenhouse gas (GHG) emissions during demolition is less than originally presented, due to a quicker demolition time than anticipated. Total GHG emissions during demolition and water line relocation is estimated to be 252 MT of CO2e. GHG emissions during the other construction activities are estimated at 3,600 MT, so the new total during construction is estimated at 3,852 MT. The total amortized over 30 years would be approximately 128 MT/yr. Operational GHG emissions would be

approximately 3,430 MT/yr, for a total for construction and operation of approximately 3,558 MT/yr. This is still well below the SCAQMD threshold of 10,000 MT/yr.

1 attachment

Alberhill-Energy Division-SCE-013 Q.12.7.1 Attachment.zip

Wood Disposal Service Request (Contractor is Transporter)

Note: Request will be e-mailed to Corp. EH&S Representative / Contractor.
SOUTHERN CALIFORNIA EDISON

Requestor Name:	Requestor Phone:	Requestor E-mail (userid@sce.com):
David Morris	626-893-0662	morrisdd@sce.com

Site Contact:	Contact Phone:
Terry Earl	626-862-7668

Location Pick up Name:	Location Address:
Alberhill Substation	14116 Temescal Canyon Road Corona, Ca. 92883

Description:	Qty.:	Container No.
Order 30cy Roll-Off (6ft height)		
Pick-Up 30cy Roll-Off (6ft height)	1	744
Order 40cy Roll-Off (8ft height)		
Pick-Up 40cy Roll-Off (8ft height)		
Other (see comments)		

Comments / Description of Material:	Yes	No
Utility Service Wood Poles (Cut to Fit) and/or Cross arms, with or without hardware	⊙	○
Treated Wood - railroad ties, decking	○	⊙

Note: Always enter Container No.

Indicate if material is from

Transmission Percentage of Shipment

Distribution Percentage of Shipment 100 %

Pick up 1 each 30 Cyd roll off with poles on 9/16. Driver is standing by while crew loads poles and then will take bin with him.

Submitted On: 2011-09-16-09:04:14

Submit Form Reset

Wood Disposal Service Request (Contractor is Transporter)

Note: Request will be e-mailed to Corp. EH&S Representative / Contractor.
SOUTHERN CALIFORNIA EDISON

Requestor Name:	Requestor Phone:	Requestor E-mail (userid@sce.com):
David Morris	626-893-0662	morrisdd@sce.com

Site Contact:	Contact Phone:
Terry Earl	626-862-7668

Location Pick up Name:	Location Address:
Alberhill Substation	14116 Temescal Canyon Road. Corona, Ca. 92883

Description:	Qty.:	Container No.
Order 30cy Roll-Off (6ft height)	1	
Pick-Up 30cy Roll-Off (6ft height)		
Order 40cy Roll-Off (8ft height)		
Pick-Up 40cy Roll-Off (8ft height)		
Other (see comments)		

Comments / Description of Material:	Yes	No
Utility Service Wood Poles (Cut to Fit) and/or Cross arms, with or without hardware	◉	○
Treated Wood - railroad ties, decking	○	◉

Note: Always enter Container No.

Indicate if material is from

Transmission Percentage of Shipment	
Distribution Percentage of Shipment	100 %

Provide 1 each 30 CYD roll Off for cut poles. Please deliver on 9/16 between 7:00 AM- 1:30 PM

Submitted On: 2011-09-15-12:15:06

Submit Form | Reset

Wood Disposal Service Request (Contractor is Transporter)

Note: Request will be e-mailed to Corp. EH&S Representative / Contractor.
SOUTHERN CALIFORNIA EDISON

Requestor Name:	Requestor Phone:	Requestor E-mail (userid@sce.com):
David Morris	626-893-0662	morrisdd@sce.com

Site Contact:	Contact Phone:
Terry Earl	626-862-7668

Location Pick up Name:	Location Address:
Alberhill Substation	14116 Temescal Canyon Road. Corona, Ca. 92883

Description:	Qty.:	Container No.
Order 30cy Roll-Off (6ft height)	1	
Pick-Up 30cy Roll-Off (6ft height)		
Order 40cy Roll-Off (8ft height)		
Pick-Up 40cy Roll-Off (8ft height)		
Other (see comments)		

Comments / Description of Material:	Yes	No
Utility Service Wood Poles (Cut to Fit) and/or Cross arms, with or without hardware	◉	○
Treated Wood - railroad ties, decking	○	◉

Note: Always enter Container No.

Indicate if material is from

Transmission Percentage of Shipment

Distribution Percentage of Shipment 100 %

Provide 1 each 30 CYD roll Off for cut poles. Please deliver on 9/16 between 7:00 AM- 1:30 PM

Submitted On: 2011-09-15-12:15:06

Submit Form Reset

Wood Disposal Service Request (Contractor is Transporter)

Note: Request will be e-mailed to Corp. EH&S Representative / Contractor.
SOUTHERN CALIFORNIA EDISON

Requestor Name:	Requestor Phone:	Requestor E-mail (userid@sce.com):
David Morris	626-893-0662	morrisdd@sce.com

Site Contact:	Contact Phone:
Terry Earl	626-862-7668

Location Pick up Name:	Location Address:
Alberhill Substation	14116 Temescal Canyon Road Corona, Ca. 92883

Description:	Qty.:	Container No.
Order 30cy Roll-Off (6ft height)		
Pick-Up 30cy Roll-Off (6ft height)	1	744
Order 40cy Roll-Off (8ft height)		
Pick-Up 40cy Roll-Off (8ft height)		
Other (see comments)		

Comments / Description of Material:	Yes	No
Utility Service Wood Poles (Cut to Fit) and/or Cross arms, with or without hardware	◉	○
Treated Wood - railroad ties, decking	○	◉

Note: Always enter Container No.

Indicate if material is from

Transmission Percentage of Shipment	
Distribution Percentage of Shipment	100 %

Pick up 1 each 30 Cyd roll off with poles on 9/16. Driver is standing by while crew loads poles and then will take bin with him.

Submitted On: 2011-09-16-09:04:14

Submit Form Reset

RUBICON
Engineering Corporation

November 6, 2008 Project No. 1009.24

Ms. Phuong Tran
Environmental Engineer
SOUTHERN CALIFORNIA EDISON COMPANY
Environmental Engineering
2131 Walnut Grove Avenue
Rosemead, CA 91770

Phase II Environmental Site Assessment Report
Proposed Alberhill Substation Property
Lake Elsinore, California

Dear Ms. Tran:

This report documents the Phase II Environmental Site Assessment (ESA) performed for the Southern California Edison Company's (SCEs) proposed Alberhill Substation property in Lake Elsinore, California. The property is located along the north side of Temescal Canyon Road and Concordia Ranch Road in Lake Elsinore, California (the site). The site location is shown in Figure 1 and a plan of the site is presented in Figure 2. Rubicon Engineering Corporation (Rubicon) was retained by SCE to conduct the Phase II ESA.

BACKGROUND INFORMATION

The site consists of 10 parcels including a residence, a horse ranch, and undeveloped parcels of land. On behalf of SCE, Rubicon had conducted a Phase I ESA for the site on September 30, 2009. The Phase I ESA revealed four septic systems, one water well, and a water storage tank at the site. Based on these findings, SCE requested Rubicon to perform soil sampling at four septic system locations and collect a ground water sample from the well. The principal objective of the Phase II ESA is to conduct a preliminary assessment of the potential impact of the septic tank operations on the soil and ground water quality of the site. Specifically SCE's requested scope of work included soil sampling in the vicinity of the septic tanks leach lines and leach pits and collecting a water sample from the on-site water well.

This report documents the field and laboratory activities associated with the Phase II ESA and presents the findings of the assessment. The supporting information is contained in tables, figures and appendices, all of which follow the text of this report.

FIELD ACTIVITIES

Prior to soil and ground water sampling, on October 13, 2009, Rubicon field personnel conducted a site visit to obtain information about the location of leach lines and the water well and to locate the soil sampling points. The Phase II ESA field sampling was performed on October 14 and November 4, 2009. The activities included ground water sampling, drilling using a hand auger, soil sampling, and chemical analyses. These and associated activities are described below.

Ground Water Level Measurement and Sampling

The ground water level was measured in the water well, using an electric well sounder. The depth to ground water, relative to the top of well casing, was 7.50 feet. The depth to the bottom of the well, relative to the top of well casing, was 59.0 feet.

On October 14, 2009, a water sample was collected at the water storage tank effluent (GW-1-tank). The water tank received ground water from the well. The location of the water well and the tank is presented in Figure 2. The water sample was collected in three 40 ml VOA vials, a 125 ml HDPE bottle, a 1 L amber glass jar, and a 120 ml sterile coliform jar. The sample containers were then placed in a cooler with ice and delivered to the Calscience Environmental Laboratory (Calscience) in Garden Grove, California under standard chain of custody procedures.

On November 4, 2009, a ground water sample was collected at the well (GW-1-well). To remove standing water in the well casing and promote the inflow of representative ground water from the surrounding formation, the water in the well was pumped into the water tank using the existing well pump. The water was pumped until three borehole volumes were removed from the well. As a result of removing the three borehole volumes, the drawdown in the well was approximately 10 feet from static level. On completion of pumping and checking to make sure that a minimum of 80% recovery of the water level was achieved, a ground water sample was collected via a peristaltic pump and tubing. The water sample was collected in containers and delivered to Calscience as described above.

Drilling and Soil Sampling

On October 14, 2009, eleven borings were drilled using a hand auger to collect soil samples near the four septic systems. The four septic systems are composed of two leach fields and two leach pits. Sampling locations were selected based on information obtained from the owners, permit documents, and observations in the field. Boring locations were measured using a measuring wheel utilizing nearby buildings for reference. Boring locations, shown in Figures 3 to 6, were measured to the nearest 1.0 feet relative to the reference points.

The soil borings (HA-1 to HA-11) were advanced to a depth of 3.5 to 5.5 feet below ground surface (bgs) and soil samples were collected at the bottom of each boring. Soil borings (HA-1 to HA-3) were advanced to 3.5 feet bgs along the leach line by the abandoned mobile home. Soil borings (HA-4 and HA-5) were advanced to 5 feet bgs along the leach line by the house owned

by Mr. Thomas Boyle. Soil borings (HA-6 to HA-9) were advanced to 5.5 feet bgs near the leach pit by a hay storage area in the horse ranch. Soil borings (HA-10 and HA-11) were advanced to 4 and 5 feet bgs near the leach pit by the house in the horse ranch. The locations of the borings are shown in Figures 3 to 6.

Soil samples were collected directly from the core barrel of the hand auger. This was accomplished by 'pushing' a 6-inch long by 2-inch diameter stainless steel sampling sleeve into the soil retained in the auger barrel immediately after the auger was removed from the boring. To preserve the integrity of the soil samples, the ends of the soil-filled sample sleeves were trimmed flush and sealed with plastic end caps lined with Teflon foil. The soil samples for VOC analysis were collected as a grab sample, using an Encore Sampler. The samples were labeled and placed in an ice cooler to maintain the samples in a chilled state. Soil samples were also delivered to Calscience.

SAMPLE ANALYSES

The ground water samples were analyzed for Volatile Organic Compounds (VOCs) using EPA Method 8260B, Nitrate by EPA Method 300.0, Oil & Grease by EPA Method 1664A, and Coliforms and Fecal Coliforms by Standard Methods for the Examination of Water and Wastewater (SMEWW) 20th, 9221A-E.

The soil samples were analyzed for VOCs by EPA Method 8260B, Nitrate by EPA Method 300.0, Oil & Grease by EPA Method 1664A, and Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1. Additionally, soil samples HA-6 to HA-11 were analyzed for Aerobic Plate Count (APC) by AOAC Method 966.23. The results of the analyses are discussed in the next section. The certificates of analyses and chain-of-custody records, as received from Calscience are provided in Appendix A (HA-1 to HA-11 & GW-1-tank) and Appendix B (GW-1-well).

FINDINGS

Lithologic and Hydrologic Conditions

The soils encountered during the investigation were comprised of alluvial deposits, light brown to brown, fine to medium-grained silty sand. One to three inches grained gravels were encountered in soil borings HA-1 and HA-3. Ground water was not encountered in any of the borings drilled. Although ground water level in the well was measured at 7.5 feet bgs, the depth to ground water may vary at the site depending on the location. As the perforated interval of the water well is not provided, it is not known if the underlying aquifer is confined or unconfined.

Ground Water Quality

As shown in Table 1, the water sample GW-1-tank showed nitrate and Oil & Grease at concentrations of 1.1 mg/L and 19.6 mg/L, respectively. VOCs, Coliforms, and Fecal Coliforms were not detected. The ground water sample GW-1-well showed a nitrate concentration of 1.2 mg/L. VOCs and Oil & Grease were not detected in sample GW-1-well.

TABLE 1. SUMMARY OF GROUND WATER SAMPLE ANALYSES

Sample ID	VOCs (ug/L)	Nitrate(N) (mg/L)	Oil & Grease (mg/L)	Total Coliform (/100mL)	Fecal Coliform (/100mL)
GW-1-tank	ND	1.1	19.6	<20	<20
GW-1-well	ND	1.2	ND	<20	<20

The nitrate (N) concentrations of 1.1 mg/L and 1.2 mg/L are below the maximum contaminant level of 10 mg/L (US EPA, April 2009). The US EPA has not established a maximum legal limit in tap water for Oil & Grease. However, according to the California Regional Water Quality Control Board, Santa Ana Region (SARWQCB), the effluent limitation applicable to receiving water is 15 mg/L for Oil & Grease. Therefore, the water in the tank does not comply with the SARWQCB receiving water requirements. Nevertheless, since Oil & Grease concentration appears in the water sample from the tank (GW-1-tank) but not in the water sample from the well (GW-1-well), the source(s) that might have impacted the water in the tank does not seem to impact the water in the well.

Soil Quality

Nitrate was detected in all soil samples collected except samples HA-4 and HA-5. The concentration on Nitrate in soil samples ranged from 1.1 mg/kg in sample HA-2 to 35 mg/kg in sample HA-11. Oil & Grease were detected in all the samples collected except soil sample HA-6. The concentrations of Oil & Grease in soil samples ranged from 13 mg/kg in sample HA-8 to 83 mg/kg in sample HA-1.

Acetone in samples HA-4 and HA-5 was detected at concentrations of 74 ug/kg and 89 ug/kg, respectively. Benzene was detected in samples HA-3 and HA-11 at concentrations of 1.3 ug/kg and 1.5 ug/kg, respectively. TRPH was detected in all the soil samples collected. The TRPH concentrations ranged from 12 mg/kg in sample HA-3 to 38 mg/kg in HA-11.

Soil samples HA-6 to HA-11 were analyzed for Aerobic Plate Count. The microbial count (#) ranged from 120,000/g in HA-7 to 4,000,000/g in HA-10.

TABLE 2. SUMMARY OF SOIL SAMPLE ANALYSES

Sample ID	Acetone (ug/kg)	Benzene (ug/kg)	Nitrate (mg/kg)	Oil & Grease (mg/kg)	TRPH (mg/kg)	Aerobic Plate Count (#/g)
HA-1	ND	ND	1.5	83	23	N/A
HA-2	ND	ND	1.1	29	17	N/A
HA-3	ND	1.3	1.5	21	12	N/A
HA-4	74	ND	ND	19	15	N/A
HA-5	89	ND	ND	25	36	N/A
HA-6	ND	ND	4.3	ND	36	1,400,000
HA-7	ND	ND	5.6	18	22	120,000
HA-8	ND	ND	4.4	13	35	800,000
HA-9	ND	ND	15	17	27	650,000
HA-10	ND	ND	1.5	19	25	4,000,000
HA-11	ND	1.5	35	15	38	600,000

According to the US EPA Preliminary Remediation Goals Screening Levels for Chemical Contaminants US EPA, April 2009, acetone and nitrate are below soil screening levels (SSLs). Benzene concentrations are below the MCL-based SSL, but above the Risk-based SSL. However, according to the July 1996 US EPA Soil Screening Guidance document, benzene concentrations are below the screening level in soil. With respect to Oil and Grease, TRPH, and Aerobic Plate Count, currently, there are no set regulatory levels in soil. Based on these regulatory documents, Rubicon does not believe that the sampled soil has been adversely affected. However, due to the low concentration of VOCs (e.g., benzene), if soil at these sampling locations is to be removed from the site, it will have to be disposed of at a non-hazardous waste recycling facility.

Rubicon appreciates the opportunity of providing environmental services to SCE. If you have any questions, please do not hesitate to call.

Respectfully submitted,

RUBICON ENGINEERING CORPORATION

Mohsen Mehran, Ph.D.	Peter Lee	Dane Robinson, PG
Project Manager	Staff Engineer	Project Geologist

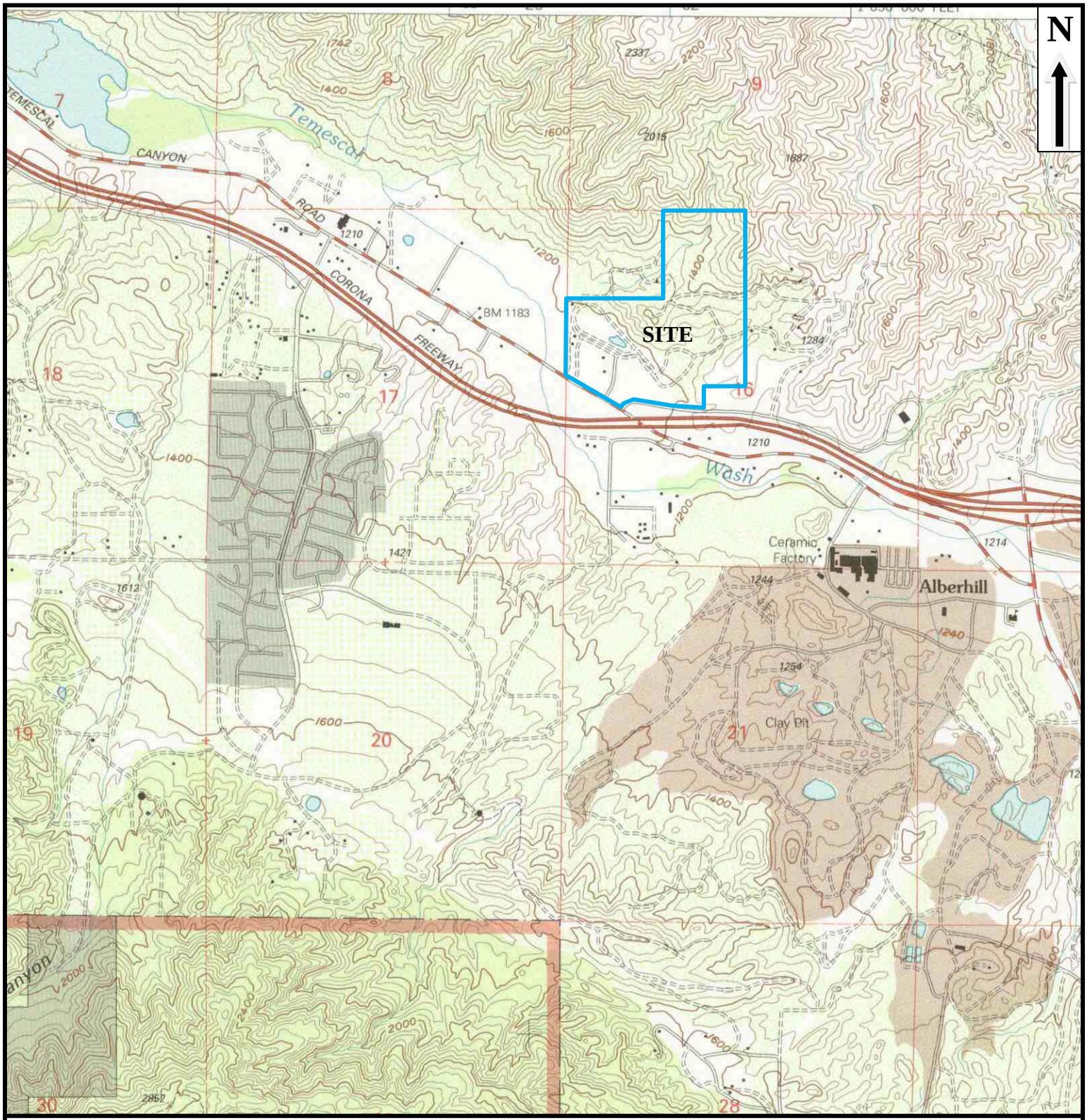
REFERENCES

State of California California Regional Water Quality Control Board Santa Ana Region, Order No. R8-2009-0003, NPDES No. CAG998001, General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality. March 27, 2009.

USEPA. Soil Screening Guidance: User's Guide, 2nd Edition, EPA/540/R-96/018, Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Washington, DC 20460. July 1996.

USEPA. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. April 2009.

Figures



Reference: EDR Topographic Map
Target Quad
Name: Alberhill
Map Year: 1997
Series: 7.5
Scale 1:24000
Lat/Long: 33.7361 / 117.415

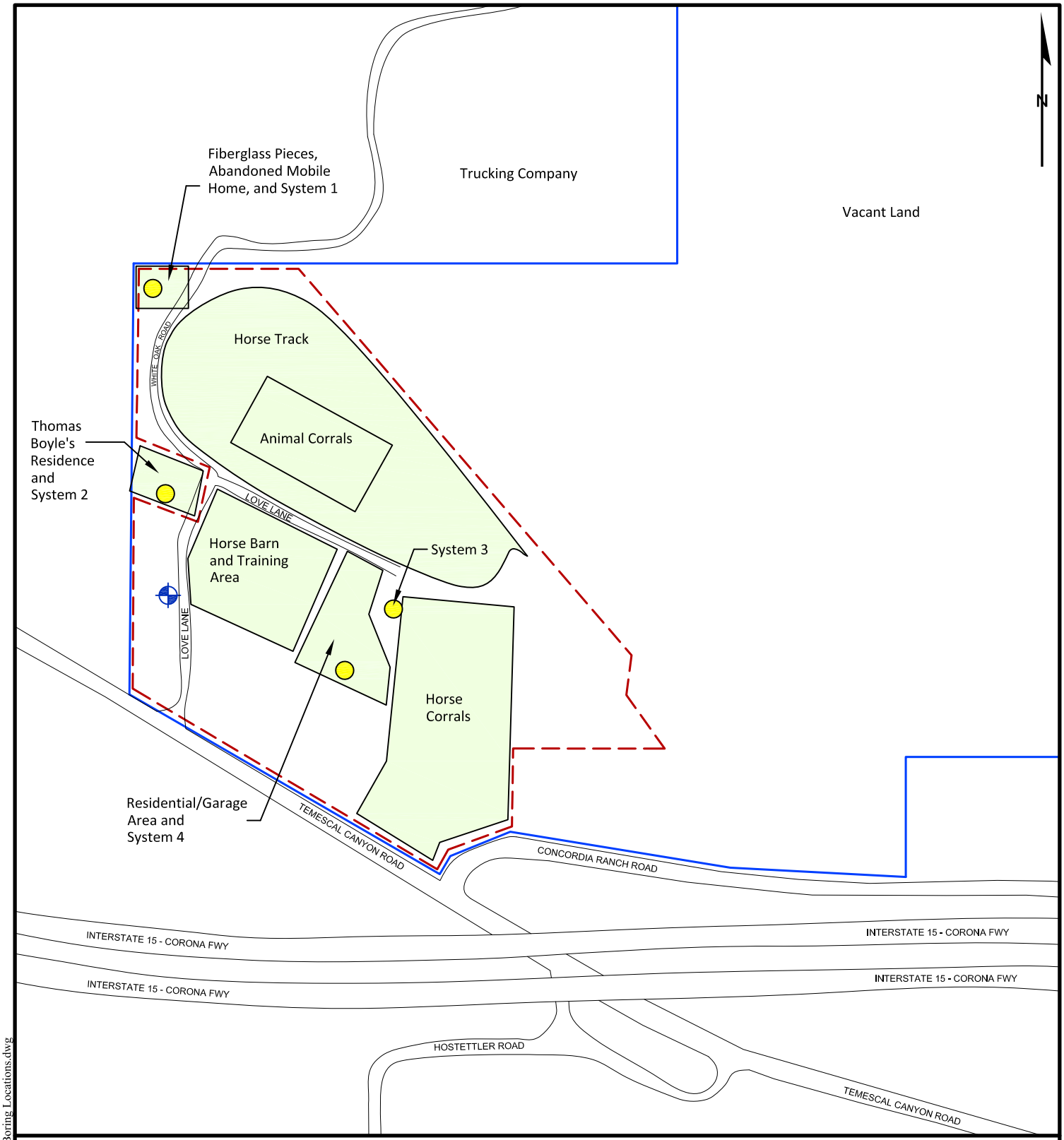
SITE BOUNDARY

FIGURE 1

SITE LOCATION MAP

Proposed Alberhill Substation
Lake Elsinore, California

RUBICON
Engineering Corporation



SITE BOUNDARY

HORSE RANCH BOUNDARY

APPROXIMATE SEPTIC SYSTEM LOCATION

WATER WELL AND ABOVEGROUND WATER TANK

0 360 720

APPROXIMATE SCALE (FEET)

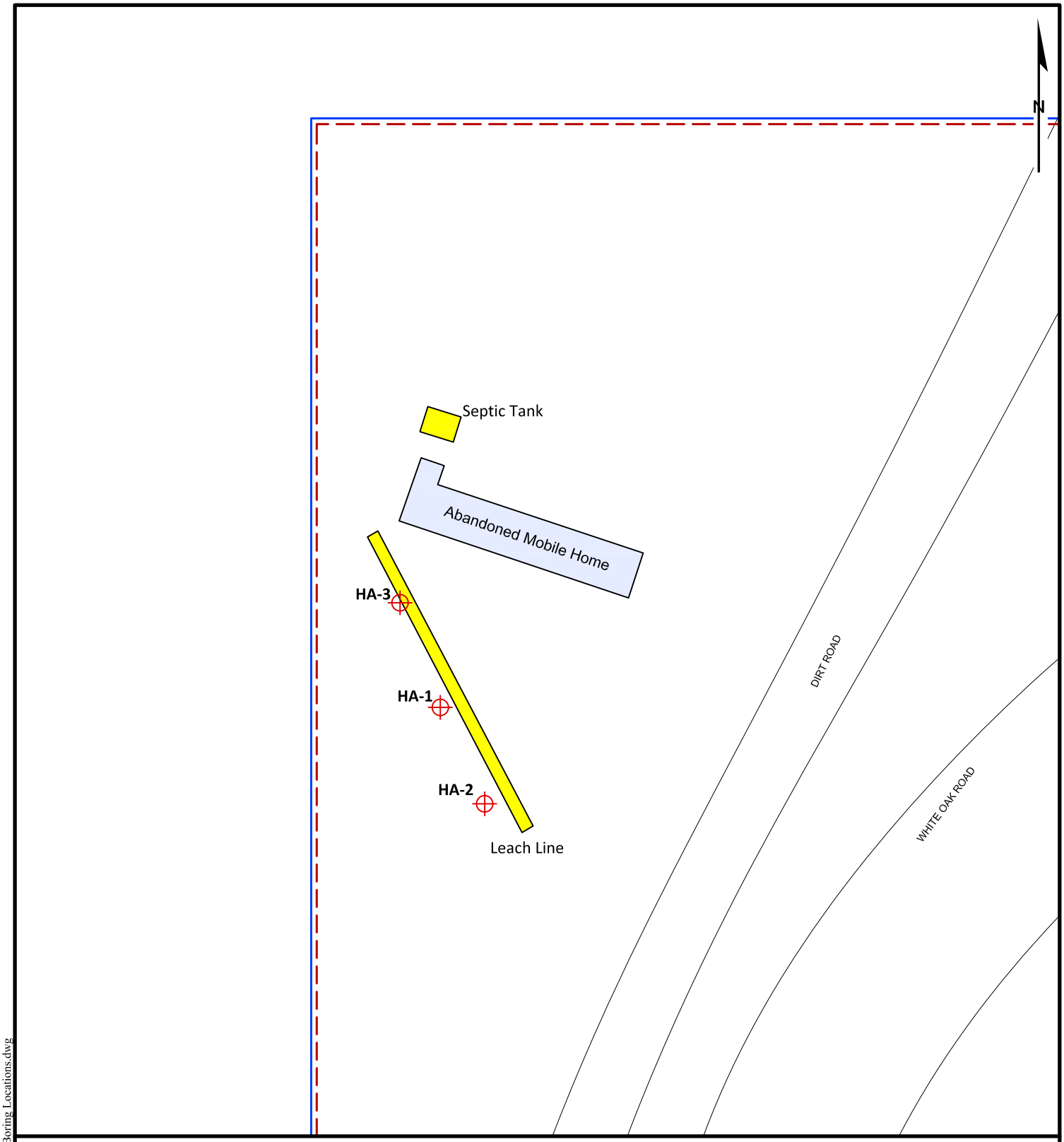
FIGURE 2

APPROXIMATE SEPTIC SYSTEM LOCATIONS

PROPOSED ALBERHILL SUBSTATION
LAKE ELSINORE, CALIFORNIA

RUBICON
Engineering Corporation

P:\1009 SCE\1009.24 Alberhill Substation\Figures\Boring Locations.dwg



SITE BOUNDARY

HORSE RANCH BOUNDARY

APPROXIMATE BORING LOCATION

0 30 60

APPROXIMATE SCALE (FEET)

FIGURE 3

SYSTEM 1 - BORING LOCATIONS

PROPOSED ALBERHILL SUBSTATION
LAKE ELSINORE, CALIFORNIA

RUBICON
Engineering Corporation

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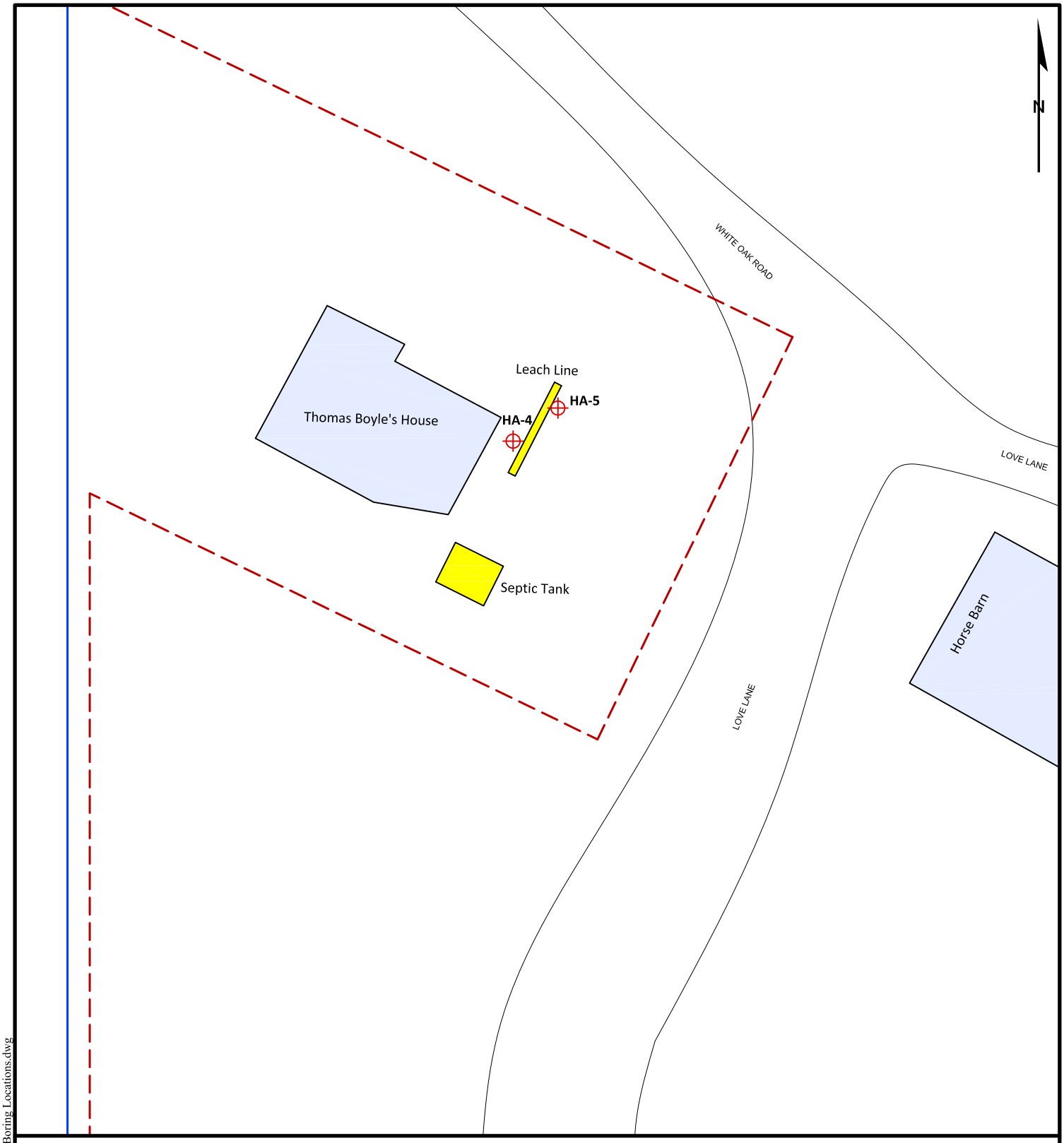

SITE BOUNDARY

HORSE RANCH BOUNDARY

APPROXIMATE BORING LOCATION

0 35 70

APPROXIMATE SCALE (FEET)

FIGURE 4
SYSTEM 2 - BORING LOCATIONS

PROPOSED ALBERHILL SUBSTATION
LAKE ELSINORE, CALIFORNIA

RUBICON
Engineering Corporation

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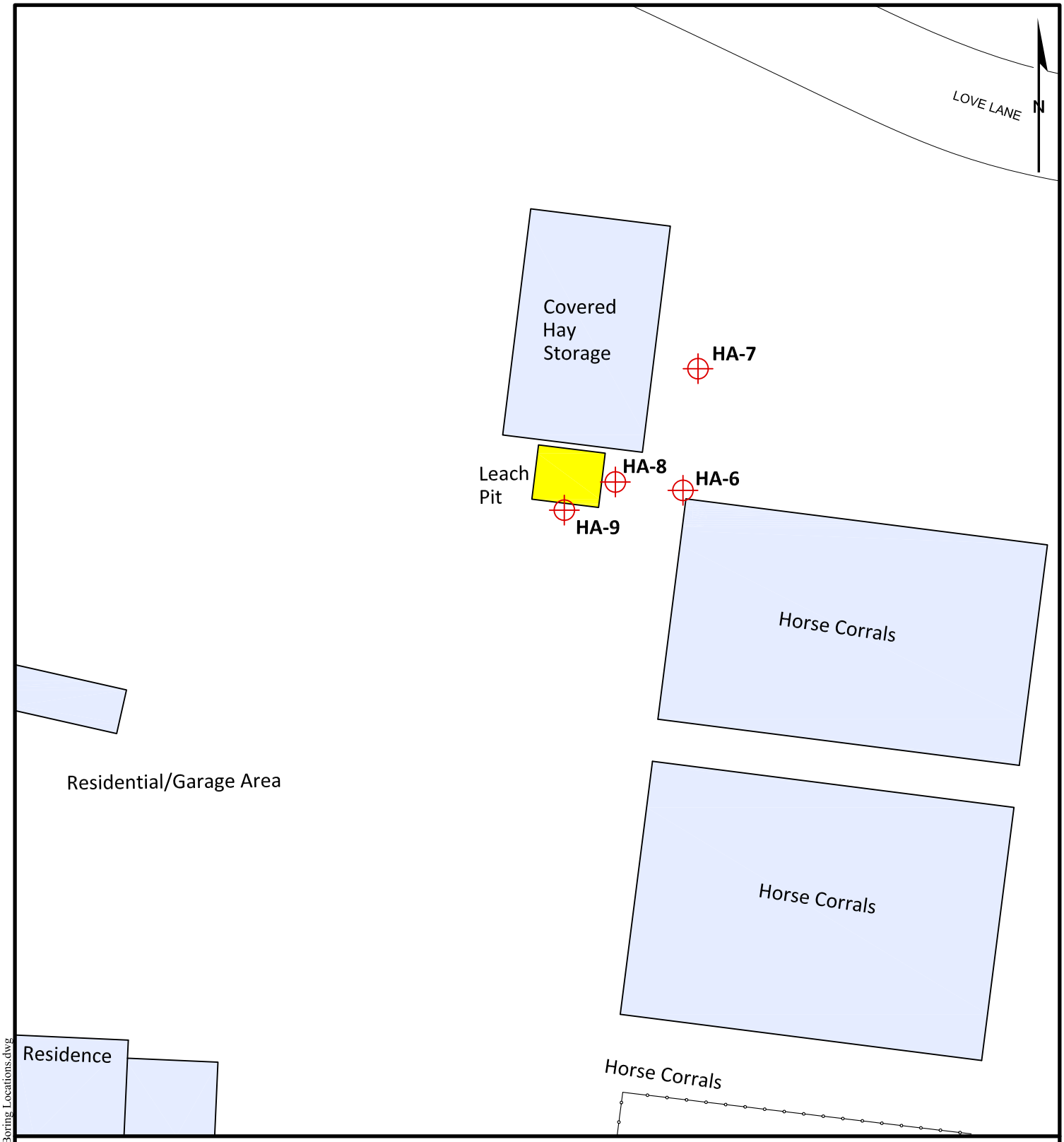

FIGURE 5
SYSTEM 3 - BORING LOCATIONS

PROPOSED ALBERHILL SUBSTATION
LAKE ELSINORE, CALIFORNIA

RUBICON
Engineering Corporation

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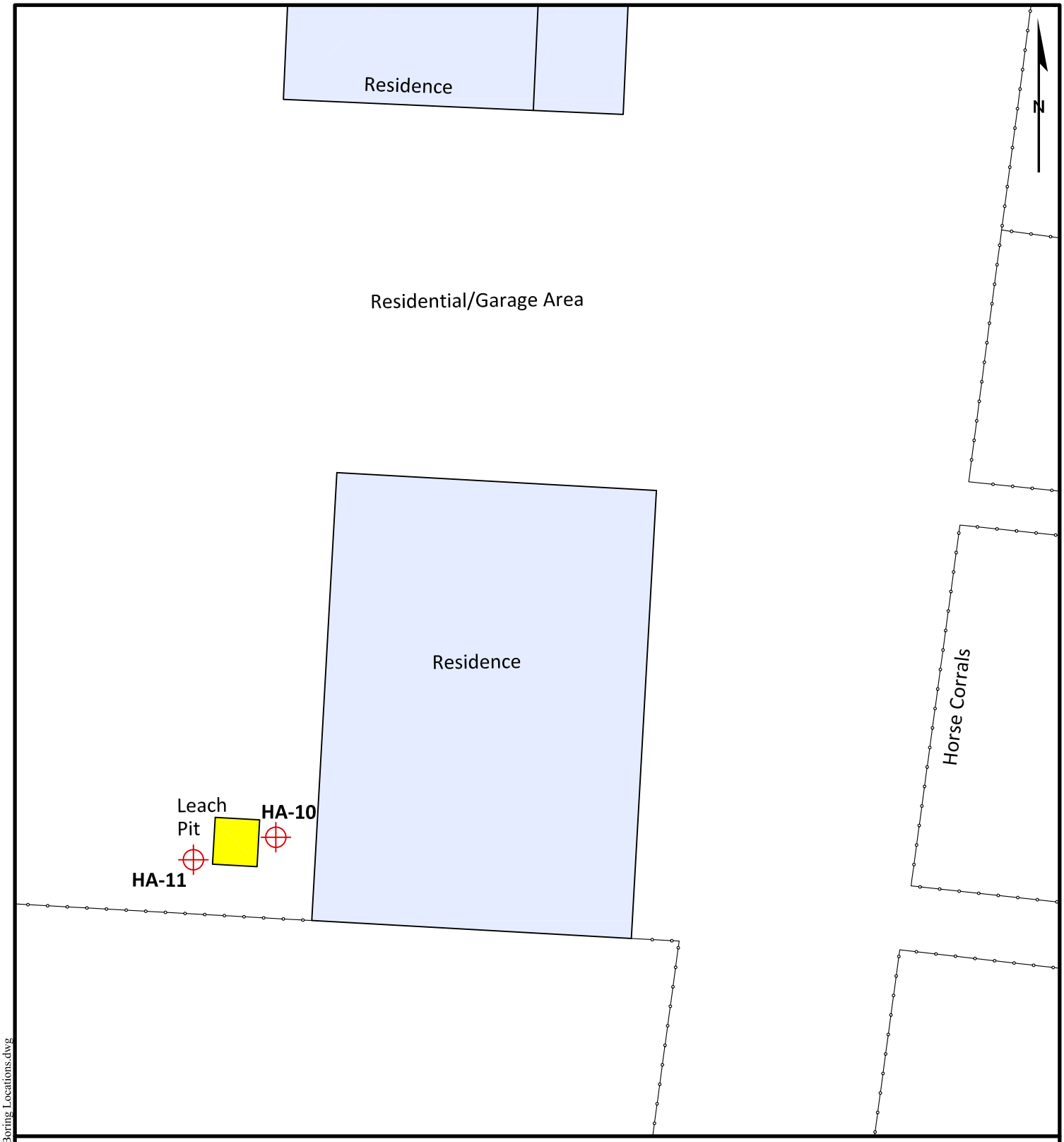

FENCING

APPROXIMATE BORING LOCATION

0 20 40

APPROXIMATE SCALE (FEET)

FIGURE 6

SYSTEM 4 - BORING LOCATIONS

PROPOSED ALBERHILL SUBSTATION
LAKE ELSINORE, CALIFORNIA

RUBICON
Engineering Corporation

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Appendix A

Calscience Certificates of Analyses
(HA-1 to HA-11 & GW-1-tank)

Calscience Environmental Laboratories, Inc.

Supplemental Report 1

October 21, 2009

Mohsen Mehran
Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Subject: **Calscience Work Order No.: 09-10-1223**
Client Reference: Alberhill Substation / 1009.24

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/14/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering		Date Received:	10/14/09
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	N/A
		Method:	EPA 300.0

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
GW-1	**09-10-1223-1-E**	**10/14/09 10:20**	**Aqueous**	**IC 7**	**N/A**	**10/15/09 10:50**	**091015L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	1.1	0.10	1		mg/L

Method Blank	**099-12-906-526**	**N/A**	**Aqueous**	**IC 7**	**N/A**	**10/15/09 09:23**	**091015L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	ND	0.10	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 300.0

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-1	**09-10-1223-2-A**	**10/14/09 10:20**	**Solid**	**IC 7**	**N/A**	**10/16/09 11:38**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	1.5	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-2	**09-10-1223-3-A**	**10/14/09 10:43**	**Solid**	**IC 7**	**N/A**	**10/16/09 11:55**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	1.1	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-3	**09-10-1223-4-A**	**10/14/09 13:20**	**Solid**	**IC 7**	**N/A**	**10/16/09 12:12**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	1.5	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-4	**09-10-1223-5-A**	**10/14/09 13:51**	**Solid**	**IC 7**	**N/A**	**10/16/09 12:30**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	ND	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-5	**09-10-1223-6-A**	**10/14/09 14:05**	**Solid**	**IC 7**	**N/A**	**10/16/09 12:47**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	ND	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-6	**09-10-1223-7-A**	**10/14/09 15:05**	**Solid**	**IC 7**	**N/A**	**10/16/09 13:05**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	4.3	1.0	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 300.0

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-7	**09-10-1223-8-A**	**10/14/09 15:00**	**Solid**	**IC 7**	**N/A**	**10/16/09 13:22**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	5.6	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-8	**09-10-1223-9-A**	**10/14/09 15:25**	**Solid**	**IC 7**	**N/A**	**10/16/09 13:40**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	4.4	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-9	**09-10-1223-10-A**	**10/14/09 15:45**	**Solid**	**IC 7**	**N/A**	**10/16/09 13:57**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	15	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-10	**09-10-1223-11-A**	**10/14/09 16:05**	**Solid**	**IC 7**	**N/A**	**10/16/09 14:14**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	1.5	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-11	**09-10-1223-12-A**	**10/14/09 16:15**	**Solid**	**IC 7**	**N/A**	**10/16/09 15:07**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	35	1.0	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-922-31**	**N/A**	**Solid**	**IC 7**	**N/A**	**10/16/09 09:18**	**091016L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	ND	1.0	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	N/A
	Method:	EPA 1664A

Project: Alberhill Substation / 1009.24 Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
GW-1	**09-10-1223-1-P**	**10/14/09 10:20**	**Aqueous**	**N/A**	**N/A**	**10/18/09 15:10**	**91018HEML2**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	19.6	1.0	1		mg/L

Method Blank	**099-05-119-2,066**	**N/A**	**Aqueous**	**N/A**	**N/A**	**10/18/09 15:10**	**91018HEML2**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	ND	1.0	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 1664A M

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-1	**09-10-1223-2-A**	**10/14/09 10:20**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	83	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-2	**09-10-1223-3-A**	**10/14/09 10:43**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	29	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-3	**09-10-1223-4-A**	**10/14/09 13:20**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	21	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-4	**09-10-1223-5-A**	**10/14/09 13:51**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	19	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-5	**09-10-1223-6-A**	**10/14/09 14:05**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	25	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-6	**09-10-1223-7-A**	**10/14/09 15:05**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	ND	10	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 1664A M

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-7	**09-10-1223-8-A**	**10/14/09 15:00**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	18	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-8	**09-10-1223-9-A**	**10/14/09 15:25**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	13	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-9	**09-10-1223-10-A**	**10/14/09 15:45**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	17	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-10	**09-10-1223-11-A**	**10/14/09 16:05**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	19	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-11	**09-10-1223-12-A**	**10/14/09 16:15**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	15	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-040-267**	**N/A**	**Solid**	**N/A**	**10/19/09**	**10/19/09 00:00**	**91019HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	ND	10	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 418.1M

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-1	**09-10-1223-2-A**	**10/14/09 10:20**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	23	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-2	**09-10-1223-3-A**	**10/14/09 10:43**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	17	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-3	**09-10-1223-4-A**	**10/14/09 13:20**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	12	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-4	**09-10-1223-5-A**	**10/14/09 13:51**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	15	10	1		mg/kg

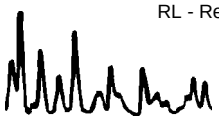
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-5	**09-10-1223-6-A**	**10/14/09 14:05**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	36	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-6	**09-10-1223-7-A**	**10/14/09 15:05**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	36	10	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 418.1M

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-7	**09-10-1223-8-A**	**10/14/09 15:00**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	22	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-8	**09-10-1223-9-A**	**10/14/09 15:25**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	35	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-9	**09-10-1223-10-A**	**10/14/09 15:45**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	27	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-10	**09-10-1223-11-A**	**10/14/09 16:05**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	25	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-11	**09-10-1223-12-A**	**10/14/09 16:15**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	38	10	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-07-015-1,598**	**N/A**	**Solid**	**IR #1**	**10/20/09**	**10/20/09 14:28**	**091020L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	ND	2.0	0.2		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
GW-1	**09-10-1223-1-A**	**10/14/09 10:20**	**Aqueous**	**GC/MS S**	**10/15/09**	**10/15/09 19:04**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		1,3-Dichloropropane	ND	1.0	1	
Benzene	ND	0.50	1		2,2-Dichloropropane	ND	1.0	1	
Bromobenzene	ND	1.0	1		1,1-Dichloropropene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		c-1,3-Dichloropropene	ND	0.50	1	
Bromodichloromethane	ND	1.0	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromoform	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromomethane	ND	10	1		2-Hexanone	ND	10	1	
2-Butanone	ND	10	1		Isopropylbenzene	ND	1.0	1	
n-Butylbenzene	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1		Methylene Chloride	ND	10	1	
tert-Butylbenzene	ND	1.0	1		4-Methyl-2-Pentanone	ND	10	1	
Carbon Disulfide	ND	10	1		Naphthalene	ND	10	1	
Carbon Tetrachloride	ND	0.50	1		n-Propylbenzene	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Styrene	ND	1.0	1	
Chloroethane	ND	5.0	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Chloroform	ND	1.0	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chloromethane	ND	10	1		Tetrachloroethene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		Toluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1		1,2,4-Trichlorobenzene	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		1,1,1-Trichloroethane	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1		Trichloroethene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
1,4-Dichlorobenzene	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
Dichlorodifluoromethane	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		Vinyl Acetate	ND	10	1	
1,1-Dichloroethene	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
c-1,2-Dichloroethene	ND	1.0	1		Xylenes (total)	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	119	80-132		1,2-Dichloroethane-d4	127	80-141	
Toluene-d8	99	80-120		1,4-Bromofluorobenzene	91	76-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering		Date Received:	10/14/09
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-10-006-30,991**	**N/A**	**Aqueous**	**GC/MS S**	**10/15/09**	**10/15/09 13:01**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		1,3-Dichloropropane	ND	1.0	1	
Benzene	ND	0.50	1		2,2-Dichloropropane	ND	1.0	1	
Bromobenzene	ND	1.0	1		1,1-Dichloropropene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		c-1,3-Dichloropropene	ND	0.50	1	
Bromodichloromethane	ND	1.0	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromoform	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromomethane	ND	10	1		2-Hexanone	ND	10	1	
2-Butanone	ND	10	1		Isopropylbenzene	ND	1.0	1	
n-Butylbenzene	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1		Methylene Chloride	ND	10	1	
tert-Butylbenzene	ND	1.0	1		4-Methyl-2-Pentanone	ND	10	1	
Carbon Disulfide	ND	10	1		Naphthalene	ND	10	1	
Carbon Tetrachloride	ND	0.50	1		n-Propylbenzene	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Styrene	ND	1.0	1	
Chloroethane	ND	5.0	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Chloroform	ND	1.0	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chloromethane	ND	10	1		Tetrachloroethene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		Toluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1		1,2,4-Trichlorobenzene	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		1,1,1-Trichloroethane	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1		Trichloroethene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
1,4-Dichlorobenzene	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
Dichlorodifluoromethane	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		Vinyl Acetate	ND	10	1	
1,1-Dichloroethene	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
c-1,2-Dichloroethene	ND	1.0	1		Xylenes (total)	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	117	80-132		1,2-Dichloroethane-d4	124	80-141	
Toluene-d8	97	80-120		1,4-Bromofluorobenzene	89	76-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering		Date Received:	10/14/09
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg

Project: Alberhill Substation / 1009.24 — Page 1 of 12

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-1	**09-10-1223-2-C**	**10/14/09 10:20**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 17:25**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	52	1.03		1,3-Dichloropropane	ND	1.0	1.03	
Benzene	ND	1.0	1.03		2,2-Dichloropropane	ND	5.2	1.03	
Bromobenzene	ND	1.0	1.03		1,1-Dichloropropene	ND	2.1	1.03	
Bromochloromethane	ND	2.1	1.03		c-1,3-Dichloropropene	ND	1.0	1.03	
Bromodichloromethane	ND	1.0	1.03		t-1,3-Dichloropropene	ND	2.1	1.03	
Bromoform	ND	5.2	1.03		Ethylbenzene	ND	1.0	1.03	
Bromomethane	ND	21	1.03		2-Hexanone	ND	21	1.03	
2-Butanone	ND	21	1.03		Isopropylbenzene	ND	1.0	1.03	
n-Butylbenzene	ND	1.0	1.03		p-Isopropyltoluene	ND	1.0	1.03	
sec-Butylbenzene	ND	1.0	1.03		Methylene Chloride	ND	10	1.03	
tert-Butylbenzene	ND	1.0	1.03		4-Methyl-2-Pentanone	ND	21	1.03	
Carbon Disulfide	ND	10	1.03		Naphthalene	ND	10	1.03	
Carbon Tetrachloride	ND	1.0	1.03		n-Propylbenzene	ND	2.1	1.03	
Chlorobenzene	ND	1.0	1.03		Styrene	ND	1.0	1.03	
Chloroethane	ND	2.1	1.03		1,1,1,2-Tetrachloroethane	ND	1.0	1.03	
Chloroform	ND	1.0	1.03		1,1,2,2-Tetrachloroethane	ND	2.1	1.03	
Chloromethane	ND	21	1.03		Tetrachloroethene	ND	1.0	1.03	
2-Chlorotoluene	ND	1.0	1.03		Toluene	ND	1.0	1.03	
4-Chlorotoluene	ND	1.0	1.03		1,2,3-Trichlorobenzene	ND	2.1	1.03	
Dibromochloromethane	ND	2.1	1.03		1,2,4-Trichlorobenzene	ND	2.1	1.03	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.03		1,1,1-Trichloroethane	ND	1.0	1.03	
1,2-Dibromoethane	ND	1.0	1.03		1,1,2-Trichloroethane	ND	1.0	1.03	
Dibromomethane	ND	1.0	1.03		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.03	
1,2-Dichlorobenzene	ND	1.0	1.03		Trichloroethene	ND	2.1	1.03	
1,3-Dichlorobenzene	ND	1.0	1.03		Trichlorofluoromethane	ND	10	1.03	
1,4-Dichlorobenzene	ND	1.0	1.03		1,2,3-Trichloropropane	ND	2.1	1.03	
Dichlorodifluoromethane	ND	2.1	1.03		1,2,4-Trimethylbenzene	ND	2.1	1.03	
1,1-Dichloroethane	ND	1.0	1.03		1,3,5-Trimethylbenzene	ND	2.1	1.03	
1,2-Dichloroethane	ND	1.0	1.03		Vinyl Acetate	ND	10	1.03	
1,1-Dichloroethene	ND	1.0	1.03		Vinyl Chloride	ND	1.0	1.03	
c-1,2-Dichloroethene	ND	1.0	1.03		Xylenes (total)	ND	2.1	1.03	
t-1,2-Dichloroethene	ND	1.0	1.03		Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.03	
1,2-Dichloropropane	ND	1.0	1.03						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	110	71-137		1,2-Dichloroethane-d4	124	58-160	
1,4-Bromofluorobenzene	84	66-126		Toluene-d8	101	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-2	**09-10-1223-3-C**	**10/14/09 10:43**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 17:56**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	45	0.906		1,3-Dichloropropane	ND	0.91	0.906	
Benzene	ND	0.91	0.906		2,2-Dichloropropane	ND	4.5	0.906	
Bromobenzene	ND	0.91	0.906		1,1-Dichloropropene	ND	1.8	0.906	
Bromochloromethane	ND	1.8	0.906		c-1,3-Dichloropropene	ND	0.91	0.906	
Bromodichloromethane	ND	0.91	0.906		t-1,3-Dichloropropene	ND	1.8	0.906	
Bromoform	ND	4.5	0.906		Ethylbenzene	ND	0.91	0.906	
Bromomethane	ND	18	0.906		2-Hexanone	ND	18	0.906	
2-Butanone	ND	18	0.906		Isopropylbenzene	ND	0.91	0.906	
n-Butylbenzene	ND	0.91	0.906		p-Isopropyltoluene	ND	0.91	0.906	
sec-Butylbenzene	ND	0.91	0.906		Methylene Chloride	ND	9.1	0.906	
tert-Butylbenzene	ND	0.91	0.906		4-Methyl-2-Pentanone	ND	18	0.906	
Carbon Disulfide	ND	9.1	0.906		Naphthalene	ND	9.1	0.906	
Carbon Tetrachloride	ND	0.91	0.906		n-Propylbenzene	ND	1.8	0.906	
Chlorobenzene	ND	0.91	0.906		Styrene	ND	0.91	0.906	
Chloroethane	ND	1.8	0.906		1,1,1,2-Tetrachloroethane	ND	0.91	0.906	
Chloroform	ND	0.91	0.906		1,1,2,2-Tetrachloroethane	ND	1.8	0.906	
Chloromethane	ND	18	0.906		Tetrachloroethene	ND	0.91	0.906	
2-Chlorotoluene	ND	0.91	0.906		Toluene	ND	0.91	0.906	
4-Chlorotoluene	ND	0.91	0.906		1,2,3-Trichlorobenzene	ND	1.8	0.906	
Dibromochloromethane	ND	1.8	0.906		1,2,4-Trichlorobenzene	ND	1.8	0.906	
1,2-Dibromo-3-Chloropropane	ND	4.5	0.906		1,1,1-Trichloroethane	ND	0.91	0.906	
1,2-Dibromoethane	ND	0.91	0.906		1,1,2-Trichloroethane	ND	0.91	0.906	
Dibromomethane	ND	0.91	0.906		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.1	0.906	
1,2-Dichlorobenzene	ND	0.91	0.906		Trichloroethene	ND	1.8	0.906	
1,3-Dichlorobenzene	ND	0.91	0.906		Trichlorofluoromethane	ND	9.1	0.906	
1,4-Dichlorobenzene	ND	0.91	0.906		1,2,3-Trichloropropane	ND	1.8	0.906	
Dichlorodifluoromethane	ND	1.8	0.906		1,2,4-Trimethylbenzene	ND	1.8	0.906	
1,1-Dichloroethane	ND	0.91	0.906		1,3,5-Trimethylbenzene	ND	1.8	0.906	
1,2-Dichloroethane	ND	0.91	0.906		Vinyl Acetate	ND	9.1	0.906	
1,1-Dichloroethene	ND	0.91	0.906		Vinyl Chloride	ND	0.91	0.906	
c-1,2-Dichloroethene	ND	0.91	0.906		Xylenes (total)	ND	1.8	0.906	
t-1,2-Dichloroethene	ND	0.91	0.906		Methyl-t-Butyl Ether (MTBE)	ND	1.8	0.906	
1,2-Dichloropropane	ND	0.91	0.906						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	109	71-137		1,2-Dichloroethane-d4	122	58-160	
1,4-Bromofluorobenzene	86	66-126		Toluene-d8	101	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering		Date Received:	10/14/09
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg

Project: Alberhill Substation / 1009.24 — Page 3 of 12

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-3	**09-10-1223-4-C**	**10/14/09 13:20**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 18:27**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	45	0.901		1,3-Dichloropropane	ND	0.90	0.901	
Benzene	1.3	0.90	0.901		2,2-Dichloropropane	ND	4.5	0.901	
Bromobenzene	ND	0.90	0.901		1,1-Dichloropropene	ND	1.8	0.901	
Bromochloromethane	ND	1.8	0.901		c-1,3-Dichloropropene	ND	0.90	0.901	
Bromodichloromethane	ND	0.90	0.901		t-1,3-Dichloropropene	ND	1.8	0.901	
Bromoform	ND	4.5	0.901		Ethylbenzene	ND	0.90	0.901	
Bromomethane	ND	18	0.901		2-Hexanone	ND	18	0.901	
2-Butanone	ND	18	0.901		Isopropylbenzene	ND	0.90	0.901	
n-Butylbenzene	ND	0.90	0.901		p-Isopropyltoluene	ND	0.90	0.901	
sec-Butylbenzene	ND	0.90	0.901		Methylene Chloride	ND	9.0	0.901	
tert-Butylbenzene	ND	0.90	0.901		4-Methyl-2-Pentanone	ND	18	0.901	
Carbon Disulfide	ND	9.0	0.901		Naphthalene	ND	9.0	0.901	
Carbon Tetrachloride	ND	0.90	0.901		n-Propylbenzene	ND	1.8	0.901	
Chlorobenzene	ND	0.90	0.901		Styrene	ND	0.90	0.901	
Chloroethane	ND	1.8	0.901		1,1,1,2-Tetrachloroethane	ND	0.90	0.901	
Chloroform	ND	0.90	0.901		1,1,2,2-Tetrachloroethane	ND	1.8	0.901	
Chloromethane	ND	18	0.901		Tetrachloroethene	ND	0.90	0.901	
2-Chlorotoluene	ND	0.90	0.901		Toluene	ND	0.90	0.901	
4-Chlorotoluene	ND	0.90	0.901		1,2,3-Trichlorobenzene	ND	1.8	0.901	
Dibromochloromethane	ND	1.8	0.901		1,2,4-Trichlorobenzene	ND	1.8	0.901	
1,2-Dibromo-3-Chloropropane	ND	4.5	0.901		1,1,1-Trichloroethane	ND	0.90	0.901	
1,2-Dibromoethane	ND	0.90	0.901		1,1,2-Trichloroethane	ND	0.90	0.901	
Dibromomethane	ND	0.90	0.901		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.0	0.901	
1,2-Dichlorobenzene	ND	0.90	0.901		Trichloroethene	ND	1.8	0.901	
1,3-Dichlorobenzene	ND	0.90	0.901		Trichlorofluoromethane	ND	9.0	0.901	
1,4-Dichlorobenzene	ND	0.90	0.901		1,2,3-Trichloropropane	ND	1.8	0.901	
Dichlorodifluoromethane	ND	1.8	0.901		1,2,4-Trimethylbenzene	ND	1.8	0.901	
1,1-Dichloroethane	ND	0.90	0.901		1,3,5-Trimethylbenzene	ND	1.8	0.901	
1,2-Dichloroethane	ND	0.90	0.901		Vinyl Acetate	ND	9.0	0.901	
1,1-Dichloroethene	ND	0.90	0.901		Vinyl Chloride	ND	0.90	0.901	
c-1,2-Dichloroethene	ND	0.90	0.901		Xylenes (total)	ND	1.8	0.901	
t-1,2-Dichloroethene	ND	0.90	0.901		Methyl-t-Butyl Ether (MTBE)	ND	1.8	0.901	
1,2-Dichloropropane	ND	0.90	0.901						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	111	71-137		1,2-Dichloroethane-d4	123	58-160	
1,4-Bromofluorobenzene	83	66-126		Toluene-d8	102	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-4	**09-10-1223-5-C**	**10/14/09 13:51**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 18:58**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	74	43	0.855		1,3-Dichloropropane	ND	0.86	0.855	
Benzene	ND	0.86	0.855		2,2-Dichloropropane	ND	4.3	0.855	
Bromobenzene	ND	0.86	0.855		1,1-Dichloropropene	ND	1.7	0.855	
Bromochloromethane	ND	1.7	0.855		c-1,3-Dichloropropene	ND	0.86	0.855	
Bromodichloromethane	ND	0.86	0.855		t-1,3-Dichloropropene	ND	1.7	0.855	
Bromoform	ND	4.3	0.855		Ethylbenzene	ND	0.86	0.855	
Bromomethane	ND	17	0.855		2-Hexanone	ND	17	0.855	
2-Butanone	ND	17	0.855		Isopropylbenzene	ND	0.86	0.855	
n-Butylbenzene	ND	0.86	0.855		p-Isopropyltoluene	ND	0.86	0.855	
sec-Butylbenzene	ND	0.86	0.855		Methylene Chloride	ND	8.6	0.855	
tert-Butylbenzene	ND	0.86	0.855		4-Methyl-2-Pentanone	ND	17	0.855	
Carbon Disulfide	ND	8.6	0.855		Naphthalene	ND	8.6	0.855	
Carbon Tetrachloride	ND	0.86	0.855		n-Propylbenzene	ND	1.7	0.855	
Chlorobenzene	ND	0.86	0.855		Styrene	ND	0.86	0.855	
Chloroethane	ND	1.7	0.855		1,1,1,2-Tetrachloroethane	ND	0.86	0.855	
Chloroform	ND	0.86	0.855		1,1,2,2-Tetrachloroethane	ND	1.7	0.855	
Chloromethane	ND	17	0.855		Tetrachloroethene	ND	0.86	0.855	
2-Chlorotoluene	ND	0.86	0.855		Toluene	ND	0.86	0.855	
4-Chlorotoluene	ND	0.86	0.855		1,2,3-Trichlorobenzene	ND	1.7	0.855	
Dibromochloromethane	ND	1.7	0.855		1,2,4-Trichlorobenzene	ND	1.7	0.855	
1,2-Dibromo-3-Chloropropane	ND	4.3	0.855		1,1,1-Trichloroethane	ND	0.86	0.855	
1,2-Dibromoethane	ND	0.86	0.855		1,1,2-Trichloroethane	ND	0.86	0.855	
Dibromomethane	ND	0.86	0.855		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.6	0.855	
1,2-Dichlorobenzene	ND	0.86	0.855		Trichloroethene	ND	1.7	0.855	
1,3-Dichlorobenzene	ND	0.86	0.855		Trichlorofluoromethane	ND	8.6	0.855	
1,4-Dichlorobenzene	ND	0.86	0.855		1,2,3-Trichloropropane	ND	1.7	0.855	
Dichlorodifluoromethane	ND	1.7	0.855		1,2,4-Trimethylbenzene	ND	1.7	0.855	
1,1-Dichloroethane	ND	0.86	0.855		1,3,5-Trimethylbenzene	ND	1.7	0.855	
1,2-Dichloroethane	ND	0.86	0.855		Vinyl Acetate	ND	8.6	0.855	
1,1-Dichloroethene	ND	0.86	0.855		Vinyl Chloride	ND	0.86	0.855	
c-1,2-Dichloroethene	ND	0.86	0.855		Xylenes (total)	ND	1.7	0.855	
t-1,2-Dichloroethene	ND	0.86	0.855		Methyl-t-Butyl Ether (MTBE)	ND	1.7	0.855	
1,2-Dichloropropane	ND	0.86	0.855						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	103	71-137		1,2-Dichloroethane-d4	125	58-160	
1,4-Bromofluorobenzene	87	66-126		Toluene-d8	101	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-5	**09-10-1223-6-C**	**10/14/09 14:05**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 19:29**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	89	50	1.01		1,3-Dichloropropane	ND	1.0	1.01	
Benzene	ND	1.0	1.01		2,2-Dichloropropane	ND	5.0	1.01	
Bromobenzene	ND	1.0	1.01		1,1-Dichloropropene	ND	2.0	1.01	
Bromochloromethane	ND	2.0	1.01		c-1,3-Dichloropropene	ND	1.0	1.01	
Bromodichloromethane	ND	1.0	1.01		t-1,3-Dichloropropene	ND	2.0	1.01	
Bromoform	ND	5.0	1.01		Ethylbenzene	ND	1.0	1.01	
Bromomethane	ND	20	1.01		2-Hexanone	ND	20	1.01	
2-Butanone	ND	20	1.01		Isopropylbenzene	ND	1.0	1.01	
n-Butylbenzene	ND	1.0	1.01		p-Isopropyltoluene	ND	1.0	1.01	
sec-Butylbenzene	ND	1.0	1.01		Methylene Chloride	ND	10	1.01	
tert-Butylbenzene	ND	1.0	1.01		4-Methyl-2-Pentanone	ND	20	1.01	
Carbon Disulfide	ND	10	1.01		Naphthalene	ND	10	1.01	
Carbon Tetrachloride	ND	1.0	1.01		n-Propylbenzene	ND	2.0	1.01	
Chlorobenzene	ND	1.0	1.01		Styrene	ND	1.0	1.01	
Chloroethane	ND	2.0	1.01		1,1,1,2-Tetrachloroethane	ND	1.0	1.01	
Chloroform	ND	1.0	1.01		1,1,2,2-Tetrachloroethane	ND	2.0	1.01	
Chloromethane	ND	20	1.01		Tetrachloroethene	ND	1.0	1.01	
2-Chlorotoluene	ND	1.0	1.01		Toluene	ND	1.0	1.01	
4-Chlorotoluene	ND	1.0	1.01		1,2,3-Trichlorobenzene	ND	2.0	1.01	
Dibromochloromethane	ND	2.0	1.01		1,2,4-Trichlorobenzene	ND	2.0	1.01	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.01		1,1,1-Trichloroethane	ND	1.0	1.01	
1,2-Dibromoethane	ND	1.0	1.01		1,1,2-Trichloroethane	ND	1.0	1.01	
Dibromomethane	ND	1.0	1.01		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.01	
1,2-Dichlorobenzene	ND	1.0	1.01		Trichloroethene	ND	2.0	1.01	
1,3-Dichlorobenzene	ND	1.0	1.01		Trichlorofluoromethane	ND	10	1.01	
1,4-Dichlorobenzene	ND	1.0	1.01		1,2,3-Trichloropropane	ND	2.0	1.01	
Dichlorodifluoromethane	ND	2.0	1.01		1,2,4-Trimethylbenzene	ND	2.0	1.01	
1,1-Dichloroethane	ND	1.0	1.01		1,3,5-Trimethylbenzene	ND	2.0	1.01	
1,2-Dichloroethane	ND	1.0	1.01		Vinyl Acetate	ND	10	1.01	
1,1-Dichloroethene	ND	1.0	1.01		Vinyl Chloride	ND	1.0	1.01	
c-1,2-Dichloroethene	ND	1.0	1.01		Xylenes (total)	ND	2.0	1.01	
t-1,2-Dichloroethene	ND	1.0	1.01		Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.01	
1,2-Dichloropropane	ND	1.0	1.01						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	106	71-137		1,2-Dichloroethane-d4	126	58-160	
1,4-Bromofluorobenzene	85	66-126		Toluene-d8	101	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-6	**09-10-1223-7-C**	**10/14/09 15:05**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 20:00**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	56	1.12		1,3-Dichloropropane	ND	1.1	1.12	
Benzene	ND	1.1	1.12		2,2-Dichloropropane	ND	5.6	1.12	
Bromobenzene	ND	1.1	1.12		1,1-Dichloropropene	ND	2.2	1.12	
Bromochloromethane	ND	2.2	1.12		c-1,3-Dichloropropene	ND	1.1	1.12	
Bromodichloromethane	ND	1.1	1.12		t-1,3-Dichloropropene	ND	2.2	1.12	
Bromoform	ND	5.6	1.12		Ethylbenzene	ND	1.1	1.12	
Bromomethane	ND	22	1.12		2-Hexanone	ND	22	1.12	
2-Butanone	ND	22	1.12		Isopropylbenzene	ND	1.1	1.12	
n-Butylbenzene	ND	1.1	1.12		p-Isopropyltoluene	ND	1.1	1.12	
sec-Butylbenzene	ND	1.1	1.12		Methylene Chloride	ND	11	1.12	
tert-Butylbenzene	ND	1.1	1.12		4-Methyl-2-Pentanone	ND	22	1.12	
Carbon Disulfide	ND	11	1.12		Naphthalene	ND	11	1.12	
Carbon Tetrachloride	ND	1.1	1.12		n-Propylbenzene	ND	2.2	1.12	
Chlorobenzene	ND	1.1	1.12		Styrene	ND	1.1	1.12	
Chloroethane	ND	2.2	1.12		1,1,1,2-Tetrachloroethane	ND	1.1	1.12	
Chloroform	ND	1.1	1.12		1,1,2,2-Tetrachloroethane	ND	2.2	1.12	
Chloromethane	ND	22	1.12		Tetrachloroethene	ND	1.1	1.12	
2-Chlorotoluene	ND	1.1	1.12		Toluene	ND	1.1	1.12	
4-Chlorotoluene	ND	1.1	1.12		1,2,3-Trichlorobenzene	ND	2.2	1.12	
Dibromochloromethane	ND	2.2	1.12		1,2,4-Trichlorobenzene	ND	2.2	1.12	
1,2-Dibromo-3-Chloropropane	ND	5.6	1.12		1,1,1-Trichloroethane	ND	1.1	1.12	
1,2-Dibromoethane	ND	1.1	1.12		1,1,2-Trichloroethane	ND	1.1	1.12	
Dibromomethane	ND	1.1	1.12		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.12	
1,2-Dichlorobenzene	ND	1.1	1.12		Trichloroethene	ND	2.2	1.12	
1,3-Dichlorobenzene	ND	1.1	1.12		Trichlorofluoromethane	ND	11	1.12	
1,4-Dichlorobenzene	ND	1.1	1.12		1,2,3-Trichloropropane	ND	2.2	1.12	
Dichlorodifluoromethane	ND	2.2	1.12		1,2,4-Trimethylbenzene	ND	2.2	1.12	
1,1-Dichloroethane	ND	1.1	1.12		1,3,5-Trimethylbenzene	ND	2.2	1.12	
1,2-Dichloroethane	ND	1.1	1.12		Vinyl Acetate	ND	11	1.12	
1,1-Dichloroethene	ND	1.1	1.12		Vinyl Chloride	ND	1.1	1.12	
c-1,2-Dichloroethene	ND	1.1	1.12		Xylenes (total)	ND	2.2	1.12	
t-1,2-Dichloroethene	ND	1.1	1.12		Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.12	
1,2-Dichloropropane	ND	1.1	1.12						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	111	71-137		1,2-Dichloroethane-d4	122	58-160	
1,4-Bromofluorobenzene	85	66-126		Toluene-d8	102	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering		Date Received:	10/14/09
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg

Project: Alberhill Substation / 1009.24 — Page 7 of 12

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-7	**09-10-1223-8-C**	**10/14/09 15:00**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 20:31**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	52	1.05		1,3-Dichloropropane	ND	1.0	1.05	
Benzene	ND	1.0	1.05		2,2-Dichloropropane	ND	5.2	1.05	
Bromobenzene	ND	1.0	1.05		1,1-Dichloropropene	ND	2.1	1.05	
Bromochloromethane	ND	2.1	1.05		c-1,3-Dichloropropene	ND	1.0	1.05	
Bromodichloromethane	ND	1.0	1.05		t-1,3-Dichloropropene	ND	2.1	1.05	
Bromoform	ND	5.2	1.05		Ethylbenzene	ND	1.0	1.05	
Bromomethane	ND	21	1.05		2-Hexanone	ND	21	1.05	
2-Butanone	ND	21	1.05		Isopropylbenzene	ND	1.0	1.05	
n-Butylbenzene	ND	1.0	1.05		p-Isopropyltoluene	ND	1.0	1.05	
sec-Butylbenzene	ND	1.0	1.05		Methylene Chloride	ND	10	1.05	
tert-Butylbenzene	ND	1.0	1.05		4-Methyl-2-Pentanone	ND	21	1.05	
Carbon Disulfide	ND	10	1.05		Naphthalene	ND	10	1.05	
Carbon Tetrachloride	ND	1.0	1.05		n-Propylbenzene	ND	2.1	1.05	
Chlorobenzene	ND	1.0	1.05		Styrene	ND	1.0	1.05	
Chloroethane	ND	2.1	1.05		1,1,1,2-Tetrachloroethane	ND	1.0	1.05	
Chloroform	ND	1.0	1.05		1,1,2,2-Tetrachloroethane	ND	2.1	1.05	
Chloromethane	ND	21	1.05		Tetrachloroethene	ND	1.0	1.05	
2-Chlorotoluene	ND	1.0	1.05		Toluene	ND	1.0	1.05	
4-Chlorotoluene	ND	1.0	1.05		1,2,3-Trichlorobenzene	ND	2.1	1.05	
Dibromochloromethane	ND	2.1	1.05		1,2,4-Trichlorobenzene	ND	2.1	1.05	
1,2-Dibromo-3-Chloropropane	ND	5.2	1.05		1,1,1-Trichloroethane	ND	1.0	1.05	
1,2-Dibromoethane	ND	1.0	1.05		1,1,2-Trichloroethane	ND	1.0	1.05	
Dibromomethane	ND	1.0	1.05		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.05	
1,2-Dichlorobenzene	ND	1.0	1.05		Trichloroethene	ND	2.1	1.05	
1,3-Dichlorobenzene	ND	1.0	1.05		Trichlorofluoromethane	ND	10	1.05	
1,4-Dichlorobenzene	ND	1.0	1.05		1,2,3-Trichloropropane	ND	2.1	1.05	
Dichlorodifluoromethane	ND	2.1	1.05		1,2,4-Trimethylbenzene	ND	2.1	1.05	
1,1-Dichloroethane	ND	1.0	1.05		1,3,5-Trimethylbenzene	ND	2.1	1.05	
1,2-Dichloroethane	ND	1.0	1.05		Vinyl Acetate	ND	10	1.05	
1,1-Dichloroethene	ND	1.0	1.05		Vinyl Chloride	ND	1.0	1.05	
c-1,2-Dichloroethene	ND	1.0	1.05		Xylenes (total)	ND	2.1	1.05	
t-1,2-Dichloroethene	ND	1.0	1.05		Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.05	
1,2-Dichloropropane	ND	1.0	1.05						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	115	71-137		1,2-Dichloroethane-d4	127	58-160	
1,4-Bromofluorobenzene	86	66-126		Toluene-d8	103	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-8	**09-10-1223-9-C**	**10/14/09 15:25**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 21:01**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	0.998		1,3-Dichloropropane	ND	1.0	0.998	
Benzene	ND	1.0	0.998		2,2-Dichloropropane	ND	5.0	0.998	
Bromobenzene	ND	1.0	0.998		1,1-Dichloropropene	ND	2.0	0.998	
Bromochloromethane	ND	2.0	0.998		c-1,3-Dichloropropene	ND	1.0	0.998	
Bromodichloromethane	ND	1.0	0.998		t-1,3-Dichloropropene	ND	2.0	0.998	
Bromoform	ND	5.0	0.998		Ethylbenzene	ND	1.0	0.998	
Bromomethane	ND	20	0.998		2-Hexanone	ND	20	0.998	
2-Butanone	ND	20	0.998		Isopropylbenzene	ND	1.0	0.998	
n-Butylbenzene	ND	1.0	0.998		p-Isopropyltoluene	ND	1.0	0.998	
sec-Butylbenzene	ND	1.0	0.998		Methylene Chloride	ND	10	0.998	
tert-Butylbenzene	ND	1.0	0.998		4-Methyl-2-Pentanone	ND	20	0.998	
Carbon Disulfide	ND	10	0.998		Naphthalene	ND	10	0.998	
Carbon Tetrachloride	ND	1.0	0.998		n-Propylbenzene	ND	2.0	0.998	
Chlorobenzene	ND	1.0	0.998		Styrene	ND	1.0	0.998	
Chloroethane	ND	2.0	0.998		1,1,1,2-Tetrachloroethane	ND	1.0	0.998	
Chloroform	ND	1.0	0.998		1,1,2,2-Tetrachloroethane	ND	2.0	0.998	
Chloromethane	ND	20	0.998		Tetrachloroethene	ND	1.0	0.998	
2-Chlorotoluene	ND	1.0	0.998		Toluene	ND	1.0	0.998	
4-Chlorotoluene	ND	1.0	0.998		1,2,3-Trichlorobenzene	ND	2.0	0.998	
Dibromochloromethane	ND	2.0	0.998		1,2,4-Trichlorobenzene	ND	2.0	0.998	
1,2-Dibromo-3-Chloropropane	ND	5.0	0.998		1,1,1-Trichloroethane	ND	1.0	0.998	
1,2-Dibromoethane	ND	1.0	0.998		1,1,2-Trichloroethane	ND	1.0	0.998	
Dibromomethane	ND	1.0	0.998		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	0.998	
1,2-Dichlorobenzene	ND	1.0	0.998		Trichloroethene	ND	2.0	0.998	
1,3-Dichlorobenzene	ND	1.0	0.998		Trichlorofluoromethane	ND	10	0.998	
1,4-Dichlorobenzene	ND	1.0	0.998		1,2,3-Trichloropropane	ND	2.0	0.998	
Dichlorodifluoromethane	ND	2.0	0.998		1,2,4-Trimethylbenzene	ND	2.0	0.998	
1,1-Dichloroethane	ND	1.0	0.998		1,3,5-Trimethylbenzene	ND	2.0	0.998	
1,2-Dichloroethane	ND	1.0	0.998		Vinyl Acetate	ND	10	0.998	
1,1-Dichloroethene	ND	1.0	0.998		Vinyl Chloride	ND	1.0	0.998	
c-1,2-Dichloroethene	ND	1.0	0.998		Xylenes (total)	ND	2.0	0.998	
t-1,2-Dichloroethene	ND	1.0	0.998		Methyl-t-Butyl Ether (MTBE)	ND	2.0	0.998	
1,2-Dichloropropane	ND	1.0	0.998						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	112	71-137		1,2-Dichloroethane-d4	125	58-160	
1,4-Bromofluorobenzene	88	66-126		Toluene-d8	101	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-9	**09-10-1223-10-C**	**10/14/09 15:45**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 21:32**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	53	1.06		1,3-Dichloropropane	ND	1.1	1.06	
Benzene	ND	1.1	1.06		2,2-Dichloropropane	ND	5.3	1.06	
Bromobenzene	ND	1.1	1.06		1,1-Dichloropropene	ND	2.1	1.06	
Bromochloromethane	ND	2.1	1.06		c-1,3-Dichloropropene	ND	1.1	1.06	
Bromodichloromethane	ND	1.1	1.06		t-1,3-Dichloropropene	ND	2.1	1.06	
Bromoform	ND	5.3	1.06		Ethylbenzene	ND	1.1	1.06	
Bromomethane	ND	21	1.06		2-Hexanone	ND	21	1.06	
2-Butanone	ND	21	1.06		Isopropylbenzene	ND	1.1	1.06	
n-Butylbenzene	ND	1.1	1.06		p-Isopropyltoluene	ND	1.1	1.06	
sec-Butylbenzene	ND	1.1	1.06		Methylene Chloride	ND	11	1.06	
tert-Butylbenzene	ND	1.1	1.06		4-Methyl-2-Pentanone	ND	21	1.06	
Carbon Disulfide	ND	11	1.06		Naphthalene	ND	11	1.06	
Carbon Tetrachloride	ND	1.1	1.06		n-Propylbenzene	ND	2.1	1.06	
Chlorobenzene	ND	1.1	1.06		Styrene	ND	1.1	1.06	
Chloroethane	ND	2.1	1.06		1,1,1,2-Tetrachloroethane	ND	1.1	1.06	
Chloroform	ND	1.1	1.06		1,1,2,2-Tetrachloroethane	ND	2.1	1.06	
Chloromethane	ND	21	1.06		Tetrachloroethene	ND	1.1	1.06	
2-Chlorotoluene	ND	1.1	1.06		Toluene	ND	1.1	1.06	
4-Chlorotoluene	ND	1.1	1.06		1,2,3-Trichlorobenzene	ND	2.1	1.06	
Dibromochloromethane	ND	2.1	1.06		1,2,4-Trichlorobenzene	ND	2.1	1.06	
1,2-Dibromo-3-Chloropropane	ND	5.3	1.06		1,1,1-Trichloroethane	ND	1.1	1.06	
1,2-Dibromoethane	ND	1.1	1.06		1,1,2-Trichloroethane	ND	1.1	1.06	
Dibromomethane	ND	1.1	1.06		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.06	
1,2-Dichlorobenzene	ND	1.1	1.06		Trichloroethene	ND	2.1	1.06	
1,3-Dichlorobenzene	ND	1.1	1.06		Trichlorofluoromethane	ND	11	1.06	
1,4-Dichlorobenzene	ND	1.1	1.06		1,2,3-Trichloropropane	ND	2.1	1.06	
Dichlorodifluoromethane	ND	2.1	1.06		1,2,4-Trimethylbenzene	ND	2.1	1.06	
1,1-Dichloroethane	ND	1.1	1.06		1,3,5-Trimethylbenzene	ND	2.1	1.06	
1,2-Dichloroethane	ND	1.1	1.06		Vinyl Acetate	ND	11	1.06	
1,1-Dichloroethene	ND	1.1	1.06		Vinyl Chloride	ND	1.1	1.06	
c-1,2-Dichloroethene	ND	1.1	1.06		Xylenes (total)	ND	2.1	1.06	
t-1,2-Dichloroethene	ND	1.1	1.06		Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.06	
1,2-Dichloropropane	ND	1.1	1.06						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	113	71-137		1,2-Dichloroethane-d4	130	58-160	
1,4-Bromofluorobenzene	85	66-126		Toluene-d8	100	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-10	**09-10-1223-11-C**	**10/14/09 16:05**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 22:03**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	45	0.903		1,3-Dichloropropane	ND	0.90	0.903	
Benzene	ND	0.90	0.903		2,2-Dichloropropane	ND	4.5	0.903	
Bromobenzene	ND	0.90	0.903		1,1-Dichloropropene	ND	1.8	0.903	
Bromochloromethane	ND	1.8	0.903		c-1,3-Dichloropropene	ND	0.90	0.903	
Bromodichloromethane	ND	0.90	0.903		t-1,3-Dichloropropene	ND	1.8	0.903	
Bromoform	ND	4.5	0.903		Ethylbenzene	ND	0.90	0.903	
Bromomethane	ND	18	0.903		2-Hexanone	ND	18	0.903	
2-Butanone	ND	18	0.903		Isopropylbenzene	ND	0.90	0.903	
n-Butylbenzene	ND	0.90	0.903		p-Isopropyltoluene	ND	0.90	0.903	
sec-Butylbenzene	ND	0.90	0.903		Methylene Chloride	ND	9.0	0.903	
tert-Butylbenzene	ND	0.90	0.903		4-Methyl-2-Pentanone	ND	18	0.903	
Carbon Disulfide	ND	9.0	0.903		Naphthalene	ND	9.0	0.903	
Carbon Tetrachloride	ND	0.90	0.903		n-Propylbenzene	ND	1.8	0.903	
Chlorobenzene	ND	0.90	0.903		Styrene	ND	0.90	0.903	
Chloroethane	ND	1.8	0.903		1,1,1,2-Tetrachloroethane	ND	0.90	0.903	
Chloroform	ND	0.90	0.903		1,1,2,2-Tetrachloroethane	ND	1.8	0.903	
Chloromethane	ND	18	0.903		Tetrachloroethene	ND	0.90	0.903	
2-Chlorotoluene	ND	0.90	0.903		Toluene	ND	0.90	0.903	
4-Chlorotoluene	ND	0.90	0.903		1,2,3-Trichlorobenzene	ND	1.8	0.903	
Dibromochloromethane	ND	1.8	0.903		1,2,4-Trichlorobenzene	ND	1.8	0.903	
1,2-Dibromo-3-Chloropropane	ND	4.5	0.903		1,1,1-Trichloroethane	ND	0.90	0.903	
1,2-Dibromoethane	ND	0.90	0.903		1,1,2-Trichloroethane	ND	0.90	0.903	
Dibromomethane	ND	0.90	0.903		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.0	0.903	
1,2-Dichlorobenzene	ND	0.90	0.903		Trichloroethene	ND	1.8	0.903	
1,3-Dichlorobenzene	ND	0.90	0.903		Trichlorofluoromethane	ND	9.0	0.903	
1,4-Dichlorobenzene	ND	0.90	0.903		1,2,3-Trichloropropane	ND	1.8	0.903	
Dichlorodifluoromethane	ND	1.8	0.903		1,2,4-Trimethylbenzene	ND	1.8	0.903	
1,1-Dichloroethane	ND	0.90	0.903		1,3,5-Trimethylbenzene	ND	1.8	0.903	
1,2-Dichloroethane	ND	0.90	0.903		Vinyl Acetate	ND	9.0	0.903	
1,1-Dichloroethene	ND	0.90	0.903		Vinyl Chloride	ND	0.90	0.903	
c-1,2-Dichloroethene	ND	0.90	0.903		Xylenes (total)	ND	1.8	0.903	
t-1,2-Dichloroethene	ND	0.90	0.903		Methyl-t-Butyl Ether (MTBE)	ND	1.8	0.903	
1,2-Dichloropropane	ND	0.90	0.903						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	110	71-137		1,2-Dichloroethane-d4	125	58-160	
1,4-Bromofluorobenzene	85	66-126		Toluene-d8	102	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	10/14/09
20 Corporate Park, Suite 285	Work Order No:	09-10-1223
Irvine, CA 92606-5139	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
HA-11	**09-10-1223-12-C**	**10/14/09 16:15**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 22:33**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	43	0.856		1,3-Dichloropropane	ND	0.86	0.856	
Benzene	1.5	0.86	0.856		2,2-Dichloropropane	ND	4.3	0.856	
Bromobenzene	ND	0.86	0.856		1,1-Dichloropropene	ND	1.7	0.856	
Bromochloromethane	ND	1.7	0.856		c-1,3-Dichloropropene	ND	0.86	0.856	
Bromodichloromethane	ND	0.86	0.856		t-1,3-Dichloropropene	ND	1.7	0.856	
Bromoform	ND	4.3	0.856		Ethylbenzene	ND	0.86	0.856	
Bromomethane	ND	17	0.856		2-Hexanone	ND	17	0.856	
2-Butanone	ND	17	0.856		Isopropylbenzene	ND	0.86	0.856	
n-Butylbenzene	ND	0.86	0.856		p-Isopropyltoluene	ND	0.86	0.856	
sec-Butylbenzene	ND	0.86	0.856		Methylene Chloride	ND	8.6	0.856	
tert-Butylbenzene	ND	0.86	0.856		4-Methyl-2-Pentanone	ND	17	0.856	
Carbon Disulfide	ND	8.6	0.856		Naphthalene	ND	8.6	0.856	
Carbon Tetrachloride	ND	0.86	0.856		n-Propylbenzene	ND	1.7	0.856	
Chlorobenzene	ND	0.86	0.856		Styrene	ND	0.86	0.856	
Chloroethane	ND	1.7	0.856		1,1,1,2-Tetrachloroethane	ND	0.86	0.856	
Chloroform	ND	0.86	0.856		1,1,2,2-Tetrachloroethane	ND	1.7	0.856	
Chloromethane	ND	17	0.856		Tetrachloroethene	ND	0.86	0.856	
2-Chlorotoluene	ND	0.86	0.856		Toluene	ND	0.86	0.856	
4-Chlorotoluene	ND	0.86	0.856		1,2,3-Trichlorobenzene	ND	1.7	0.856	
Dibromochloromethane	ND	1.7	0.856		1,2,4-Trichlorobenzene	ND	1.7	0.856	
1,2-Dibromo-3-Chloropropane	ND	4.3	0.856		1,1,1-Trichloroethane	ND	0.86	0.856	
1,2-Dibromoethane	ND	0.86	0.856		1,1,2-Trichloroethane	ND	0.86	0.856	
Dibromomethane	ND	0.86	0.856		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.6	0.856	
1,2-Dichlorobenzene	ND	0.86	0.856		Trichloroethene	ND	1.7	0.856	
1,3-Dichlorobenzene	ND	0.86	0.856		Trichlorofluoromethane	ND	8.6	0.856	
1,4-Dichlorobenzene	ND	0.86	0.856		1,2,3-Trichloropropane	ND	1.7	0.856	
Dichlorodifluoromethane	ND	1.7	0.856		1,2,4-Trimethylbenzene	ND	1.7	0.856	
1,1-Dichloroethane	ND	0.86	0.856		1,3,5-Trimethylbenzene	ND	1.7	0.856	
1,2-Dichloroethane	ND	0.86	0.856		Vinyl Acetate	ND	8.6	0.856	
1,1-Dichloroethene	ND	0.86	0.856		Vinyl Chloride	ND	0.86	0.856	
c-1,2-Dichloroethene	ND	0.86	0.856		Xylenes (total)	ND	1.7	0.856	
t-1,2-Dichloroethene	ND	0.86	0.856		Methyl-t-Butyl Ether (MTBE)	ND	1.7	0.856	
1,2-Dichloropropane	ND	0.86	0.856						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	102	71-137		1,2-Dichloroethane-d4	128	58-160	
1,4-Bromofluorobenzene	87	66-126		Toluene-d8	101	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering		Date Received:	10/14/09
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg

Project: Alberhill Substation / 1009.24 — Page 12 of 12

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-18,335**	**N/A**	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09 16:54**	**091015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		1,3-Dichloropropane	ND	1.0	1	
Benzene	ND	1.0	1		2,2-Dichloropropane	ND	5.0	1	
Bromobenzene	ND	1.0	1		1,1-Dichloropropene	ND	2.0	1	
Bromochloromethane	ND	2.0	1		c-1,3-Dichloropropene	ND	1.0	1	
Bromodichloromethane	ND	1.0	1		t-1,3-Dichloropropene	ND	2.0	1	
Bromoform	ND	5.0	1		Ethylbenzene	ND	1.0	1	
Bromomethane	ND	20	1		2-Hexanone	ND	20	1	
2-Butanone	ND	20	1		Isopropylbenzene	ND	1.0	1	
n-Butylbenzene	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1		Methylene Chloride	ND	10	1	
tert-Butylbenzene	ND	1.0	1		4-Methyl-2-Pentanone	ND	20	1	
Carbon Disulfide	ND	10	1		Naphthalene	ND	10	1	
Carbon Tetrachloride	ND	1.0	1		n-Propylbenzene	ND	2.0	1	
Chlorobenzene	ND	1.0	1		Styrene	ND	1.0	1	
Chloroethane	ND	2.0	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Chloroform	ND	1.0	1		1,1,2,2-Tetrachloroethane	ND	2.0	1	
Chloromethane	ND	20	1		Tetrachloroethene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		Toluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,2,3-Trichlorobenzene	ND	2.0	1	
Dibromochloromethane	ND	2.0	1		1,2,4-Trichlorobenzene	ND	2.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		1,1,1-Trichloroethane	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
Dibromomethane	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,2-Dichlorobenzene	ND	1.0	1		Trichloroethene	ND	2.0	1	
1,3-Dichlorobenzene	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
1,4-Dichlorobenzene	ND	1.0	1		1,2,3-Trichloropropane	ND	2.0	1	
Dichlorodifluoromethane	ND	2.0	1		1,2,4-Trimethylbenzene	ND	2.0	1	
1,1-Dichloroethane	ND	1.0	1		1,3,5-Trimethylbenzene	ND	2.0	1	
1,2-Dichloroethane	ND	1.0	1		Vinyl Acetate	ND	10	1	
1,1-Dichloroethene	ND	1.0	1		Vinyl Chloride	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Xylenes (total)	ND	2.0	1	
t-1,2-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	2.0	1	
1,2-Dichloropropane	ND	1.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	109	71-137		1,2-Dichloroethane-d4	111	58-160	
1,4-Bromofluorobenzene	85	66-126		Toluene-d8	100	87-111	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 300.0

Project Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
GW-1	**Aqueous**	**IC 7**	**N/A**	**10/15/09**	**091015S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	101	102	80-120	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 300.0

Project Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
HA-11	**Solid**	**IC 7**	**N/A**	**10/16/09**	**091016S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	103	103	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Rubicon Engineering		Date Received:	10/14/09
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	N/A
		Method:	EPA 418.1M

Project Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-10-1426-3	**Solid**	**IR #1**	**10/20/09**	**10/20/09**	**091020S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TRPH	104	106	55-135	2	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 10/14/09
Work Order No: 09-10-1223
Preparation: EPA 5030B
Method: EPA 8260B

Project Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-10-1059-2	**Aqueous**	**GC/MS S**	**10/15/09**	**10/15/09**	**091015S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	113	114	72-120	1	0-20	
Carbon Tetrachloride	119	120	63-135	1	0-20	
Chlorobenzene	105	104	80-120	1	0-20	
1,2-Dibromoethane	104	105	80-120	1	0-20	
1,2-Dichlorobenzene	97	98	80-120	1	0-20	
1,1-Dichloroethene	97	97	60-132	0	0-24	
Ethylbenzene	108	107	78-120	0	0-20	
Toluene	109	108	74-122	2	0-20	
Trichloroethene	106	107	69-120	1	0-20	
Vinyl Chloride	96	94	58-130	2	0-20	
Methyl-t-Butyl Ether (MTBE)	112	105	72-126	6	0-21	
Tert-Butyl Alcohol (TBA)	94	97	72-126	3	0-20	
Diisopropyl Ether (DIPE)	122	123	71-137	1	0-23	
Ethyl-t-Butyl Ether (ETBE)	115	115	74-128	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	113	113	76-124	0	0-20	
Ethanol	98	87	35-167	12	0-48	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering		Date Received:	N/A
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	N/A
		Method:	EPA 300.0

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-906-526	**Aqueous**	**IC 7**	**N/A**	**10/15/09**	**091015L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	100	100	90-110	0	0-15	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering		Date Received:	N/A
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	N/A
		Method:	EPA 300.0

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-922-31	**Solid**	**IC 7**	**N/A**	**10/16/09**	**091016L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	101	103	90-110	2	0-15	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: N/A
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 1664A

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-119-2,066	**Aqueous**	**N/A**	**N/A**	**10/18/09**	**91018HEML2**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
HEM: Oil and Grease	96	94	78-114	2	0-18	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering		Date Received:	N/A
20 Corporate Park, Suite 285		Work Order No:	09-10-1223
Irvine, CA 92606-5139		Preparation:	N/A
		Method:	EPA 1664A M

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-040-267	**Solid**	**N/A**	**10/19/09**	**10/19/09**	**91019HEML1**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
HEM: Oil and Grease	92	92	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: N/A
Work Order No: 09-10-1223
Preparation: N/A
Method: EPA 418.1M

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-07-015-1,598	**Solid**	**IR #1**	**10/20/09**	**NONE**	**091020L01**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
TRPH	100	98.7	99	70-130	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: N/A
Work Order No: 09-10-1223
Preparation: EPA 5030B
Method: EPA 8260B

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-006-30,991	**Aqueous**	**GC/MS S**	**10/15/09**	**10/15/09**	**091015L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	110	111	80-122	73-129	1	0-20	
Carbon Tetrachloride	120	121	68-140	56-152	1	0-20	
Chlorobenzene	103	103	80-120	73-127	0	0-20	
1,2-Dibromoethane	101	100	80-121	73-128	0	0-20	
1,2-Dichlorobenzene	98	97	80-120	73-127	1	0-20	
1,1-Dichloroethene	99	96	72-132	62-142	4	0-25	
Ethylbenzene	106	109	80-126	72-134	2	0-20	
Toluene	108	108	80-121	73-128	0	0-20	
Trichloroethene	105	105	80-123	73-130	0	0-20	
Vinyl Chloride	98	96	67-133	56-144	2	0-20	
Methyl-t-Butyl Ether (MTBE)	103	102	75-123	67-131	0	0-20	
Tert-Butyl Alcohol (TBA)	92	89	75-123	67-131	3	0-20	
Diisopropyl Ether (DIPE)	120	119	71-131	61-141	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	111	114	76-124	68-132	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	108	111	80-123	73-130	2	0-20	
Ethanol	86	87	61-139	48-152	1	0-27	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: N/A
Work Order No: 09-10-1223
Preparation: EPA 5035
Method: EPA 8260B

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-18,335	**Solid**	**GC/MS U**	**10/15/09**	**10/15/09**	**091015L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	100	100	85-115	80-120	0	0-11	
Carbon Tetrachloride	97	97	68-134	57-145	0	0-14	
Chlorobenzene	97	96	83-119	77-125	1	0-9	
1,2-Dibromoethane	100	99	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	98	97	57-135	44-148	1	0-10	
1,1-Dichloroethene	94	94	72-120	64-128	0	0-10	
Ethylbenzene	107	106	80-120	73-127	1	0-20	
Toluene	99	98	67-127	57-137	0	0-10	
Trichloroethene	97	96	88-112	84-116	1	0-9	
Vinyl Chloride	97	94	57-129	45-141	3	0-16	
Methyl-t-Butyl Ether (MTBE)	96	96	76-124	68-132	0	0-12	
Tert-Butyl Alcohol (TBA)	95	92	31-145	12-164	4	0-23	
Diisopropyl Ether (DIPE)	99	100	74-128	65-137	1	0-10	
Ethyl-t-Butyl Ether (ETBE)	93	94	77-125	69-133	1	0-9	
Tert-Amyl-Methyl Ether (TAME)	102	102	81-123	74-130	1	0-10	
Ethanol	94	85	44-152	26-170	9	0-24	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-10-1223

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

Calscience Environmental Laboratories, Inc.

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 10/14/09

Page 1 of 2

LABORATORY CLIENT: Rubicon Engineering Corp.

ADDRESS: 20 Corporate Park #285

CITY: Irvine STATE: CA ZIP: 92606

TEL: 949)296-1177 E-MAIL: PLee@Rubiconeng.com

CLIENT PROJECT NAME / NUMBER: Alderhill Substation

P.O. NO.: 1009.24

PROJECT CONTACT: Mohsen Mehran

LAB USE ONLY: 1 0 - 1 2 2 3

SAMPLER(S): (PRINT) Peter Lee

COELT LOG CODE: ☐☐☐☐

COOLER RECEIPT TEMP= ____ °C

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☒ 72 HR ☐ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐ ____

SPECIAL INSTRUCTIONS:

* For GW -1: test for total & fecal coliform.

*For samples HA-6, HA-7, HA-8, HA-9, HA-10, & HA-11: test for Heterotrophic Plate Count.

Invoice to SCE PO - 4500015033 POC - Phoung Tran at 626-302-3074

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+ ____	Oil & Grease	Nitrate	* Coliform bacteria
1	GW-1		10/14/09	10:20	water	6					X											X	X	X
2	HA-1		"	10:20	soil	4					X											X	X	
3	HA-2		"	10:43	"	"					X											X	X	
4	HA-3		"	13:20	"	"					X											X	X	
5	HA-4		"	13:51	"	"					X											X	X	
6	HA-5		"	14:05	"	"					X											X	X	
7	HA-6		"	15:05	"	"					X											X	X	X
8	HA-7		"	15:00	"	"					X											X	X	X
9	HA-8		"	15:25	"	"					X											X	X	X
10	HA-9		"	15:45	"	"					X											X	X	X

Relinquished by: (Signature) Peter Lee	Received by: (Signature/Affiliation) Dannyle CEL	Date: 10/14/09	Time: 18:38
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/01/07 Revision

Calscience Environmental Laboratories, Inc.

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 10/14/09

Page 2 of 2

LABORATORY CLIENT: Rubicon Engineering Corp.

ADDRESS: 20 Corporate Park, #285

CITY: Irvine STATE: CA ZIP: 92606

TEL: 949) 296-1177 E-MAIL: PLee@Rubiconeng.com

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☒ 72 HR ☐ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐ _____

SPECIAL INSTRUCTIONS:

CLIENT PROJECT NAME / NUMBER: Alberhill Substation

P.O. NO.: 1009.24

PROJECT CONTACT: Mohsen Mehran

LAB USE ONLY: 10-1223

SAMPLER(S): (PRINT) Peter Lee

COELT LOG CODE: ☐☐☐☐

COOLER RECEIPT TEMP= _____ °C

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+ ____	Oil & Grease	Nitrate	Coliform bacteria
11	HA-10		10/14/09	16:05	Soil	4					X											X	X	X
12	HA-11		"	16:15	"	"					X											X	X	X

Relinquished by: (Signature) Peter Lee	Received by: (Signature/Affiliation) Danny Le CCL	Date: 10/14/09	Time: 18:38
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/01/07 Revision

Richard Villafania

From: Mohsen Mehran [mmehran@rubiconeng.com]
Sent: Friday, October 16, 2009 3:20 PM
To: Richard Villafania
Subject: RE: COC for Alberhill Substation / CEL 09-10-1223

Richard:

Pursuant to our discussions, please add TRPH analysis to the list of previous analyses for all soil samples.

Regards,

Mohsen Mehran, Ph.D.
Principal
Rubicon Engineering Corporation
20 Corporate Park, Suite 285
Irvine, CA 92606
Tel: (949) 296-1177 Ext. 102
Fax: (949) 296-1178
Cell: (949) 751-8124
mmehran@rubiconeng.com

From: Richard Villafania [mailto:RVillafania@calscience.com]
Sent: Thursday, October 15, 2009 10:44 AM
To: tranpk@sce.com
Cc: Mohsen Mehran
Subject: COC for Alberhill Substation / CEL 09-10-1223

<<09-10-1223.PDF>>

Thank you.

Richard Villafania

Calscience Environmental
Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Tel.: 714-895-5494
Fax : 714-894-7501
rvillafania@calscience.com

The difference is service


Please consider the environment before printing this e-mail

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-10-[1][2][2][3]

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Rubicon Engineering Corp. DATE: 10/14/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3.1 °C - 0.2 °C (CF) = 2.9 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** D.L

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** D.L

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** D.L

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☑Sleeve ☑EnCores® 3 ☐TerraCores® ☐_____

Water: ☐VOA ☑VOAh 3 ☐VOA**na₂** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na₂** ☑1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na**

☐250PB ☐250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☑100PJ**na₂** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Checked by:** D.L

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelop **Reviewed by:** D.L

Preservative: **h:** HCL **n:** HNO3 **na₂:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** D.L

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-10-1223

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☐ **Samples received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s)/preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample labels do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☑ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Containers**
  - ☐ **Analysis**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☐ **Air sample containers compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

(-1) Collection time per label is 9:15

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date DL 10/14/09

SILLIKER®
Food Safety & Quality Solutions
SILLIKER, Inc.
Southern California Laboratory
6360 Gateway Drive, Cypress, CA 90630
Tel. 714/ 226 0000 Fax. 714/ 226 0009

CERTIFICATE OF ANALYSIS

COA No:	SCA-33294873-0
Supersedes:	None
COA Date	10/17/09
Page 1 of 2	

TO:
Mr. Richard Villafania
Project Manager
Calscience Environmental Laboratories, I
7440 Lincoln Way
Garden Grove, CA 92841

Received From:	Garden Grove, CA
Received Date:	10/15/09
P.O.# / ID:	09-10-1223
Location of Test: (except where noted)	Cypress, CA

Analytical Results

Desc. 1:	Sample ID: GW-1	**Laboratory ID:**	318646897
Desc. 2:	Date: 10/14/2009	**Condition Rec'd:**	NORMAL
Desc. 3:	Time: 10:20	**Temp Rec'd (°C):**	9.8
Desc. 4:	Matrix: W		
Desc. 5:	Project: 09-10-1223		

Analyte	Result	Units	Method Reference	Test Date	Loc.
Coliforms - 5 tube MPN	<20	/100mL	SMEWW 20th, 9221A-E	10/17/09	
Fecal Coliforms - 5 tube MPN	<20	/100mL	SMEWW 20th, 9221A-E	10/17/09	

Desc. 1:	HA-6	**Laboratory ID:**	318646950
Desc. 2:	Date 10/14/2009	**Condition Rec'd:**	NORMAL
Desc. 3:	Time: 15:05	**Temp Rec'd (°C):**	9.8
Desc. 4:	Matrix: S		
Desc. 5:	Project: 09-10-1223		

Analyte	Result	Units	Method Reference	Test Date	Loc.
Aerobic Plate Count	1400000	/g	AOAC 966.23	10/17/09	

Desc. 1:	HA-7	**Laboratory ID:**	318646965
Desc. 2:	Date 10/14/2009	**Condition Rec'd:**	NORMAL
Desc. 3:	Time: 15:00	**Temp Rec'd (°C):**	9.8
Desc. 4:	Matrix: S		
Desc. 5:	Project: 09-10-1223		

Analyte	Result	Units	Method Reference	Test Date	Loc.
Aerobic Plate Count	120000	/g	AOAC 966.23	10/17/09	

Desc. 1:	HA-8	**Laboratory ID:**	318646971
Desc. 2:	Date 10/14/2009	**Condition Rec'd:**	NORMAL
Desc. 3:	Time: 15:25	**Temp Rec'd (°C):**	9.8
Desc. 4:	Matrix: S		
Desc. 5:	Project: 09-10-1223		

Analyte	Result	Units	Method Reference	Test Date	Loc.
Aerobic Plate Count	800000	/g	AOAC 966.23	10/17/09	

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Food Safety & Quality Solutions
SILLIKER, Inc.
Southern California Laboratory
6360 Gateway Drive, Cypress, CA 90630
Tel. 714/ 226 0000 Fax. 714/ 226 0009

CERTIFICATE OF ANALYSIS

COA No:	SCA-33294873-0
Supersedes:	None
COA Date	10/17/09
Page 2 of 2	

TO:
Mr. Richard Villafania
Project Manager
Calscience Environmental Laboratories, I
7440 Lincoln Way
Garden Grove, CA 92841

Received From:	Garden Grove, CA
Received Date:	10/15/09
P.O.# / ID:	09-10-1223
Location of Test: (except where noted)	Cypress, CA

Analytical Results

Desc. 1: HA-9 **Laboratory ID:** 318646976
Desc. 2: Date 10/14/2009 **Condition Rec'd:** NORMAL
Desc. 3: Time: 15:45 **Temp Rec'd (°C):** 9.8
Desc. 4: Matrix: S
Desc. 5: Project: 09-10-1223

Analyte	Result	Units	Method Reference	Test Date	Loc.
Aerobic Plate Count	650000	/g	AOAC 966.23	10/17/09	

Desc. 1: HA-10 **Laboratory ID:** 318646981
Desc. 2: Date 10/14/2009 **Condition Rec'd:** NORMAL
Desc. 3: Time: 16:05 **Temp Rec'd (°C):** 9.8
Desc. 4: Matrix: S
Desc. 5: Project: 09-10-1223

Analyte	Result	Units	Method Reference	Test Date	Loc.
Aerobic Plate Count	4000000 est.	/g	AOAC 966.23	10/17/09	

Desc. 1: HA-11 **Laboratory ID:** 318646987
Desc. 2: Date 10/14/2009 **Condition Rec'd:** NORMAL
Desc. 3: Time: 16:15 **Temp Rec'd (°C):** 9.8
Desc. 4: Matrix: S
Desc. 5: Project: 09-10-1223

Analyte	Result	Units	Method Reference	Test Date	Loc.
Aerobic Plate Count	600000	/g	AOAC 966.23	10/17/09	

Jorge Hernandez — Laboratory Director

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 · FAX: (714) 894-7501

TO: SILLIKER LABS

CHAIN OF CUSTODY RECORD

DATE: 10/15/2009

PAGE: 1 OF 1

LABORATORY CLIENT: CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
ADDRESS: 7440 LINCOLN WAY
CITY: GARDEN GROVE, CA 92841-1432
TEL: 714-895-5494 FAX: 714-894-7501 E-MAIL: rvillafania@calscience.com

CLIENT PROJECT NAME / NUMBER: 09-10-1223
PROJECT CONTACT: rvillafania@calscience.com
Richard Villafania (CALS-AD-14)
SAMPLER(S). (PRINT) Shawn Simmons

P.O. NO.: 09-10-1223
Temp Blank.:
LAB USE ONLY

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48HR ☑ 72 HR ☐ 5 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS:
72 hr TAT
[redacted]

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	FECAL COLIFORM	TOTAL COLIFORM	Heterotrophic Plate Count	Holding Time: D=days / H=hours / M=months / **=immediate at TRWL	CONTAINER TYPE
	GW-1	10/14/2009	10:20	W	1	X	X		ASAP	
	HA-6	10/14/2009	15:05	S	1			X	ASAP	
	HA-7	10/14/2009	15:00	S	1			X	ASAP	
	HA-8	10/14/2009	15:25	S	1			X	ASAP	
	HA-9	10/14/2009	15:45	S	1			X	ASAP	
	HA-10	10/14/2009	16:05	S	1			X	ASAP	
	HA-11	10/14/2009	16:15	S	1			X	ASAP	

0.3°C

PERSONAL DELIVERY

Relinquished by: (Signature)	Calscience	Received by: (Signature)	Date: 10/15/2009 Time:
Relinquished by: (Signature)		Received by: (Signature)	Date: Time:
Relinquished by: (Signature)		Received by: (Signature)	Date: 10/15/09 Time: 10 00 AM

Appendix B

Calscience Certificates of Analyses
(GW-1-well)

Calscience Environmental Laboratories, Inc.

Supplemental Report 1

November 09, 2009

Mohsen Mehran
Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Subject: **Calscience Work Order No.: 09-11-0194**
Client Reference: Alberhill Substation / 1009.24

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 11/4/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 11/04/09
Work Order No: 09-11-0194
Preparation: N/A
Method: EPA 300.0

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
GW-1	**09-11-0194-1-E**	**11/04/09 10:22**	**Aqueous**	**IC 10**	**N/A**	**11/04/09 13:40**	**091104L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	1.2	0.10	1		mg/L

Method Blank	**099-12-906-572**	**N/A**	**Aqueous**	**IC 10**	**N/A**	**11/04/09 09:19**	**091104L01**

Parameter	Result	RL	DF	Qual	Units
Nitrate (as N)	ND	0.10	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	11/04/09
20 Corporate Park, Suite 285	Work Order No:	09-11-0194
Irvine, CA 92606-5139	Preparation:	N/A
	Method:	EPA 1664A

Project: Alberhill Substation / 1009.24 Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
GW-1	**09-11-0194-1-F**	**11/04/09 10:22**	**Aqueous**	**N/A**	**11/04/09**	**11/04/09 18:00**	**91104HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	ND	1.0	1		mg/L

Method Blank	**099-05-119-2,104**	**N/A**	**Aqueous**	**N/A**	**11/04/09**	**11/04/09 18:00**	**91104HEML1**

Parameter	Result	RL	DF	Qual	Units
HEM: Oil and Grease	ND	1.0	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	11/04/09
20 Corporate Park, Suite 285	Work Order No:	09-11-0194
Irvine, CA 92606-5139	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
GW-1	**09-11-0194-1-A**	**11/04/09 10:22**	**Aqueous**	**GC/MS JJ**	**11/04/09**	**11/04/09 13:12**	**091104L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		1,3-Dichloropropane	ND	1.0	1	
Benzene	ND	0.50	1		2,2-Dichloropropane	ND	1.0	1	
Bromobenzene	ND	1.0	1		1,1-Dichloropropene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		c-1,3-Dichloropropene	ND	0.50	1	
Bromodichloromethane	ND	1.0	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromoform	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromomethane	ND	10	1		2-Hexanone	ND	10	1	
2-Butanone	ND	10	1		Isopropylbenzene	ND	1.0	1	
n-Butylbenzene	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1		Methylene Chloride	ND	10	1	
tert-Butylbenzene	ND	1.0	1		4-Methyl-2-Pentanone	ND	10	1	
Carbon Disulfide	ND	10	1		Naphthalene	ND	10	1	
Carbon Tetrachloride	ND	0.50	1		n-Propylbenzene	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Styrene	ND	1.0	1	
Chloroethane	ND	5.0	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Chloroform	ND	1.0	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chloromethane	ND	10	1		Tetrachloroethene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		Toluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1		1,2,4-Trichlorobenzene	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		1,1,1-Trichloroethane	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1		Trichloroethene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
1,4-Dichlorobenzene	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
Dichlorodifluoromethane	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		Vinyl Acetate	ND	10	1	
1,1-Dichloroethene	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
c-1,2-Dichloroethene	ND	1.0	1		p/m-Xylene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1		o-Xylene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	131	80-132			1,2-Dichloroethane-d4	126	80-141		
Toluene-d8	97	80-120			1,4-Bromofluorobenzene	81	76-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Rubicon Engineering	Date Received:	11/04/09
20 Corporate Park, Suite 285	Work Order No:	09-11-0194
Irvine, CA 92606-5139	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L

Project: Alberhill Substation / 1009.24

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-10-006-31,221**	**N/A**	**Aqueous**	**GC/MS JJ**	**11/04/09**	**11/04/09 12:09**	**091104L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		1,3-Dichloropropane	ND	1.0	1	
Benzene	ND	0.50	1		2,2-Dichloropropane	ND	1.0	1	
Bromobenzene	ND	1.0	1		1,1-Dichloropropene	ND	1.0	1	
Bromochloromethane	ND	1.0	1		c-1,3-Dichloropropene	ND	0.50	1	
Bromodichloromethane	ND	1.0	1		t-1,3-Dichloropropene	ND	0.50	1	
Bromoform	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromomethane	ND	10	1		2-Hexanone	ND	10	1	
2-Butanone	ND	10	1		Isopropylbenzene	ND	1.0	1	
n-Butylbenzene	ND	1.0	1		p-Isopropyltoluene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1		Methylene Chloride	ND	10	1	
tert-Butylbenzene	ND	1.0	1		4-Methyl-2-Pentanone	ND	10	1	
Carbon Disulfide	ND	10	1		Naphthalene	ND	10	1	
Carbon Tetrachloride	ND	0.50	1		n-Propylbenzene	ND	1.0	1	
Chlorobenzene	ND	1.0	1		Styrene	ND	1.0	1	
Chloroethane	ND	5.0	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Chloroform	ND	1.0	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
Chloromethane	ND	10	1		Tetrachloroethene	ND	1.0	1	
2-Chlorotoluene	ND	1.0	1		Toluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,2,3-Trichlorobenzene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1		1,2,4-Trichlorobenzene	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		1,1,1-Trichloroethane	ND	1.0	1	
1,2-Dibromoethane	ND	1.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1		Trichloroethene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
1,4-Dichlorobenzene	ND	1.0	1		1,2,3-Trichloropropane	ND	5.0	1	
Dichlorodifluoromethane	ND	1.0	1		1,2,4-Trimethylbenzene	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1		1,3,5-Trimethylbenzene	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1		Vinyl Acetate	ND	10	1	
1,1-Dichloroethene	ND	1.0	1		Vinyl Chloride	ND	0.50	1	
c-1,2-Dichloroethene	ND	1.0	1		p/m-Xylene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1		o-Xylene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	129	80-132			1,2-Dichloroethane-d4	123	80-141		
Toluene-d8	97	80-120			1,4-Bromofluorobenzene	83	76-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 11/04/09
Work Order No: 09-11-0194
Preparation: N/A
Method: EPA 300.0

Project Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
GW-1	**Aqueous**	**IC 10**	**N/A**	**11/04/09**	**091104S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	102	101	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 11/04/09
Work Order No: 09-11-0194
Preparation: N/A
Method: EPA 1664A

Project Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-11-0132-1	**Aqueous**	**N/A**	**11/04/09**	**11/04/09**	**91104HEMS1**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
HEM: Oil and Grease	93	88	78-114	6	0-18	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: 11/04/09
Work Order No: 09-11-0194
Preparation: EPA 5030B
Method: EPA 8260B

Project Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-11-0177-1	**Aqueous**	**GC/MS JJ**	**11/04/09**	**11/04/09**	**091104S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	94	100	72-120	6	0-20	
Carbon Tetrachloride	92	98	63-135	6	0-20	
Chlorobenzene	92	97	80-120	6	0-20	
1,2-Dibromoethane	101	101	80-120	0	0-20	
1,2-Dichlorobenzene	83	88	80-120	6	0-20	
1,1-Dichloroethene	85	90	60-132	6	0-24	
Ethylbenzene	94	99	78-120	6	0-20	
Toluene	96	102	74-122	6	0-20	
Trichloroethene	91	97	69-120	6	0-20	
Vinyl Chloride	78	80	58-130	2	0-20	
Methyl-t-Butyl Ether (MTBE)	81	87	72-126	7	0-21	
Tert-Butyl Alcohol (TBA)	95	93	72-126	3	0-20	
Diisopropyl Ether (DIPE)	84	91	71-137	8	0-23	
Ethyl-t-Butyl Ether (ETBE)	76	83	74-128	8	0-20	
Tert-Amyl-Methyl Ether (TAME)	82	88	76-124	7	0-20	
Ethanol	88	92	35-167	4	0-48	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering		Date Received:	N/A
20 Corporate Park, Suite 285		Work Order No:	09-11-0194
Irvine, CA 92606-5139		Preparation:	N/A
		Method:	EPA 300.0

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-906-572	**Aqueous**	**IC 10**	**N/A**	**11/04/09**	**091104L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	98	98	90-110	0	0-15	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: N/A
Work Order No: 09-11-0194
Preparation: N/A
Method: EPA 1664A

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-05-119-2,104	**Aqueous**	**N/A**	**11/04/09**	**NONE**	**91104HEML1**

Parameter	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
HEM: Oil and Grease	40.0	37.5	94	78-114	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Rubicon Engineering
20 Corporate Park, Suite 285
Irvine, CA 92606-5139

Date Received: N/A
Work Order No: 09-11-0194
Preparation: EPA 5030B
Method: EPA 8260B

Project: Alberhill Substation / 1009.24

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-006-31,221	**Aqueous**	**GC/MS JJ**	**11/04/09**	**11/04/09**	**091104L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	101	102	80-122	73-129	1	0-20	
Carbon Tetrachloride	100	102	68-140	56-152	2	0-20	
Chlorobenzene	98	99	80-120	73-127	1	0-20	
1,2-Dibromoethane	100	100	80-121	73-128	0	0-20	
1,2-Dichlorobenzene	88	90	80-120	73-127	2	0-20	
1,1-Dichloroethene	98	96	72-132	62-142	1	0-25	
Ethylbenzene	100	103	80-126	72-134	2	0-20	
Toluene	102	105	80-121	73-128	3	0-20	
Trichloroethene	98	99	80-123	73-130	1	0-20	
Vinyl Chloride	84	82	67-133	56-144	2	0-20	
Methyl-t-Butyl Ether (MTBE)	87	87	75-123	67-131	1	0-20	
Tert-Butyl Alcohol (TBA)	90	91	75-123	67-131	1	0-20	
Diisopropyl Ether (DIPE)	94	94	71-131	61-141	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	85	86	76-124	68-132	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	87	88	80-123	73-130	1	0-20	
Ethanol	82	88	61-139	48-152	7	0-27	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-11-0194

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

Calscience Environmental Laboratories, Inc.

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 11/4/09

Page 1 of 1

LABORATORY CLIENT: Rubicon Engineering Corp.

ADDRESS: 20 Corporate Park, #285

CITY: Irvine STATE: CA ZIP: 92606

TEL: 949-296-1177 E-MAIL: PLee@Rubiconeng.com

CLIENT PROJECT NAME / NUMBER: Alberhill Substation

P.O. NO.: 1009.24

PROJECT CONTACT: Mohsen Mehran

LAB USE ONLY: 1 1 - 0 1 9 4

SAMPLER(S): (PRINT) Peter Lee & Dane Robinson

COELT LOG CODE: ☐☐☐☐

COOLER RECEIPT TEMP= ____ °C

TURNAROUND TIME:
☐ SAME DAY ☒ 24 HR ☐ 48 HR ☐ 72 HR ☐ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☐ ____

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+ ____	Oil & Grease	~~Total~~ Nitrate	Coliform
1	GW-1		11/4/09	10:22	H_2O	6					X											X	X	X

Relinquished by: (Signature) Peter Lee	Received by: (Signature/Affiliation) Prec A. Co	Date: 11/04/09	Time: 11:38
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/01/07 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-11-0 1 9 4

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Rubicon

DATE: 11 / 04 / 09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3 . 6 °C - 0.8 °C (CF) = 2 . 8 °C ☑ **Blank** ☐ **Sample**

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** PS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOA**h** ☐VOA**na_2** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na_2** ☑1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na**

☑250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☑100PJ**na_2** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:** 091030A **Checked by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelop **Reviewed by:** JSL

Preservative: **h:** HCL **n:** HNO3 **na_2:**$Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** PS

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-11-0 1 9 Y

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☑ **Samples received but NOT LISTED on COC** — (-2) RECEIVED 2X TB BUT NOT ON COC.
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s)/preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample labels do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Containers**
  - ☐ **Analysis**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☐ **Air sample containers compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date PS 11/04/09

SILLIKER®
Food Safety & Quality Solutions
SILLIKER, Inc.
Southern California Laboratory
6360 Gateway Drive, Cypress, CA 90630
Tel. 714/ 226 0000 Fax. 714/ 226 0009

CERTIFICATE OF ANALYSIS

COA No:	SCA-33336041-0
Supersedes:	None
COA Date	11/6/09
Page 1 of 1	

TO:
Mr. Richard Villafania
Project Manager
Calscience Environmental Laboratories, I
7440 Lincoln Way
Garden Grove, CA 92841

Received From:	Garden Grove, CA
Received Date:	11/4/09
P.O.# / ID:	09-11-0194
Location of Test: (except where noted)	Cypress, CA

Analytical Results

Desc. 1:	Sample ID: GW-1	**Laboratory ID:**	318922682
Desc. 2:	Date: 11/4/2009	**Condition Rec'd:**	NORMAL
Desc. 3:	Time: 10:22	**Temp Rec'd (°C):**	2.3
Desc. 4:	Matrix: W		
Desc. 5:	Project: 09-11-0194		

Analyte	Result	Units	Method Reference	Test Date	Loc.
Coliforms - 5 tube MPN	<20	/100mL	SMEWW 20th, 9221A-E	11/6/09	
Fecal Coliforms - 5 tube MPN	<20	/100mL	SMEWW 20th, 9221A-E	11/6/09	

Jorge Hernandez — Laboratory Director

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 · FAX: (714) 894-7501

TO: SILLIKER LABS

CHAIN OF CUSTODY RECORD

DATE: 11/4/2009

PAGE: 1 OF 1

LABORATORY CLIENT: CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.

ADDRESS: 7440 LINCOLN WAY

CITY: GARDEN GROVE, CA 92841-1432

TEL: 714-895-5494 | FAX: 714-894-7501 | E-MAIL: rvillafania@calscience.com

CLIENT PROJECT NAME / NUMBER: 09-11-0194

PROJECT CONTACT: rvillafania@calscience.com
Richard Villafania (CALS-AD-14)

SAMPLER(S) (PRINT): Peter Lee

P.O. NO.: 09-11-0194

Temp Blank.:

LAB USE ONLY

TURNAROUND TIME
☐ SAME DAY ☑ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL __/__/__

SPECIAL INSTRUCTIONS:
24hr TAT

PERSONAL DELIVERY

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	FECAL & TOTAL COLIFORM	Holding Time: D=days / H=hours / M=months / **=immediate at TRWL	CONTAINER TYPE
	GW-1	11/4/2009	10:22	W	1	x	ASAP	

Relinquished by: (Signature) Wcbat Calscience	Received by: (Signature)	Date: 11/4/2009	Time: 1400
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-023

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 04/17/2012

Question 03:

Q.14.8

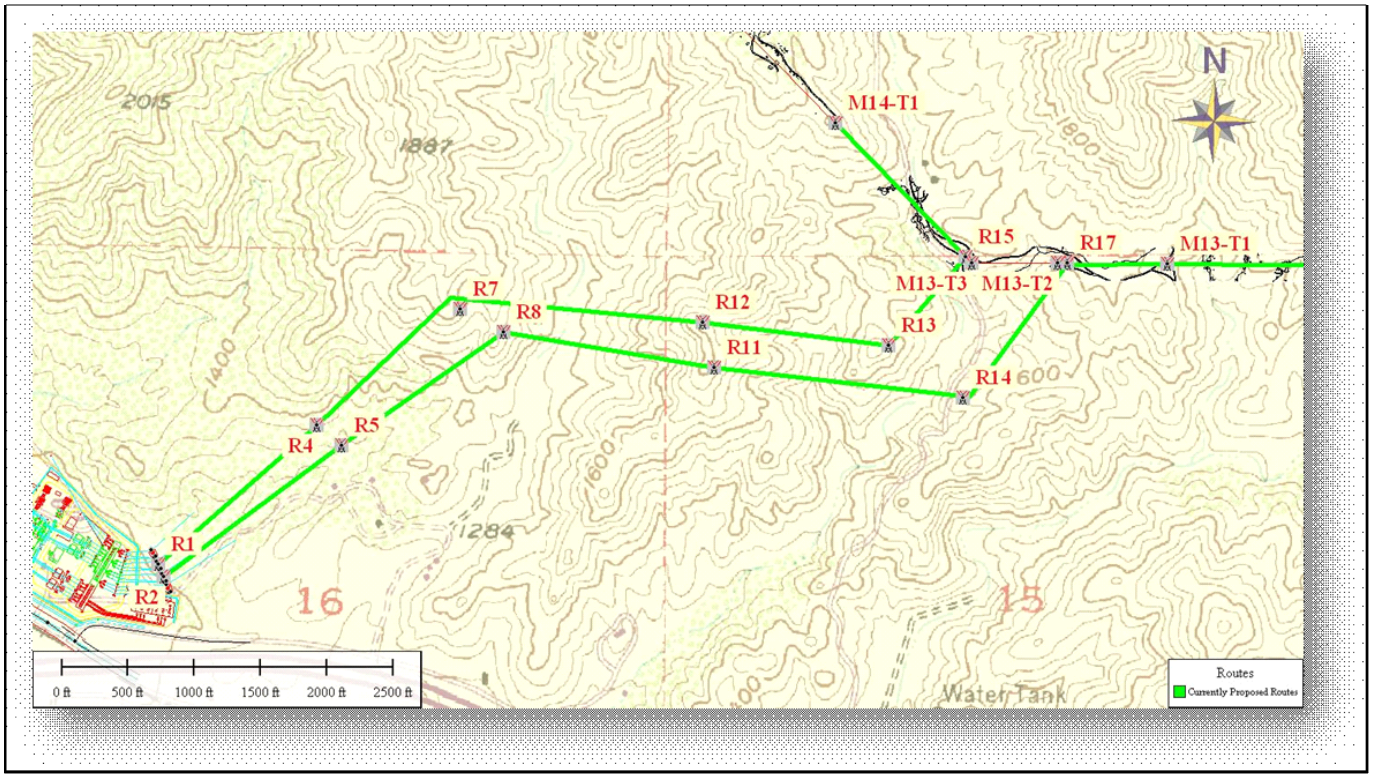
a. Discuss the feasibility of installing tubular steel poles (TSPs) instead of lattice steel towers (1) in each tower location along the proposed 500-kV line routes or (2) along the 500-kV line segments that are readily viewable from I-15 (i.e., tower locations 1 through 3 or 4 on both 500-kV routes).

b. Estimate the heights and widths for (1) single-circuit 500-kV TSPs and (2) double-circuit 500-kV TSPs if installed along the proposed 500-kV routes.

c. Discuss the feasibility of installing H-frame structures or other monopole structure formations of sufficient strength instead of lattice steel towers at tower locations 1 and 2 on both 500-kV routes. Estimate the heights and widths of the H-frame / monopole structures.

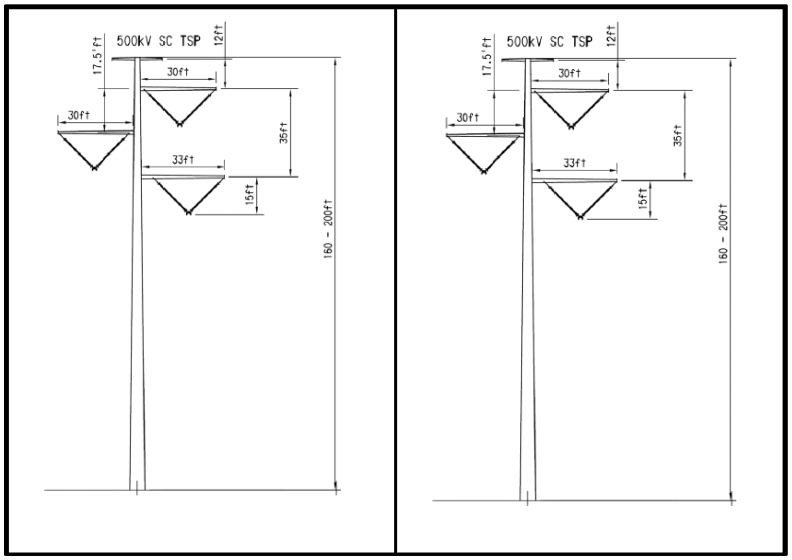
Response to Question 03:

Throughout the response to this data request, the naming convention of the proposed transmission structures is shown in the following image:

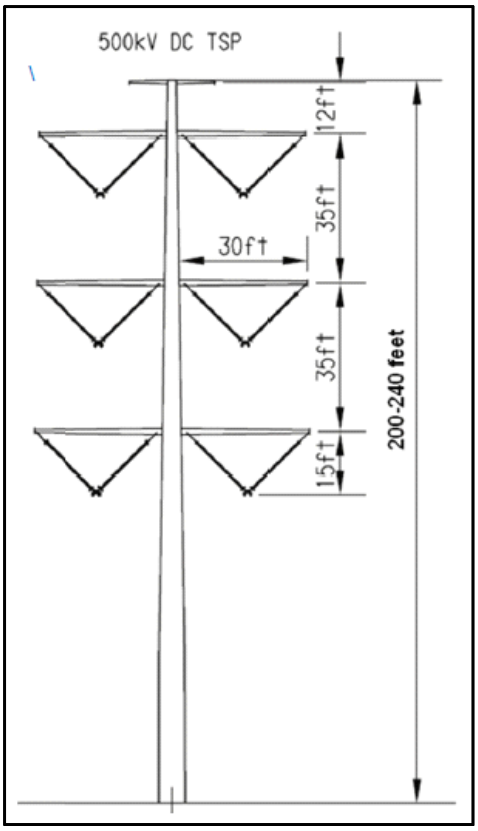


Answer for part (a) of this data request: The proposed lattice steel towers (LST) R7, R8, R13, R14, R15, and R17 must be dead ends and need to be LSTs due to constructability and strength requirements and limitations.

The proposed LSTs R4, R5, R11, and R12 are tangent structures; from an engineering point of view these structures could be erected as tubular steel poles (TSPs). The TSPs could be erected in single circuit configuration as shown below:



Or in a double circuit configuration as shown below:



However, from constructability point of view the transportation of the long, heavy sections of the TSPs to these locations would be challenging and close to impossible, particularly for structures R11 and R12. The minimum turning radius of the access roads for the transportation of TSPs is 75 feet compared to 50 feet for LSTs. TSPs cannot be airlifted. In general, the transportation of TSPs to these locations would require significantly wider roads compared to the transportation of LSTs; consequently, more permanent and temporary land disturbance. Also, the foundations for these TSPs would be approximately 12 feet in diameter and 60 feet deep requiring more concrete compared to LST construction.

Answer for part (b) of this data request: Please reference the above figures provided in the response to part a of this data request. The above figures detail ranges of TSP heights where construction of these structures could be feasible. Please note that the TSPs would be approximately 10 feet in diameter at their base. Please also note that no engineering studies have been conducted.

Answer for part (c) of this data request: Structures R1 and R2 are proposed as double circuit LSTs. Due to significant forces applied on them, these structures cannot be replaced by TSPs or H-frame structures. Strength wise, the structures at these locations could be three pole dead ends per circuit, however vertical configuration of the circuits is required in order to be able to rotate phasing as well as to bypass Alberhill during

construction of the substation. Therefore these structures must remain as LSTs.

Comment: Please note that the information provided by this response is subject to validation by detailed engineering. Further detailed engineering may disqualify the candidacy of monopole applications as detailed above. The current level of analysis does not permit confirmation of the candidacy of the monopole design option.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-024

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 05/11/2012

Question 08:

Q. 12.7.3.1

a. Confirm that the edits to pages 1, 3, and 4 of the document titled, "Alberhill Substation Site, Recommended Best Management Practices, August 30, 2011," provided by email in response to Data Request 12.7.1 are accurate.

b. Confirm that a water truck was used to control dust and fire risk during weed abatement conducted in September 2011 as indicated in the attached daily log

Response to Question 08:

a. Confirmed.

b. Confirmed.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-028

To: ENERGY DIVISION
Prepared by: Wendy Worthey
Title: Biologist
Dated: 10/10/2012

Question 06:

Question 14.11

1. Provide GIS data that shows where 2012 survey data could not be collected because it was located on Castle &
Cooke land or the land could not otherwise be accessed to complete surveys.

2. 2a. It is the CPUC's understanding that the Western Riverside County MSHCP does not apply to certain lands owned by Castle & Cooke (e.g., Pacific Clay and certain
Castle & Cooke residential developments). Clarify or revise the following statement (underlined) from the SCE 9/7/12 email.
"Addressing Castle & Cooke Issues: It should be noted that for the purposes of the proposed Valley-Ivyglen (ALB) which overlaps in part by the proposed Alberhill project, all areas of the Project were accessible by AMEC biologists in multiple years with the exception of Castle & Cooke (C&C) properties in 2012 due to their denial of survey access. Habitat assessments and focused surveys were conducted on C&C lands between 2006 and 2011 (Refer to Table 1 of AMEC Bio Survey Methods). Access was later denied prior to the 2012 survey year. SCE is involved in ongoing coordination with RCA, USFWS and CDFG (the latter two collectively referred to as Wildlife Agencies) on the best approach to address this issue and review options for obtaining take authorization of federal and state listed species. Per the direction of the RCA and Wildlife Agencies, the likelihood for species to occur on C&C lands shall be assumed based on observations during surveys prior to 2012 as well as the presence of habitat (e.g., clay soils, coastal sage scrub, riparian habitats, etc.) suitable to each of the sensitive species potentially occurring within the project vicinity. Options for take authorization throughout the project area, including on C&C properties, may include the Western Riverside County Multiple Species Habitat Conservation Plan, the Riverside County Habitat Conservation Agency Agreement (specific to Stephens' Kangaroo Rat), or Section 7/Section 10 of the Endangered Species Act along with the applicable State ESA equivalent process."
2b If the MSHCP does not apply to land owned by Castle & Cooke that would be traversed by components of the proposed project, specify how take for SKR and other wildlife species would be authorized for these areas.
2c. Specify on a map or with GIS data which Castle & Cooke properties (including the APNs) would be traversed by components of the proposed project that are not subject to the MSHCP, and cite the documents that provide the exemption for each Castle & Cooke

property specified.

3. For areas where take of SKR and other species cannot be authorized through the MSHCP or SKR HCP, discuss SCE's plans and timing for completion of USFWS and/or CDFG consultation and Section 7 and/or Section 10 processes along the Valley–Ivyglen 115-kV Transmission Line section between the proposed Alberhill Substation site southeast to 3rd Street (Alberhill System Project 115- kV Segment 2).

4. Provide GIS data that identifies the Additional Reserve Land that would be traversed by components of both the proposed Valley–Ivyglen 115-kV Subtransmission Line and Alberhill System Project's reconductoring of the Valley–Ivyglen 115-kV Subtransmission Line. See below for reference:

"Addressing ARL: It's also important to bring to your attention that the proposed VIG project 115 kV alignment will cross two areas of land that have been acquired as MSHCP Additional Reserve Lands (ARL) and are located within the MSHCP's Core 1. The two areas of established ARL are both part of one large parcel of established MSHCP Additional Reserve Lands (ARL) owned by Riverside County and located within the City of Lake Elsinore boundaries. The addition of an Alberhill line to the VIG line would also be located within this same ARL. SCE is coordinating with the RCA and the Wildlife Agencies on the appropriate approval process to expand existing facilities on established ARL, including proposing replacement land (in Core 1) equivalent or superior in functions and values as compared to the ARL potentially impacted by the proposed project. As part of the MSHCP Participating Special Entity (PSE) process, the VIG project will provide an equivalency analysis for RCA review and Wildlife Agency concurrence that would also cover Alberhill. The equivalency analysis will compare the potential effects on the ARL to the benefits of the replacement land, including other specific mitigation/compensation for potentially lost conservation functions and values. The analysis considers specific project design features, including consideration of the siting and design guidelines and best management practices, and shall address effects on covered species and habitats, core areas, linkages, constrained linkages, MSHCP Conservation Area configuration and management, and ecotones. The replacement ratio is anticipated to be 2:1 but will ultimately be determined by RCA and the Wildlife Agencies as part of the MSHCP PSE process.

One other area (< 1 acre) of ARL located to the east of Tower R14X (of the 500 kV alignment) may potentially be impacted during construction. This area will be restored to greatest extent possible. Should any permanent impacts to ARL result for the construction of R14X, the Alberhill project will provide an ARL equivalency analysis to be included as part of the MSHCP PSE process. As with the VIG project, RCA and the Wildlife Agencies will make equivalency findings and determine the appropriate replacement ratio as part of the MSHCP PSE process."

Response to Question 06:

1. Attached are two files labeled "Alberhill_DG_14.11_Items1,2c, 4_C&C_and_ARL_Map-to-CPUC_10-22-12.pdf" and "Alberhill_DG_14.11_Items1,2c, 4_C&C_and_ARL_GIS-to-CPUC_10-22-12.zip" The attached map and GIS data provide the outline of the parcels through which the project alignment traverses. This map and GIS data are

intended to address not only this DG 14.11 #1 but also show the areas being requested in DGs #2c and #4 below.

2a. SCE is currently coordinating with the Regional Conservation Authority (RCA), U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) to determine the applicable mechanism for "take authorization" of listed plant and wildlife species throughout the entire project area, including the areas where the project crosses Castle & Cooke (C&C) lands. RCA is working with their legal counsel regarding the issue of the MSHCP being available to SCE on C&C lands. Should it be determined that the MSHCP is not available to SCE in these areas, SCE may initiate a Section 7 or Section 10 process pursuant to the federal Endangered Species Act (ESA) along with the applicable State ESA equivalent process. SCE understands that the take authorization process must be completed prior to the start of project construction, which could include receipt of a Section 7 Biological Opinion, Section 10(a)(1)(B) incidental take permit or a MSHCP Certificate of Inclusion. As SCE gathers information pertinent to the applicable take authorization process, this will be communicated to the CPUC and E&E.

The MSHCP does not cover Stephens' kangaroo rat (SKR) in the area of the proposed project. Therefore, take for this species has been addressed pursuant to the Riverside County Habitat Conservation Agency (RCHCA) SKR Agreement approved October 15, 2012. Prior to construction, RCHCA will issue a Certificate of Inclusion to SCE completing the SKR take authorization process for the proposed project. The SKR Agreement is applicable to areas of the proposed project that traverse C&C lands.

2b. Refer to #2a above.

2c. Refer to #1 above.

3. Refer to #2a above.

4. Refer to #1 above for the ARL areas overlapped by both Alberhill and Valley-Ivyglen located along Nichols Road and along Lake Street. Also attached is the overview map previously provided to CPUC on 8-16-12 titled "Alberhill_Aerial_Overview_500kV_10-22-12.pdf" showing ARL areas specific to the Alberhill 500 kV element.

Draft Project Commitments for Alberhill System Project and Valley–Ivyglen Subtransmission Project

Project Commitment A: Landscaping and Irrigation Plan. For the Alberhill Project, prior to the start of construction, the applicant would develop a Landscaping and Irrigation Plan for Alberhill Substation road frontage only along Temescal Canyon Road, Concordia Ranch Road and Love Lane that is consistent with surrounding community standards, substation security and safety requirements. The applicant would consult with Riverside County about the Plan and incorporate applicable County recommendations to the extent possible. Landscaping would be designed to filter views from the surrounding community and other potential sensitive receptors near the proposed substation and be consistent with the surrounding community. The landscape plan would include a plant species list and installation and construction requirements. The applicant would contract a landscape architect to complete the landscaping plan during final engineering for the Alberhill Project. Irrigation and landscaping installation would occur after construction of the substation perimeter wall, subtransmission and transmission poles/towers erected, underground utility lines/cable ducts installed and water service has been established. During operations, the applicant would maintain the substation site pursuant to the Landscaping and Irrigation Plan and be responsible for upkeep as long as the applicant owns the property.

Project Commitment B: Worker Environmental Awareness Plan. Prior to construction of the proposed projects, a Worker Environmental Awareness Plan would be developed based on final engineering designs, the results of preconstruction surveys, project commitments, and mitigation measures imposed by the California Public Utilities Commission. A presentation would be prepared by the applicant and shown to all site workers prior to their start of work. A record of all trained personnel would be kept with the construction foreman. In addition to the instruction for compliance with any site-specific biological or cultural resource protective measures and project mitigation measures, all construction personnel would also receive the following:

- A list of phone numbers of the applicant's personnel with the (archeologist, biologist, environmental ~~compliance~~ coordinator, and regional spill response coordinator);
- Instruction on the South Coast Air Quality Management District Rule 403 for control of dust;
- Instruction on what typical cultural resources look like, and if discovered during construction, to suspend work in the vicinity of any find and contact the site foreman and archeologist or environmental ~~compliance~~ coordinator;
- Instruction on individual responsibilities under the Clean Water Act, the Storm Water Pollution Prevention Plan for the projects, site-specific Best Management Practices, and the location of Material Safety Data Sheets for the projects;
- Instructions to notify the foreman and regional spill response coordinator in case of hazardous materials spills and leaks from equipment or upon the discovery of soil or groundwater contamination;
- A copy of the truck routes to be used for material delivery; and
- Instruction that noncompliance with any laws, rules, regulations, or mitigation measures could result in being barred from participating in any remaining construction activities associated with the projects.

Project Commitment C: Raptor Protection. The applicant would design all 115-kV subtransmission structures consistent with the Suggested Practices for ~~Raptor~~ Avian Protection on Power Lines: The State of the Art in 2006~~2012~~ (APLIC 2006~~2012~~).

Project Commitment D: Habitat Restoration and Revegetation Plan. With input from the appropriate resource agencies, the applicant would develop and implement a Habitat Restoration and Revegetation Plan to restore temporarily impacted areas where construction of the projects would be unable to avoid impacts on native

vegetation and sensitive resources, such as wetlands, wetland buffer areas, riparian habitat, and other sensitive natural communities. The applicant would restore all temporarily impacted areas disturbed during construction of the projects, including staging areas and pull, tension, and splicing sites, to as close to pre-construction conditions as possible, or to the conditions agreed upon between the applicant and landowner. Replanting and reseeding would be conducted under the direction the applicant or contract biologists. If revegetation would occur on private property, revegetation conditions would be part of the agreement between the applicant and the landowner.

Project Commitment E: Grading Plans. SCE shall consult with Riverside County ~~The Riverside County Flood Control and Water Conservation District shall be consulted~~ regarding the grading plans for construction and operation of the proposed projects. ~~The County will review and approved final grading (and drainage) plans prior to start of construction.~~ Storm water improvements ~~sections of the plans~~ shall be designed to maintain a discharge of storm water runoff consistent with the characteristics of storm water runoff presently discharged from project areas including the Alberhill Substation site. Measures included in the plans shall minimize adverse effects on existing or planned storm water drainage systems. Ground surface improvements installed at the site pursuant to the plans shall be designed to minimize discharge of materials that would contribute to a violation of water quality standards or waste discharge requirements. The final grading design shall include features that would minimize erosion and siltation both onsite and offsite. In addition, the final grading (and drainage) design shall be based on the results of the geotechnical study and soil evaluation for the substation site (Project Commitment F).

Project Commitment F: Geotechnical Study, Soil Testing, and Seismic Design Standards. Prior to the start of construction, the applicant shall conduct geotechnical and hydrologic studies and field investigations of the Alberhill Substation site, 500-kV transmission line routes, all 115-kV subtransmission line routes, and all telecommunications line routes. The studies shall include an evaluation of the depth to the water table, liquefaction potential, physical properties of subsurface soils, soil resistivity, and slope stability (landslide susceptibility). The studies shall include soil boring and laboratory testing to determine the engineering properties of soils, would characterize soils and underlying bedrock units, characterize groundwater conditions, and evaluate faulting and seismicity risk. Soil samples shall be collected and analyzed for common contaminants and the presence of hazardous materials. If chemicals are detected in the soil samples at concentrations above ~~action~~ acceptable threshold levels, the applicant shall avoid the ~~contaminated~~ above threshold soil or work with the property owner to remove the ~~contaminated~~ above threshold soil. The results of this study shall be applied to final engineering designs for the projects. The information collected shall be used to determine final tubular steel pole foundation designs. In addition, the applicant shall design Alberhill Substation consistent with the applicable federal, state, and local codes, including the Institute of Electrical and Electronic Engineers 693 Standard, *Recommended Practices for Seismic Design of Substations*.

Project Commitment G: Aircraft Flight Path Safety Provisions and Consultations. Prior to construction, the applicant shall consult with the Federal Aviation Administration and ensure the filing of forms and associated specifications per the requirements of Federal Aviation Regulations Part 77 (Objects Affecting Navigable Airspace). ~~The applicant shall mark and light the components of the projects consistent with Federal Aviation Administration recommendations unless otherwise directed by the CPUC.~~ The applicant shall review all recommendations and/or determinations from the FAA and mark and/or light the FAA recommended components where the applicant finds they are reasonable and feasible.

Project Commitment H: Implement Noise Control Measures. The applicant shall implement the following noise control measures for the proposed projects:

- All construction and general maintenance activities, except in an emergency, shall be limited to the hours of 7:00 a.m. to 7:00 p.m. and prohibited on Sundays and all legally proclaimed holidays. ~~If the California Independent System Operator (CAISO) and/or Caltrans require that conductor stringing over freeways or highways occur after 7:00 p.m., or on a Sunday, SCE would obtain variances from all applicable jurisdictions.~~ SCE will obtain all relevant ministerial or non-discretionary noise permits from local jurisdictions. In the event that construction activities are necessary on days or hours outside of what is specified by the local ordinance, SCE would provide five-day advanced notification, including a general description of the work to be performed, location and hours of construction anticipated, to the CPUC, the local jurisdiction, and residents within 300 feet of the anticipated work, as well route all construction traffic away from residences, schools and recreational facilities to the extent feasible.
- Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Construction traffic shall be routed away from residences and schools where feasible.
- Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. A "common sense" approach to vehicle use shall be applied; if a vehicle is not required for use immediately or continuously for construction activities, its engine should be shut off. Note: certain equipment, such as large diesel-powered vehicles require extended idling for warm-up and repetitive construction tasks.
- The applicant will notify all receptors within 500 feet of construction of the potential to experience significant noise levels during construction.
- During construction, the applicant will use a temporary noise barrier that blocks the line of sight between the construction area and the residence ~~sound walls, noise-reduction blankets, or other noise reduction measures prior to developing the project site~~ in areas where sensitive receptors would be subjected to significant noise impacts.
- The applicant would shield small stationary equipment with portable barriers within 100 feet of residences, where feasible.
- The applicant would minimize engine idling and turn off engines when not in use.
- Where blasting is required for the Alberhill system Project, the applicant would conduct additional pre-blast notification and coordination with residents, utilities, and others that may be affected by blasting operations.

Project Commitment I: Agricultural Uses. Existing agricultural and grazing uses within the existing and proposed ROW areas shall be allowed to continue during operation of the proposed projects. In addition, the applicant shall coordinate construction and maintenance activities with agricultural landowners to avoid interference with grazing and agricultural activities unless such coordination is not possible due to emergency circumstances.

Project Commitment J: Air Emissions Controls. The applicant would implement the following fugitive dust control measures for the Valley–Ivyglen Subtransmission Project:

- Water three times per day or as needed during excavation, bulldozing, scraping, and grading activities, per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007).
- ~~Water storage piles by hand at a rate of 1.4 gallons/hour-yard, per SCAQMD's Table XI-B, Mitigation Measure Examples: Fugitive Dust from Materials Handling (Rev. 4/2007)~~ Water storage piles twice a day, resulting in a 50% fugitive dust control efficiency.
- Limit vehicle speeds on unpaved roads to 15 miles per hour, per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007).

The applicant would implement the following fugitive dust control measures for the Alberhill System Project:

- ~~Maintain 15 percent soil moisture conditions~~ Water three times per day or as needed during excavation, bulldozing, scraping, and grading activities, per SCAQMD CEQA Air Quality Handbook (1993), Table 9-9-G-1.
- Water storage piles twice a day, resulting in a 50% fugitive dust control efficiency.
- ~~Water unpaved roads twice per day, per SCAQMD's Table XI-D Mitigation Measure Examples: Fugitive Dust from Unpaved Roads (Rev. 4/2007).~~ Limit vehicle speeds on unpaved roads to 15 miles per hour, per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007).

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET ED-SCE-VIG Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 05/28/2015

Question A1-3:

Aesthetics - Valley-Ivyglen

Provide additional visual simulations for the Valley-Ivyglen Subtransmission Line Project to represent segments of the project not previously provided for the 2013 or 2014 PFM, including 115-kV Segment VIG1 and VIG4 Additionally, provide a visual simulation from the intersection of Lake Street and the southbound Lake Street off-ramp of I-15 directed south.

Response to Question A1-3:

The attached visual simulations portray an existing view and simulation of Segments 1, 4 and 5.

Google Earth Pro

miles 1
km 1

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request B

To: ENERGY DIVISION
Prepared by: Greg Hasty
Title: Transmission Estimator
Dated: 07/21/2015

Question B1:

Project Description: Valley-Ivyglen

Discuss the feasibility of undergrounding 115-kV Segment VIG2 along SR-74 from SR-74's intersection with Allan Street to SR-74's intersection with Riverside Street. Provide a description of the work that would be necessary to construct this portion of VIG2 in an underground configuration, including disturbance areas and whether encroachment into SR-74 would be necessary.

Response to Question B1:

An underground route extending along northwest side of SR-74 between Allan Street and Riverside Street would be a viable alternative for Southern California Edison. This alternative underground route would begin approximately 100 feet south of Allan Street. At this point, the overhead line would convert to underground and proceed northerly along SR-74 along the west side to Riverside Street. This alternative would require approximately 7,000 feet of duct bank, 7 to 8 vaults, and two TSP Risers. Attached is a pdf showing the approximate structure types, sizes and locations for this underground alternative.

This underground section would be installed as described in Section 2.2.3 of the PMR. This underground alternative would require encroachment permits from Caltrans. Further, SCE does not have base maps for this area providing detailed locations of existing underground utilities. Please note that the structure size, type, and locations of alternative project components may change based on any of the following: the completion of final engineering; any changes to existing field conditions and/or the identification of yet unknown field conditions; system outage constraints; as well as any constraints caused by compliance with applicable environmental and/or permitting requirements. Features depicted herein are planning level accuracy, and intended for informational purposes only. Distances and locations may be distorted at this scale.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request B

To: ENERGY DIVISION
Prepared by: Jennifer Wolf
Title: Project Manager
Dated: 07/21/2015

Received Date: 07/31/2015

Question B2:

Alternatives: Valley-Ivyglen

What is the approximate schedule for undergrounding SCE's existing 33-kV line (Terra Cotta) through the Pacific Clay Mine, west of Lake street? Would the underground alignment follow the same route as the current overhead alignment?

Response to Question B2:

The relocation of the existing 33 kV line (Terra Cotta) through Pacific Clay Mine would be a Developer relocation request. As of today, SCE has not received a relocation request. As a result, the proposed schedule and future underground alignment are unknown.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET A.09-09-022 ED-SCE-Alberhill-01

To: ENERGY DIVISION
Prepared by: Paul McCabe, P.E.
Title: Project Manager - Electric System Planning
Dated: 08/17/2016

Question 01:

Please provide both weather-normalized and actual values for recorded peak demand in 2015, and a spreadsheet showing the calculations that were used to arrive at projected peak demands for a 1-in-5 year heat storm as shown in Table 1-1 and Table 1-2 in the Draft EIR (with acknowledgement that Table 1-2 should read “1-in-5 year heat storm”, rather than “1-in-10 year”). If such a spreadsheet is not available, please provide a detailed explanation of how the projected peak demands were calculated.

2016-0816 VIG_ASP Data Request I Attachment 2.pdf

Response to Question 01:

Alberhill System Project

Table 1-1 of the Draft EIR (DEIR) provided both historical and projected data. For the historical data (2004-2014), the table only presented the recorded values and the projected values for each year. For each year of historical data where there is a projected value identified, these projected values came from the first year of the 10-year forecast from the prior year. In Table 1-1 from the DEIR, the projected peak demand values for 2015-2024 were from the 10-year forecast covering the years 2015-2024. This purpose of this table was to provide historical data and to identify the Need Date of the project. It does not provide the necessary information to see the relationships of the recorded, normal-weather adjusted, and 1-in-5 year heat storm adjusted values as requested in this data request.

Please see the attachment titled "A.09-09-022 ED-SCE-Alberhill-01 Q-01-1of2.pdf" which is an alternative representation of the data provided previous in Table 1-1 of the DEIR. It has the same data, but also includes additional values from which the relationships of the recorded, normal-weather adjusted, and 1-in-5 year heat storm adjusted values can be seen. This attachment presents historical values for the years 2004-2016 (with 2016 being treated as preliminary) and preliminary forecasted values for the years 2017-2026.

To arrive at the calculated normal-weather and 1-in-5 heat storm peak loading values, SCE's performs a regression analysis of load versus temperature to determine the expected rate of change of load due to each degree change in temperature. For the Valley South 115 kV System, for the years 2004-2012 there was an observed 1.6% change in load for each degree Fahrenheit change in temperature. Beginning in 2013, the value was revised to be 1.9% change in load for each degree change in temperature to more accurately reflect the representative value of this relationship. This is termed the "temperature sensitivity" of the substation. Each year SCE documents the peak temperature and calculates the rolling average of these annual peak temperatures (typically over 20+ years). Each year a recorded peak electrical demand value is selected and the corresponding temperature on that day. This peak demand value is then weather-normalized to reflect the expected value had the temperature on that day been equal to that of the rolling average peak temperature. The weather-normalized value is the product of the recorded peak demand value, the number of degrees in temperature differential, and the temperature sensitivity and is seen in the formula below.

Weather-Normalized Peak Demand = Recorded Peak Demand X (Temperature Differential X Temperature Sensitivity)

Once a weather-normalized value is obtained, a 1-in-5 year heat storm value is then calculated. This represents a day with a peak temperature that is 4 degrees Fahrenheit above the rolling average annual peak temperature value. As stated above, for the years 2004-2012 the temperature sensitivity was 1.6% per degree and the resulting calculation is $4°\text{F} \times 1.6\frac{\%}{°\text{F}} = 0.064\%$ (or a multiplier of 1.064). For the years after 2012, the multiplier is 1.076 is derived from the equation $4°\text{F} \times 1.9\frac{\%}{°\text{F}} = 0.076\%$.
Below is an example.

Example:		
Given:		
--Peak demand recorded of 900 MVA		
--Corresponding peak temperature of 110.9 deg F		
--Average peak temperature of 113.0 deg F		
	All Values in MVA	
Peak Demand, Recorded	900	
Multiplier	1.040	<---- = 1 + (2.1 deg X 1.9% per deg)
Peak Demand, Weather Adj.	936	
Multiplier	1.076	<---- = 1 + (4.0 deg X 1.9% per deg)
Peak Demand, 1-in-5 Heat Storm	1007	

In the attachment titled "A.09-09-022 ED-SCE-Alberhill-01 Q-01-1of2.pdf" SCE provides the data requested following the process described above. SCE has also included data for 2016 (through August 10, 2016); however, this is preliminary as there are still approximately six weeks of the summer peak loading season remaining.

Valley-Ivyglen 115 kV Line Project

SCE confirms that the Projected Peak Demand values in Table 1-2 of the DEIR are based on 1-in-5 heat storm conditions and the "1-in-10 year heat storm" was a typographical error.

The Projected Peak Demand values in Table 1-2 from the DEIR are not calculated, rather they are values that come from the power flow analysis using software from General Electric called Positive Sequence Load Flow (PSLF). This software in an industry standard software for power flow analysis which uses inputs such as: connectivity of the electric system, characteristics of the electrical system equipment (transformers, transmission lines, generators, etc), and loading at substations. Once the required inputs are entered, the software models the power flows that would occur on the actual electrical system. SCE studies both normal system conditions (all electrical facilities in-service or "base case") and also abnormal system conditions (when certain electrical facilities are out-of-service such as for planned or unplanned equipment outages). The resulting values on the transmission lines are then documented and compared to the maximum operating limits of equipment to determine if equipment ratings are exceeded. As such, SCE did not perform calculations to determine the values presented in Table 1-2 of the DEIR, rather the values are the result of the power flow analysis. Please see attachment "A.09-09-022 ED-SCE-Alberhill-01 Q-01-2of2.pdf" which is a reformatted version of Table 1-2 and provides updated values for the years 2015 and 2016 as well as additional data related to the historical loading of the existing Valley-Elsinore-Fogarty 115 kV Line.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET A.09-09-022 ED-SCE-Alberhill-01

To: ENERGY DIVISION
Prepared by: Paul McCabe, P.E.
Title: Project Manager - Electric System Planning
Dated: 08/17/2016

Question 02:

Please provide power flow data in Power World format or a format that can be read by Power World, e.g., .epc file

2016-0816 VIG_ASP Data Request I Attachment 2.pdf

Response to Question 02:

Please see the attached file titled "CONFIDENTIAL-Valley2016.epc" which is an exported file from General Electric's PSLF program and may be imported into the Power World software. Included as well is the PSLF drawing file titled "Valley2016.drw" and a file titled "ValleySouthPSLF-loads2016-2025.pdf" which contains all of the appropriate substation loads from SCE's 2016-2025 forecast for the Valley South 115 kV System. The "CONFIDENTIAL-Valley2016.epc" file can be imported in Power World and has the 2016 load values already entered. Any subsequent year may be updated and reviewed using the loads provided in the load table attachment.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET ED-SCE-ASP Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 05/28/2015

Question A1-1:

Aesthetics - Alberhill

Provide updated visual simulations for the Alberhill System project to represent 2015 existing conditions. Visual simulations may not need to be updated if the applicant can provide proof that the visual setting has not changed since the last provided visual simulation. Proof can be provided with a recent (3-4 months) photo from the exact same location that demonstrates no noticeable changes have occurred within that view.

Response to Question A1-1:

The attachment labeled *SCE-Alberhill-Photos-6-24-15_v2* includes six new photographs taken in June 2015, each paired with the corresponding existing view photograph from the 2009 PEA and 2012 Data Requests. In the set of six views, all but one appear to have no noticeable changes since the photos were taken in 2009 and 2012. Therefore only one updated visual simulations is needed to represent the 2015 conditions. The attachment labeled *Alberhill Fig 4 1-8 Sim Murrieta_7-2-15* depicts the updated simulated view of Murrieta Road, east of Calder Ranch Development.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET ED-SCE-ASP Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Tammy Yamasaki
Title: Air Quality Specialist
Dated: 05/28/2015

Question A2-1:

Air Quality and GHG - Alberhill

Provide updated air quality and GHG emissions calculations for the Alberhill System Project using CalEEMod and considering the new estimated years of construction. For sources not modeled by CalEEMod, such as helicopter, blasting, and SF6 emissions, provide emission calculations in Excel spreadsheet format indicating methods, emission factors, and assumptions. Provide CalEEMod input and output files in both Excel and PDF formats.

Response to Question A2-1:

The Air Quality and GHG emissions calculations for the Alberhill System Project have been updated to reflect the new estimated construction start year, 2016. Emissions were calculated for two potential scenarios, import and borrow pit. The emissions calculations were updated within the previously provided Excel spreadsheets, utilizing the same emission factors published by SCAQMD which the CalEEMod model also utilizes. Updates to the Excel spreadsheet are highlighted within the attachment in light blue, for ease of review.

Overall, the estimated criteria pollutant and GHG emissions are reduced, due to the assumptions built into the SCAQMD emission factors, which indicate that the fleet average heavy duty, passenger, and delivery vehicles are newer (2016 versus previously assumed 2014) and therefore less polluting. However, the reductions do not affect the Air Quality or GHG determinations of significance.

Summary - Peak Daily Construction Emissions Compared to Regional Thresholds, IMPORT SCENARIO						
	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Outdated Peak Daily Maximum (calculated April 2014)	98.96	349.59	1174.38	223.35	437.18	73.10
Revised Peak Daily Maximum (calculated June 2015)	90.55	324.00	1074.16	223.34	433.55	69.21
SCAQMD Regional Thresholds of Significance	75	550	100	150	150	55
Exceeds Threshold?	Yes	No	Yes	Yes	Yes	Yes

Summary - Peak Daily Construction Emissions Compared to Regional Thresholds, BORROW SITE SCENARIO						
	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Outdated Peak Daily Maximum (calculated April 2014)	102.47	363.44	1190.41	223.35	449.53	79.72
Revised Peak Daily Maximum (calculated June 2015)	94.05	337.99	1090.28	223.35	445.29	75.82
SCAQMD Regional Thresholds of Significance	75	550	100	150	150	55
Exceeds Threshold?	Yes	No	Yes	Yes	Yes	Yes

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET ED-SCE-ASP Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Sara Bholat
Title: Senior Archaeologist
Dated: 05/28/2015

Question A3-1:

Cultural Resources - Alberhill

Provide an updated records search at the Eastern Information Center at University of California, Riverside for all project elements.

Response to Question A3-1:

SCE conducted a records search at the Eastern Information Center on June 17, 18, and 23. The results of the records search information was mailed to the CPUC's consulting archaeologist's, Tim Gross with E&E, home address via UPS on July 13th, 2015. The deliverables include a letter report summarizing the findings, an excel spread sheet listing all resources within the ¼ mile records search buffer, Department of Park and Recreation (DPR) records for 191 resources, USGS topographic maps showing site locations at 1:24000 scale, and aerial maps showing site locations at 1:5000 scale. In addition, geodatabase with resource and survey coverage was provided.

The cover letter and the UPS shipping label is attached.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET ED-SCE-ASP Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Sara Bholat
Title: Senior Archaeologist
Dated: 05/28/2015

Question A3-2:

Cultural Resources - Alberhill

Provide an updated contact list of local tribal representatives from the Native American Heritage Commission.

Response to Question A3-2:

On behalf of SCE, SWCA Environmental Consultants, submitted a letter to the Native American Heritage Commission (NAHC) on June 19th, 2015 requesting a list of local tribal representatives identified to be associated with the regions within which SCE projects are proposed. NAHC has not responded to the request to date. The request letter along with maps of the project area is attached. SCE will submit the response letter from NAHC once it is received.

SCE Archaeologist Sara Bholat spoke with CPUC's consulting Archaeologist, Tim Gross from E&E, on July 7th, 2015 regarding the NAHC's delayed response to SCE's request. Mr. Gross agrees to let SCE submit the NAHC response letter when it is received.

SWCA Environmental Consultants received the NAHC letter response on July 22, 2015 via facsimile. The letter is attached with a list of local tribal representatives.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET ED-SCE-ASP Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Sara Bholat
Title: Senior Archaeolgist
Dated: 05/28/2015

Question A3-3:

Cultural Resources - Alberhill

Provide an updated query of the NAHC Sacred Lands Inventory File.

Response to Question A3-3:

On behalf of SCE, SWCA Environmental Consultants, submitted a letter to the Native American Heritage Commission (NAHC) on June 19th, 2015 requesting search of the Scared Lands Inventory File. NAHC has not responded to the request to date. The request letter along with maps of the project area is attached. SCE will submit the response letter from NAHC once it is received.

SCE Archaeologist Sara Bholat spoke with CPUC's consulting Archaeologist, Tim Gross from E&E, on July 7th, 2015 regarding the NAHC's delayed response to SCE's request. Mr. Gross agrees to let SCE submit the NAHC response letter when it is received.

SWCA Environmental Consultants received the NAHC letter response on July 22, 2015 via facsimile. The search of the Sacred Land Inventory File did not identify sacred lands within the immediate project area. The NAHC response letter is attached.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET ED-SCE-ASP Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Sara Bholat
Title: Senior Archaeologist
Dated: 05/28/2015

Question A3-4:

Cultural Resources - Alberhill

Provide GIS data that shows areas surveyed for cultural resources. Metadata should indicate the level of survey and the date of survey.

Response to Question A3-4:

The GIS data showing areas surveyed for cultural resources is included in the geodatabase. The geodatabase, along with the records search results were mailed to the CPUC's consulting archaeologist's, Tim Gross with E&E, home address via UPS on July 13th, 2015.

The cover letter and the UPS shipping label is attached.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/25/2013

Question 02:

Question: 1.16.2.2

Confirm (and provide documentation) that the USFWS and CDFW (formerly CDFG) have both signed off on the final SKR take agreement (signed by the RCHCA in October 2012). The USFWS and CDFW letters provided are dated in May and June 2012, prior to the date that the final SKR take agreement was completed and submitted to the RCHCA.

Response to Question 02:

Both the USFWS and CDFW sent letters in May and June 2012, in support of the Agreement regarding incidental take authorization for SKR between the RCHCA and SCE; these letters became part of the Agreement (Exhibits C and D). The Agreement was then approved by the RCHCA Board at the next regularly scheduled meeting in September 2012, and signed by both signatories (SCE and RCHCA) in October 2012. The Agreement did not change between May 2012 and October 2012.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Jennifer Wolf
Title: Project Manager
Dated: 01/25/2013

Question 06:

Question: 14.12.3

Discuss SCE's current plans and timing for next steps associated with construction of the Valley–Ivyglen 115-kV Subtransmission Line and Fogarty Substation Project.

Response to Question 06:

SCE will be filing a Petition For Modification (PFM) to construct the Valley-Ivyglen 115 kV Subtransmission Line Project and to complete the construction of the Fogarty Substation Project. For the Valley-Ivyglen Project, specifically as it relates to the Alberhill System Project, SCE's PFM will include requests to increase the pole heights, spans, counts and types of poles, route alignment modifications, modification to the access road description and undergrounding portions of the telecommunication cables. SCE anticipates the PFM to be filed in late March/mid-April 2013. Construction is anticipated to commence in Q3 2014 and complete in Q4 2015.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Wendy Worthey
Title: Biologist
Dated: 01/25/2013

Question 10:

Question: 14.13.3

Provide documentation that confirms the RCHCA will approve access to towers within the Core Reserve for grounding and wire snubbing.

Response to Question 10:

Brian Shomo (RCHCA) has requested to review the joint USFWS/CDFW letter before preparing his own letter. The joint letter is expected the week of February 11 followed by RCHCA's letter the week of February 18. Should these expected dates change, SCE will notify the CPUC as soon as possible.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Jennifer Wolf
Title: Project Manager
Dated: 01/25/2013

Question 07:

Question: 14.12.4

1. It was unclear after the CPUC's 12/21/12 meeting with SCE how Castle & Cooke permitting relates to SCE permitting. Discuss the relationship of Castle & Cooke permitting to SCE permitting for work on Castle & Cooke land for Alberhill System Project 115-kV Segment 2 (along Lake Street; see attached figure).
2. Clarify how Castle & Cooke permitting for SKR take would or could apply to SCE SKR take permitting.
3. Provide further timing details about Castle & Cooke's permitting schedule for areas along Alberhill System

14.12.4 Attachment 115-kV Segments_Draft.jpg

Response to Question 07:

1. Per the Valley-Ivyglen Final EIR dated May 2010, the approved route, Alternative 5, locates the Valley-Ivyglen line and portions of the existing Fogarty-Ivyglen (formerly Valley-Elsinore-Ivyglen) line, in the proposed Castle & Cooke trail and utility corridor along Lake Street from Nichols Road (formerly Coal Avenue) to just south of the I-15. The trail and utility corridor is part of a yet to be built master-planned community that Castle & Cooke is developing south of I-15. This corridor has not yet been constructed by Castle & Cooke. SCE has been coordinating with Castle & Cooke to ensure the VIG design works with their street improvement plans. Currently, Castle & Cooke has applied for the 402, 404 and 1602 permits required for the construction of the corridor. The corridor is anticipated to be completed no later than Nov 1, 2014. SCE anticipates starting construction of the work adjacent to the Castle & Cooke properties (Nichols Road and Lake Street) in mid-Nov 2014.

2. SCE will be applying for SKR take using the RCHCA approved process for SCE.

3. Castle & Cooke has stated permits for the Lake Street utility corridor would be approved in June 2013. SCE is monitoring the permit process closely to ensure the corridor is completed prior to the construction start date for the VIG segment on Lake Street (Nov 2014).

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/25/2013

Question 09:

Question: 14.13.2

Confirm that work within the Core Reserve would only occur during daylight hours and that no work would occur within 30 minutes of sunset or 30 minutes of sunrise within the Core Reserve including work that requires the use of vehicles or equipment that may be partially located within the Core Reserve except during emergency conditions.

Response to Question 09:

SCE confirms that work within the Core Reserve would only occur during daylight hours and that no work would occur within 30 minutes of sunset or 30 minutes of sunrise within the Core Reserve including work that requires the use of vehicles or equipment that may be partially located within the Core Reserve except during emergency conditions.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request B

To: ENERGY DIVISION
Prepared by: Tammy Yamasaki
Title: Air Quality Specialist
Dated: 07/21/2015

Question A2.1:

Air Quality and GHG: Alberhill

Tables 26 and 29 of the Air Quality and GHG emissions calculations for the Alberhill System Project include helicopter emission factors (Kaman K-Max model during 500-kV Tower Foundation and Sikorsky S64 during 500-kV Tower Erection). During verification of the Construction Equipment Exhaust Emission Factors for 500-kV Tower Erection, it was noted that the Guidance on the Determination of Helicopter Emissions (2009) does not provide specific factors for the Sikorsky S64 model. Describe the assumptions made for estimating emission factors for the Sikorsky S64 helicopter model.

Response to Question A2.1:

Since there is not a fuel burn rate (kg/hr) specific to the Sikorsky S64 model helicopter in the *Federal Office of Civil Aviation FOCA's Guidance on the Determination of Helicopter Emissions* document, a typical methodology would include utilizing emission factors and data for a similarly capable, twin engine heavy-lift helicopter with available data. Unfortunately, the footnotes on Table 29 do not specify exactly how the burn rate was derived, and the original author of the calculations is no longer available.

In order to determine whether the utilized methodology in the PEA is reasonable, by utilizing the fuel burn rate of the next largest twin engine heavy-lift helicopters with available data, we are able to confirm that estimated emission factors derived for the Sikorsky S64 are within a 10% margin of error.

Specifically, utilizing NOx as an example, the Sikorsky S65 in Table 7 of the *Guidance on the Determination of Helicopter Emissions* document has a max shaft horsepower (SHP) of 3,925 per engine. The referenced one hour fuel burn rate for NOx is 17.27 kg/hour. Comparatively, the Sikorsky S64 has a max SHP of 4,500 per engine. Assuming a direct correlation between horsepower and fuel burn rate, the Sikorsky S64 would be derived to have an approximate burn rate of 19.8 kg/hour (17.27 x 4500/3925 = 19.8).

Equation to determine NOx emission factor from fuel use:

NOx emissions [lb/hr] = fuel use [kg/hr] x 1000 [g/kg] / 453.6 [g/lb]

Current Calculation as presented in Alberhill AQ Appendix (Table 29, cell E29):

NOx emissions [lb/hr] = ***21.3425352286001*** *[kg/hr] x 1000 [g/kg] / 453.6 [g/lb] =* ***47.051 lb/hr***

Example/Recreated Calculation:

NOx emissions [lb/hr] = ***19.8*** *[kg/hr] x 1000 [g/kg] / 453.6 [g/lb] =* ***43.651 lb/hr***

47.051 – 43.651 = 3.4 difference (~7% difference)

Therefore, we think that the current emission factors are reasonable and sufficient to provide an estimate of anticipated Sikorsky S64 emissions for CEQA purposes.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request B

To: ENERGY DIVISION
Prepared by: Wendy Worthey
Title: Biologist
Dated: 07/21/2015

Question B3-a:

Biological Resources: Alberhill

Confirm that SCE easements on Castle and Cooke land will be subject to the MSHCP and provide documentation of agreement with Castle and Cooke and RCA. If no such agreement exists, clarify when one will be finalized or how take of T&E species will be obtained for Castle and Cooke lands that are not subject to the MSHCP.

Response to Question B3-a:

SCE is coordinating with the Regional Conservation Authority (RCA) to obtain incidental take authorization (take) through the Multiple Species Habitat Conservation Plan (MSHCP) Participating Special Entity (PSE) process for the entire Valley-Ivyglen Phase 2 Project (Project). RCA has confirmed that take may be conveyed to SCE in their easements on Castle and Cooke lands exempt from the MSHCP. However, in the event that SCE is unable to participate in the MSHCP for any portion of the Project and must instead choose an alternative mechanism for take, the VIG Petition for Modification, Attachment B, included proposed revisions to the mitigation measures that would be consistent with either using the MSHCP or using a non-MSHCP mechanism for obtaining take.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request B

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 07/21/2015

Question B4.1:

Hydrology and Water Quality and Utilities/ Service System: Alberhill

Given the ongoing drought conditions in the project region, provide any update regarding the source(s) of water for construction and operation phases of the Alberhill System Project and Valley–Ivyglen Project. Provide recent confirmation of water availability from the district(s) that would provide water.

Response to Question B4.1:

Since responding to Data Request 7.12.1, SCE has determined that the estimated amount of water required during construction activities is 61 acre-feet. A water source during the construction phase has not been identified at this time. During operation, water will be provided by the local purveyor or onsite wells.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request F

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 09/01/2015

Question 01(F1):

SCE's response to Question B4.1 stated that a water source has not been identified for the 61 acre-feet of water required during construction of the Alberhill System Project. A specific source is also not provided for operation other than a local purveyor or onsite wells.

Please provide more detail:
A. Identify a potential source or potential sources of water for construction and assurance that the source(s) can provide water for construction.
B. Describe how water would be delivered to the project site for construction (e.g., through existing infrastructure or through trucks).
C. Identify the location of onsite wells that would be used to provide water during operation or identify a local purveyor that would provide water during operation as well as assurance that the well(s) or purveyor can provide water for operation.
D. Describe how water would be delivered to the project site for operation (e.g., through existing infrastructure or through trucks). If water would be trucked, provide detail about truck trips (i.e., number of trucks, distance of average trip).

Response to Question 01(F1):

A. Listed below are three potential water purveyors that are located in the project area. Prior to construction of the 115 kV line, SCE will submit applications for temporary floating meters to connect to District fire hydrants to draw water for temporary construction needs.

   a. Eastern Municipal Water District (EMWD)
      i. EMWD has four existing sources of water supply: imported water from MWD, recycled water, local groundwater production and desalted groundwater. Imported water from MWD is either delivered directly as potable water, delivered to EMWD as raw water and then treated at two local filtration plants owned and operated by EMWD or delivered to EMWD as raw water for non-potable use. (http://www.emwd.org/home/showdocument?id=1506)

   b. Elsinore Valley Municipal Water District (EVMWD)
      i. EVMWD's water supply is a blend of local groundwater, surface water from Railroad Canyon Reservoir (Canyon Lake), and imported water. On average, half their supply is imported. Annual water production in the Elsinore Division is

about 27,000 acre-feet.
http://www.evmwd.com/depts/engineering/water_quality/water_sources.asp

ii. Per discussions with EVMWD, SCE will have access to non-potable water during construction of the Alberhill Substation and 500 kV line.

c. Temescal Valley Water District (TVWD)/ Lee Lake Water District (LLWD)

i. TVWD receives all of its water supply from the Metropolitan Water District via the Mills Pipeline. The Mills Pipeline serves other communities besides those served by Temescal Valley Water District including part of the City of Corona, Eagle Valley Area and other areas within the unincorporated Riverside County. All water delivered to Temescal Valley Water District is imported from Northern California via the State Water Project system. Once transferred to Southern California, the imported water is provided full water treatment at the Mills Water Filtration Plant located on Alessandro Boulevard.

B. Water trucks would fill up as needed along the 115 kV route at various approved District fire hydrants by connecting a temporary floating meter. During construction of the Alberhill Substation, a single-source meter would be established and a stand tank would be delivered to the site. Construction of the 500 kV component would utilize the water source at Alberhill Substation.

C. EVMWD can provide water to Alberhill Substation during operation.

D. SCE would connect to EVMWD's potable water system located within Temescal Canyon Road for water use during operation of the Alberhill Substation.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 09/10/2015

Question 02(G3):

In Section 2.4.1, SCE increased the maximum number of Alberhill System Project Workers from 145 to 200 workers per day. Provide the following in order to define the scope of traffic study revisions:

A. Of the 200 workers per day, state the number of workers that would be located at the substation site and the number of workers assigned to work on the 115-kV or 500-kV lines.

B. State the rationale for increasing the maximum workers per day from 145 to 200.

Response to Question 02(G3):

A. SCE estimates that 100 workers would located at the Alberhill Substation site, 50 workers would work on the 115 kV subtransmission line, and 50 workers would work on the 500 kV transmission line.

B. The amount of personnel for all three components would fluctuate depending on the construction stage, location, and season; however, SCE conservatively estimates that a maximum of 200 workers per day would be onsite during construction. The increase from 145 to 200 is to increase production by allowing additional personnel to complete the work as time permits.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Thanos Trezos
Title: Project Engineer
Dated: 09/10/2015

Question 03(G4):

In Section 2.3.2.1, SCE revised the description of the substation perimeter wall to state that the wall would be at least 8 feet tall.

A. State the maximum height of the substation perimeter wall.

Response to Question 03(G4):

SCE is monitoring the evolving industry security standards as they are being established by the North American Electric Reliability Corporation (NERC) for Critical Infrastructure Protection (CIP).

If triggered by NERC/CIP 14, the Alberhill Substation may be subject to enhanced security requirements that are stricter than those that currently apply. SCE will follow the then-current standards during the final engineering design process for the substation.

Due to the uncertainty of which physical security standards will be applicable during the facility's final engineering design process, the final wall height requirement cannot be known with certainty today. SCE anticipates the height of the substation perimeter wall to be no less than 8 feet and no more than 14 feet. In addition, a "top guard" (e.g., barbed wire or spike strips) may also be required.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 09/10/2015

Question 04(G6):

In Table 2-6, SCE revised the potential impacts for access roads to account for 3 miles of 500-foot-wide access roads for the 500-kV transmission lines. The associated footnote states that the additional disturbance is required for vehicle turnaround areas, and that permanent disturbance areas would be up to 200 feet wide and temporary disturbance areas would be up to 500 feet wide. This additional disturbance more than triples the total disturbance area for the Alberhill project, and would contribute to impacts to biological, aesthetic, traffic and air quality resources. Some of these impacts may be significant under CEQA, given the amount of earthwork that would be required to accommodate a graded area of 3 miles by 500 feet wide in hilly terrain.

A. Revisit whether this is a reasonable estimate of work that would occur for access road construction for the 500-kV transmission lines.

B. If SCE finds that this is a reasonable estimate of access road disturbance, provide a GIS layer showing the extent of the planned disturbance area for 500-kV line access roads.

Note that if SCE states this is a reasonable estimate for access road disturbance, additional data requests will follow to, at a minimum, obtain information related to air quality, traffic, and aesthetic impacts.

Response to Question 04(G6):

A. SCE reviewed the access road disturbance acreage provided in the Draft DEIR Project Description comments and determined the estimate to be excessive. The temporary land disturbance acreage for access roads identified in Table 2-6 has been revised to reflect a more reasonable estimate for temporary disturbance during conventional construction.

The Draft DEIR Project Description also mentions the possibility of utilizing helicopters for construction of the 500 kV transmission line. SCE would like to include additional language to these sections to allow SCE to utilize the conventional method or a combination of the conventional method and helicopters during construction of the 500 kV transmission line. Attached are the following:

- An underline/~~strikethrough~~ version of the DEIR Project Description sections related to helicopter construction.

- A kmz showing the potential locations of helicopter platforms
- A photo of a helicopter platform
- Revised air quality calculations

SCE discussed the use of helicopters with the Regional Conservation Authority (RCA) and Wildlife Agencies (U.S. Fish and Wildlife Service and CA Dept. of Fish and Wildlife) on 10/15/15. The RCA and Wildlife Agencies stated they are fine with the use of helicopters for construction of the 500 kV transmission line and appreciate the "less access roads" approach. They don't think that helicopters would affect the Stephens' kangaroo rat (SKR) unless the helicopter pads were being constructed in the Core Reserve where SKR have been found. As depicted in the attached kmz, SCE does not propose to construct helicopter pads within the Core Reserve and SKR are not present in the areas of the Core Reserve that the Project crews would be accessing. Per Karin Cleary Rose (USFWS), if the work activities occurring within the Core Reserve associated with the 500 kV transmission line have not changed, the attached letter from the Wildlife Agencies still applies. Take for SKR in all other areas of the Alberhill Project will be finalized prior to construction pursuant to an Agreement with the Riverside County Habitat Conservation Agency.

Specific to nesting birds, the Wildlife Agencies would prefer that helicopter use occur outside the bird nesting season. They are aware of golden eagle occurring in the area. However, this doesn't mean that the Wildlife Agencies are requiring all helicopter use occur outside nesting season. They will formally address nesting bird issues and helicopter use during their review of the PSE application, DEIR, and nesting bird management plan.

B. See response to A.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request H

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 11/19/2015

Question 01(H1):

CPUC has identified a potential alternative for the Alberhill System Project. Under this alternative, the Alberhill System Project would be built and operated as proposed, except:

- The Alberhill Substation would be constructed in the area covered by Riverside County Specific Plan No. 353 (see Attachment 2).
- 115-kV segments 1 and 1.5 would not be built as proposed.
- Instead of crossing I-15, 115-kV Segment ASP2 would be constructed aboveground along the path of 115-kV Segments VIG 6 and VIG7. 115-kV Segment ASP2 would be placed below ground with 115-kV Segment VIG8. 115- kV Segment ASP2 would transition to an aboveground power line and would be constructed to follow the planned extension of Temescal Canyon Road, as proposed in Specific Plan No. 353, to the Alberhill Substation site.
- The 500-kV transmission lines would extend from the Alberhill Substation directly north to tie into the existing Serrano–Valley 500-kV transmission line.

A conceptual map is provided in Attachment 3 that shows this alternative to the extent it varies from the proposed project.
State and substantiate whether this potential alternative would be feasible from a technical and legal perspective with regards to:

- Substation location, which is farther away from load in the Electrical Needs Area
- 500-kV Serrano –Valley 500-kV transmission line tie-in location
- Longer 115-kV subtransmission line
- Any other constraints that would affect the feasibility of this potential alternative

Response to Question 01(H1):

SCE performed a high-level, desktop analysis of the potential alternative substation location, 500 kV tie-in location and 115 kV subtransmission lines. The potential alternative is not preferred for the reasons described in the following opportunities and constraints analysis.

Electrical Needs Area

The Substation Target Area, identified in Figure 1.1 of the PEA, was determined by analyzing a set of boundaries within which the placement of a new substation would most effectively and efficiently serve the Electrical Needs Area (ENA). The Substation Target Area was developed using the following basic requirements:

- The substation site should be in proximity to the Serrano-Valley 500 kV Transmission Line to facilitate connection of the new substation to SCE's existing 500 kV transmission system
- The substation site should be in proximity to existing 115 kV subtransmission lines to facilitate the transfer of existing 115/12 kV substations from the Valley South 115 kV System to the new Alberhill System
- The substation site should be in proximity to planned development along the I-15 corridor to facilitate service of additional 115 kV substations, should it become required in the future.

The alternative substation site is located outside the Substation Target Area. Locating Alberhill Substation within the Substation Target Area would locate an electrical source substation near the electrical demand, which would reduce losses, reduce voltage drop, and have a higher likelihood of shorter length 115 kV subtransmission lines in the futures, as they become necessary. The proposed substation site, as compared to the potential alternative substation site, is closer to the electrical demand being considered to be transferred to the new electrical system.

Community

There is an existing, organized group that is very likely to actively intervene in the siting of a substation and associated project components in this location. "We Are Temescal Valley" is a local community group that is extremely active in the region; they take positions on many area projects and meet on a regular basis. The group is the local watchdog for the community – not afraid to tackle any project they deem incompatible with community standards.

Additional information can be found at: http://www.wearetv.org/

Their Facebook group currently has over 1,800 members and has posts on a daily basis on all community issues. They also partner with the Temescal Valley Municipal Advisory Council, an advisory group to Riverside County Supervisor Kevin Jeffries. Their Facebook group can be found at: https://www.facebook.com/groups/682232085156639/

Substation

The potential alternative substation is assumed to have a footprint of approximately 40-50 acres to accommodate an open-air substation design and the ultimate layout. The ultimate substation layout includes four 500 kV transmission lines, one generation interconnection tie-line, and (12) 115 kV subtransmission lines.

Opportunities:

- The potential alternative site location would accommodate enough space for ultimate substation configuration
- Erosion potential is considered low. The potential alternative site is located in a flood hazard zone X (Areas determined to be outside the 0.2% annual chance floodplain). No documented landslides or slope stability hazards were identified at the site based on

desktop review. The substation site is underlain by very old fan deposits (Qvof, moderately to well consolidated silt, sand, gravel and conglomerate), Silverado Formation (Tsi, sandstone, siltstone and conglomerate), and undifferentiated metamorphic rocks of sedimentary and volcanic origin. Based on mapped geologic units at the site, liquefiable soils are not present at the substation site. The substation site is not located in an Alquist-Priolo Earthquake Fault Zone. Potential for surface fault rupture at the site is considered low. The nearest AP zone for the Elsinore Fault is approximately 0.8 mile southwest of the site.

Constraints:

- The potential alternative site location is at the furthest reaches of the ENA and butted up against a system of a different voltage (Mira Loma 220/66 kV System). There is only one way to exit the substation site to accommodate the 115 kV subtransmission line connections, which is a significant issue as further explained under the subtransmission section of this response.
- There is only one way to exit the substation site to accommodate the 500 kV transmission line connection.
- The potential alternative substation site location is adjacent to the Temescal Wash, which is part of an existing constrained wildlife movement corridor that follows the MSHCP Proposed Extension of Existing Core 2. Conservation land was proposed and accepted as part of the approved Serrano Commerce Center Specific Plan. Bank protection may be required to stabilize-proposed slopes along Temescal Wash in this approved existing conservation land. If bank protection is required, the potential alternative substation site would not be able to avoid impacts to the existing conservation land. Not only is this area described for conservation, it also contains riparian/riverine habitat that is very limited in this area of Riverside County, therefore highly protected. Obtaining permits and other approvals for impacts to riparian/riverine that is also within the MSHCP Proposed Extension of Existing Core 2, and where SCE does not currently have existing facilities, would be complicated and highly improbable.-
- The potential alternative substation site location has been previously surveyed (2004) for cultural resources with no resources present. However, there are prehistoric sites in the area including California Historic Landmark (CHL)#187 (a boulder outcropping with petroglyphs). According to oral tradition this is the location of where a chief died and the petroglyphs depict his portrait, his signs, his plumes and his animals sacred to him. In addition there is a milling slick recorded with the site. This site is located in the vicinity of the substation parcel. The area in general is sensitive for tribal concerns.
- SCE was not able to speak directly with the owner, BBG KRG Inc.; however, a response from the developer who worked with BBG KRG on entitlements indicated they were not interested in selling portions of the development to accommodate a substation and added that BBG KRG rarely sells property to other developers.
- The potential alternative substation site is located within an approved Specific Plan; therefore, it is likely that acquisition costs would be higher to accommodate for the cost of the entitlement. Based on a desktop review, SCE estimates that acquisitions costs

would be approximately $8-$10/square foot for unentitled land and $12-$15/square foot for entitled land.

Transmission

Two potential alternative 500 kV Transmission Line routes would exit the substation northerly toward the existing Valley-Serrano 500 kV Transmission Line. Each line is estimated to be approximately 1,500 to 1,800 feet.

Opportunities:

- Overhead construction appears to be feasible
- The potential alternative 500 kV transmission Line route was partially surveyed by Stephan Bouscaren in 1985 “An Archaeological Assessment of the Proposed Valley-Serrano 500kV Transmission Line Corridor”, this survey did not record any resources within the proposed project area. The proposed line route was also surveyed by Drover in 1988 as part of “An Archaeological Assessment of the Proposed Temescal Wash Sand and Gravel Mining Operation”. No cultural resources were recorded within the project area as part of this survey. The 500kV line route has an active wash which runs through the southern portion, portions of the alignment cross developed areas, the nature of the topography and the previous negative studies indicate that there is a low potential for encountering cultural resources in this alignment.
- No documented landslides or slope stability hazards were identified along the potential 500 kV transmission Line route based on desktop review. The segment is not located in an Alquist-Priolo Earthquake Fault Zone. Potential for surface fault rupture along the potential alternative 500 kV transmission Line route is considered low. The nearest AP zone for the Elsinore Fault is approximately one mile southwest of the segment. The potential alternative 500 kV transmission Line route spans flood hazard zone X (Areas determined to be outside the 0.2% annual chance floodplain), and Flood Hazard Zone AE (special flood hazard areas subject to inundation by the 1% annual flood chance). Flood potential is low for structures placed in Flood Hazard Zone X. Liquefaction potential is low for structures placed in Flood Hazard Zone X. Erosion potential is low for structures placed in Flood Hazard Zone X.

Constraints:

- There is an existing constrained wildlife movement corridor that follows the MSHCP Proposed Extension of Existing Core 2, along Temescal Wash. The Serrano Commerce Center Specific Plan development proposed additional land for conservation in this area adjacent to the Proposed Extension of Existing Core 2. The alternative 500 kV line would traverse Temescal Wash north of the alternative substation location. It is not known if there are other drainage features that are associated with or flow into Temescal Wash. If any impacts to the Wash or other drainage features occur, this would require an assessment of these drainage features' functions and values as related to their connectivity to the Conservation Land and Temescal Wash. If impacted, a mitigation plan in the form of a Determination of Biological Equivalent or Superior Preservation (DBESP) would be

required.

- Based on desktop data, the potential alternative 500 kV Transmission Line route would need approximately 1/4 mile of new access roads in mountainous terrain and slopes steeper than 10%. New access roads for maintenance and operations would meander around the mountains and cross waterways. Avoiding existing washes may not be possible for all access road and tower locations.
- The potential 500 kV Transmission Line route spans flood hazard zone X (Areas determined to be outside the 0.2% annual chance floodplain), and Flood Hazard Zone AE (special flood hazard areas subject to inundation by the 1% annual flood chance). Liquefaction potential is moderate for structures placed in Flood Hazard Zone AE (Temescal Creek). Flood potential is high for structures placed in the Flood Hazard Zone AE (Temescal Creek). Erosion potential is high for structures placed in the Flood Hazard Zone AE (Temescal Creek).

Subtransmission

Five potential alternative 115 kV subtransmission lines on three double-circuit pole lines would exit the substation southerly toward Temescal Canyon Road. To accommodate the three pole lines, an approximately 200-foot corridor would be required for approximately one mile, between the alternative substation site and Temescal Canyon Road. Once at Temescal Canyon Road, two subtransmission lines would connect to the existing Fogarty-Ivyglen 115 kV subtransmission line creating the Alberhill-Ivyglen #1 115 kV Subtransmission Line and the Alberhill-Newcomb-Valley 115 kV Subtransmission Line and three subtransmission lines would connect to the proposed Valley-Ivyglen 115 kV Subtransmission Line, creating the Alberhill-Ivyglen #2 115 kV Subtransmission Line, the Alberhill-Fogarty 115 kV Subtransmission Line, and the Alberhill-Skylark 115 kV Subtransmission Line.

Opportunities:

- Elimination of one I-15 freeway crossing at Hostettler Road and Temescal Canyon Road.
- Erosion potential is considered low. The potential alternative 115 kV subtransmission line route is located in a flood hazard zone X (Areas determined to be outside the 0.2% annual chance floodplain). No documented landslides or slope stability hazards were identified along the segment based on desktop review. The potential alternative 115 kV subtransmission line route is underlain by very old fan deposits (Qvof, moderately to well consolidated silt, sand, gravel and conglomerate) and Silverado Formation (Tsi, sandstone, siltstone and conglomerate). Based on mapped geologic units along the segment, liquefiable soils are not present along the segment. The potential alternative 115 kV subtransmission line route is not located in an Alquist-Priolo Earthquake Fault Zone. Potential for surface fault rupture along the segment is considered low. The nearest AP zone for the Elsinore Fault is approximately 0.8 mile southwest of the segment.

Constraints:

- No diversity in the potential alternative 115 kV subtransmission line routes. All proposed and future subtransmission lines would have to travel in the same or similar

path/corridor. This would adversely impact future expansion and operational flexibility and increases the potential of singular events (e.g., fire, mudslide, airplane crash) to cause multiple 115 kV subtransmission line outages which would result in significant loss of electrical service, and possibly result in lengthy outages until the corridor could be restored.

- Would require between 2 to 4 miles* of pole replacements along the existing Fogarty-Ivyglen 115 kV Subtransmission Line to accommodate a double-circuit configuration whereas, the Proposed Project Segment 1.5 is only approximately 0.5 mile in length.

  *The 115 kV subtransmission lines could be designed in the following two ways: a) The proposed underground Segment VIG8 would contain two subtransmission lines; or b) the existing Fogarty-Ivyglen 115 kV Subtransmission Line would be converted to a double-circuit pole line.

- In order to accommodate a third circuit, a pole line on both sides for Temescal Canyon Road at Indian Truck Trail for approximately 2,000 feet would be required. Alternatively, the proposed Segment VIG8 underground route would need to be extended approximately 2,000 feet south of Indian Truck Trail.

- Based on desktop data, there are existing roads in the vicinity. However, it is anticipated new roads would be needed to access the 115 kV subtransmission line until the proposed extension of Temescal Canyon Road is constructed. No new access roads are required for SCE's proposed 115 kV subtransmission line segments

- Most of the alternative 115 kV alignment is located west of a major water body, the Temescal Wash, part of the MSHCP Proposed Extension of Existing Core 2. However, in the southern portion, the 115 kV line could impact a tributary to Temescal Wash. Associated with the Temescal Wash and its tributaries, both from existing and historic mapping, are comprised of a vegetation/habitat type referred to as Riversidean Alluvial Fan Sage Scrub (RAFSS). RAFSS is located in the southern area of the alternative 115 kV alignment. This vegetation/habitat type is considered highly sensitive and requires mitigation (equivalent or superior replacement) at a higher than average ratio. The potential alternative 115 kV subtransmission lines would require three pole lines and an access road; therefore, it is unlikely that RAFSS can be spanned in this area and would have a greater impact to RAFSS than the proposed 115 kV subtransmission line segments

- The area was previously surveyed for cultural resources in 2004 and there was one resource, a prehistoric milling site (P33-013625) recorded within the proposed 115kV alignment. There are 10 previously recorded resources within a quarter mile of the line route. One of which is CHL#187, which is discussed in more detail in the Substation constraints section above.

- The potential alternative 115 kV subtransmission line route would have greater impacts to aesthetics as the alternative substation location would necessitate a longer utility corridor to tie into the existing 115 kV subtransmission lines.

- The potential alternative 115 kV subtransmission line route would have greater impacts to traffic as a longer portion of the existing Fogarty-Ivyglen 115 kV Subtransmission

Line would require pole replacements, requiring an extended construction period and lane and/or road closures.

- The potential alternative 115 kV subtransmission line route would be located within Specific Plan 353 and would impact the future development of the Plan as described.

IT/Telecomm

The potential alternative fiber optic route would follow the 115 kV subtransmission line routes.

Opportunities:

- None identified

Constraints:

- Based on the desktop study conducted, it is unclear if the potential alternative substation site has a clear line-of-sight to existing or potential telecommunications sites, but it appears likely there may not be a clear line-of-sight to Santiago Peak. The potential alternative site is private property and not directly accessible without arrangements with the property owner, the physical site survey has not been conducted.
- A desktop study was completed to evaluate an alternate, existing, telecommunications called Johnstone Peak Communication Site, located in the Angeles National Forest. There may be a possible line-of-sight from the potential alternative Alberhill site to Johnstone Peak Communication Site, and it requires a physical site survey to verify if clear line-of-sight can be established between the two locations. And if this alternate option is viable and pursued, it will require the installation of a new 185 foot tall tower at Johnstone Peak Communication Site, whereas, the proposed Project would require installation of microwave equipment on an existing tower at Santiago Peak. It may also require purchasing or leasing additional area at Johnstone Peak Communication Site.
- If a new 185-foot tower would need to be installed at Johnstone Peak, the potential alternative would have a greater impact to aesthetics as the new tower would be significantly taller than the existing tower at Johnstone peak which is approximately 70 feet tall.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request J

To: ENERGY DIVISION
Prepared by: Paul McCabe, P.E.
Title: Project Manager - Electric System Planning
Dated: 10/26/2016

Question J1:

Please provide updated power flow data that includes the Valley South 115-kV Transmission Project in PowerWorld format

Response to Question J1:

Please find the attached confidential file that provides the Valley South 115 kV System as of 2021. This file assumes the Valley South Subtransmission Project (VSSP) 115 kV line is constructed and in-service. Though the VSSP project is projected to be in-service *after* both the Valley-Ivyglen and Alberhill System Projects, SCE assumes that the CPUC was interested in what, if any, the impact of the VSSP line would have as it relates to the need for the Alberhill System Project, so the file does not include the assumed completion of the Valley-Ivyglen Project or the Alberhill System Project.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-ED-SCE-Data Request J

To: ENERGY DIVISION
Prepared by: Paul McCabe, P.E.
Title: Project Manager - Electric System Planning
Dated: 10/26/2016

Question J2:

Please explain whether it would be feasible to add an additional transformer at the Valley - Substation to achieve the necessary reliability improvements set forth in the Alberhill/Valley-Ivyglen project objectives. If it's not feasible, provide a detailed rationale.

Response to Question J2:

The addition of a third load-serving 560 MVA 500/115 kV transformer to the Valley South 115 kV System (and the sixth located at Valley Substation) is likely feasible from the perspective of physical space requirements alone; however, the addition is not feasible due to the following reasons: (1) results in short-circuit current values that exceed SCE criteria; (2) only satisfies the short-term electrical demand needs of the area; (3) does not increase system operational flexibility; and (4) decreases the reliability of the electrical system serving it by making it more prone to induction-motor stalling events.

Consideration of installing an additional 560 MVA 500/115 kV transformer must include the following analysis to determine feasibility.

- Physical space to locate all required equipment
- Connection to 500 kV switchrack
- Connection to 115 kV switchrack
- Impact to reliability of serving 1,680 MVA of electrical demand from one system
- Impact to reliability of system stability under abnormal conditions such as faults
- Impact of increased short-circuit current on utility and customer equipment and its impact on personnel safety

Analysis of the ultimate planned use of Valley Substation is required to determine the future needs of both 500 kV and 115 kV equipment. This includes such things as transformers, switchrack positions, ingress and egress routing for 500 kV transmission and 115 kV subtransmission lines. A long-term approach (beyond that of just a 10-year plan) is necessary to ensure optimal coordination between transmission system planning needs, distribution system planning needs, and generation interconnection project needs.

SCE does not consider serving up to 1,680 MVA of electrical demand from one system a reliable system configuration. Further expansion of the Valley South 115 kV System subjects an excessive number of customers to the exposure of unplanned electrical outages. Prudent

electrical system design of radial systems incorporates a philosophy that to maintain a reliable electrical system, there should be reasonable limitations to how much electrical demand is served from a single system. This approach can be likened to the “too many eggs in one basket” theory. Electrical system reliability in a large area with substantial electrical power requirements, such as the San Jacinto Valley region, is significantly enhanced when served by more than one electrical system which limits the impact to customers due to system events which cause unplanned outages (vehicle struck poles, wind, lightning, equipment failure, system operator error, etc).

The proposal to install an additional transformer at Valley Substation (a third load-serving transformer on the Valley South 115 kV System) increases the short-circuit current that is produced during faulted conditions. Short-circuit current refers to the amount of electrical current that flows during a faulted condition. Equipment used in electrical systems has a specified rating that identifies the amount of short circuit-current it is designed to withstand. The occurrence of electrical faults are inherent to electrical systems and equipment used within the system must be rated appropriately to safely withstand the short circuit current it may be exposed to.

The impact from this increase in short-circuit current must be acknowledged throughout the entire Valley 115 kV System. Equipment at all voltages levels must be reviewed to determine whether existing ratings would be adequate for the increased value of short-circuit current. This includes substation equipment as well as other equipment to ensure the safety of personnel (e.g., personnel safety grounds) used when working during outages. Currently, the short-circuit current with two transformers is calculated to be approximately 48 kilo-amperes (kA). SCE plans its 115 kV systems to limit the short-circuit current to 50 kA. The proposed addition of a third load-serving 560 MVA 500/115 kV transformer on the Valley South 115 kV System would violate the criteria as the short-circuit current is calculated to be well in excess of 50 kA.

Lastly, the Valley 115 kV Systems, like several areas in the country in recent years, have been subject to reliability issues surrounding the phenomenon of stalled induction motors (e.g., residential air conditioning demand) following 115 kV system faults, also known as Fault Induced Delayed Voltage Recovery (FIDVR). This issue dates back to at least the summer of 2004 when a fault occurred on the 115 kV system which resulted in a sustained low-voltage condition, approximately 35 seconds in duration, and from which approximately 400 MVA of customer demand was dropped. During this event, the protective devices, in place to clear the fault, functioned properly yet the system was unable to recover before a significant amount of customer demand was dropped. This 2004 FIDVR event was essentially caused by the large concentration of induction motor load and the aggregate behavior, beyond SCE's control, of that load in response to the normally-cleared system fault. At least 14 similar events have occurred in the Valley System since 2004 and while the magnitude of these events varied, each had the same outcome, delayed voltage recovery and lost electrical demand caused by the aggregate behavior of a large concentration of induction motor load on the system at the time of the fault, despite normal fault clearing.

The susceptibility of the Valley 115 kV Systems to be impacted by this phenomenon is largely due to two factors.

1. The sheer amount of electrical demand served by each of the Valley 115 kV Systems which is made possible by the two 560 MVA transformers serving each system (typical radial transmission/distribution systems throughout the SCE territory are served by two 280 MVA transformers, thus by design limiting the individual systems to 560 MVA of electrical demand).
2. The high density of residential and commercial air conditioning systems within the systems.

While FIDVR events are due to customer load characteristics that are by definition beyond SCE's control, two primary means to reduce the susceptibility to the induction motor stalling phenomenon would be to “stiffen” the 500 kV transmission system or to reduce the amount of induction motor load in the system. Stiffening the 500 kV transmission system would typically be performed by supplying more 500 kV source lines to Valley Substation. Reducing the amount of induction motor load in the distribution system would typically be performed by reducing the amount of electrical demand served by the system through a transfer of electrical demand from the system to another system.

The proposal to further increase the capacity of the Valley South 115 kV System, by installing a third load-serving transformer, is not representative of sound engineering practice. The capacity to serve up to 1,680 MVA of electrical demand from one system puts a significant number of customers at risk for electrical service interruptions under abnormal conditions (e.g., fault conditions). Increasing the amount of induction motor load served by the Valley South 115 kV System (through continuing to add more customers) only serves to heighten the susceptibility of the system to the induction motor stalling phenomenon. Furthermore, the addition of the third load-serving transformer in the Valley South 115 kV System, could adversely affect the reliability of the Valley North 115 kV System. Adding a third transformer would reduce the impedance between the Valley South 115 kV System and the 500 kV system, increasing the likelihood that during an induction motor stalling event on the Valley South 115 kV System, the Valley North 115 kV System would be subjected to the impact of the event as well.

In summary, the addition of the sixth transformer would: (1) result in short-circuit current values that exceed SCE criteria; (2) only satisfy the short-term electrical demand needs of the area; (3) does not increase system operational flexibility through the creation of ties between adjacent 115 kV systems; and (4) decreases the reliability of the electrical system serving it by making it more prone to induction motor stalling (FIDVR) events.

The proposed Alberhill System Project serves the purpose of not only increasing the total capacity to serve the long-term electrical demand needs in the southern portion of the San Jacinto Valley region, but also provides significant improvements to the system reliability and operational flexibility under normal and abnormal conditions.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029 Verbal

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Sponsoring Project Manager
Dated: 03/25/2013

Question Q.03.1:

Question: 12.1.3.1

For the Valley South 115-kV System, provide the recorded peak demand in megavolt amperes for 2012 and update the attached table through 2022.

12.1.3 Attachment load_table 2012-2021.pdf

Response to Question Q.03.1:

For SCE's Valley South 115 kV System, the recorded peak demand in megavolt amperes for 2012 was 928 MVA. Included in this response is the updated Capacity vs Demand table through 2022.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029 Verbal

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Sponsoring Project Manager
Dated: 03/25/2013

Question Q.04.1:

Question: 12.1.4.1

Confirm that the need date estimated for an operational Alberhill System Project is now June 2016.

Response to Question Q.04.1:

Per SCE's 2013-2022 forecast, the Need Date of the Alberhill System Project is June 2017.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET ASP-ED-SCE-Data Request E

To: ENERGY DIVISION
Prepared by: Tammy Yamasaki
Title: Air Quality Specialist
Dated: 08/13/2015

Question 01:

Table 29 of the Air Quality calculations for the Alberhill System Project reports a SOX emission factor of 14.783 lb/h for helicopters, which is derived using a fuel use of 1,118 kg/h reported from the Federal Office of Civil Aviation Guidance on the Determination of Helicopter Emission and the maximum sulfur content limit established in the standard ASTM D-1655 for Jet Fuel-A (0.30% wt). This emission factor results in SOX daily emissions that are substantially higher when compared to emissions reported by SCE for the same model of helicopter in similar 500-kV transmission construction projects evaluated by the CPUC. These similar projects used emission factors from FAA's Aircraft Engine Emission Database (FAAED). The CPUC requests that SCE revisits the use of 14.783 lb/h as the SOX emission factor because it appears to result in inflated SOX emissions for helicopters.

According to the FAA's Aviation Emissions, Impacts & Mitigation: A Primer document (http://www.faa.gov/regulations_policies/policy_guidance/envir_policy/media/Primer_Jan2015.pdf), internationally accepted standards used for Jet-A limit fuel sulfur content to 0.30% wt. (3,000 PPM S) maximum; in practice, however, "weighted mean sulfur levels for Jet A sulfur measured in the 2010 survey are well below the typical maximum specification limit. The four month averaged weighted mean sulfur level on the overall U.S. was 544 PPM S" (FAA 2015).

Further, the U.S. EPA Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources (http://www.epa.gov/otaq/models/nonrdmdl/r92009.pdf) indicate that nationally, "the sulfur content of fuel remains fairly constant from year to year at about 0.05% wt. for commercial jet fuel" (EPA 1992). Using sulfur content of 544 PPM S or approximately 0.05% wt. for Jet A fuel for the proposed projects would result in SOX daily emissions that are six times lower than those reported in SCE's Table 29 and that are comparable to those reported to similar 500- kV transmission projects evaluated by the CPUC.
Considering that SOX emissions reported for the Sikorsky S64 helicopter represent approximately 80% of the peak daily SOX emissions reported for the entire Alberhill Project, provide:

A. A justification of the apparent discrepancy found in SOX emissions factors for the Sikorsky Skycrane S64 helicopters in the referenced EPA and FAA documents when compared to FAAED factors.

B. If appropriate, based on the response to A, revised criteria air pollutant emissions for the

Sikorsky S64 helicopter use, specifying hours, sulfur content in fuel, and emissions factors for the aircraft engine operating modes used by FAA: taxi/idle, takeoff, climbout, and approach.

Response to Question 01:

The SCE Air Quality calculations for the Alberhill System Project previously utilized a SOx emission factor which was derived using a very conservative maximum sulfur content limit (0.30% wt). Per the CPUC's recommendation, SCE has revised the SOx emission factor for the Sikorsky S64 to reflect a more realistic average sulfur content of 0.05% wt. for Jet A fuel.

To maintain consistent methodology throughout the calculations, SCE modified the SOx emission factor in the same way for the other helicopters utilizing Jet A fuel. Overall Project SOx emissions have been reduced.

The revised Air Quality Appendix as Excel spreadsheets are attached (Alberhill Air Quality Appendix_Emission Factor Update_08-20-15 borrow site.xls and Alberhill Air Quality Appendix_Emission Factor Update_08-20-15 import). Three worksheets within each Excel file were modified: 500 kV Tower Foundation; 500 kV Tower Erection; and 500 kV Tower Stringing. The cells and footnotes that have been modified are in red font, for ease of review.

THE GIARDINELLI
LAW GROUP, APC

JOHN V. GIARDINELLI

SYLVIA J. SIMMONS
KELLY A. NEAVEL
RAMENEH K. TORRES

Please reply to the Riverside County Office

July 31, 2015

Sent Via Email nicholas.sher@cpuc.ca.gov and U.S. Mail

Nicholas Sher, Legal Division
CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC)
505 Van Ness Avenue
San Francisco, CA 94102-3298

Re: Castle & Cooke
Potential Alternative to the Valley—Ivyglen Subtransmission Line Project

Dear Nick,

Thank you for the additional time in responding. Not only was I on vacation in Maui at the time of the letter, but Ken Crawford and Tom Tomlinson have also been on vacation. Enclosed is the formal response to your potential alternate set forth in your letter dated July 21, 2015.

As you can see, Castle & Cooke has deep concerns regarding the proposed alternative. We still believe that the alternatives that we proposed and that we thought were being hammered out are the best approach for all parties concerned. Obviously, we do not speak for the City of Lake Elsinore and the concerns that they have raised. Since we are in August when the grading was supposedly to have been done as mandated by SCE, and SCE/CPUC are still in the EIR process, we wonder about the timing for grading. Mr. Tomlinson is preparing his budgets for 2016 and needs to know whether or not he should include the estimated grading cost for the grading that he had intended to provide in that budget. He is still willing to do the grading necessary to comply with the proposals that we have made so that grading can be completed by August 2016 as we have committed. In light of the ongoing issues, we believe that that is still appropriate, and Castle & Cooke is still willing to move forward.

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I look forward to speaking with you again.

Very truly yours,

THE GIARDINELLI LAW GROUP, APC

John V. Giardinelli
Attorney at Law

JVG:lmc
Enclosure
cc: C&C Team (via email only w/enclosure)

THE GIARDINELLI
LAW GROUP, APC

JOHN V. GIARDINELLI

SYLVIA J. SIMMONS
KELLY A. NEAVEL
RAMENEH K. TORRES

Please reply to the Riverside County Office

July 31, 2015

Sent Via Email nicholas.sher@cpuc.ca.gov and by U.S. Mail

Nicholas Sher, Legal Division
CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC)
505 Van Ness Avenue
San Francisco, CA 94102-3298

Re: Castle & Cooke / Objection to Potential Alternative to the Valley—Ivyglen Subtransmission Line Project

Dear Mr. Sher:

Castle & Cooke appreciates the California Public Utilities Commissions' efforts to provide alternatives to the current proposals for the above-referenced project.

Castle & Cooke must object to the proposed alternative. These alternatives were fully discussed with Southern California Edison a number of years ago and were rejected because they create enormous impacts for the development that we have spent millions of dollars developing. It substantially impairs Castle & Cooke's ability to develop the property as planned and provides no reasonable alternative. Therefore, we must firmly and completely object to the proposed alternative. Our goal is to have an approved specific plan and EIR within the next 6-8 months.

As mentioned previously, Castle & Cooke is still willing to move forward on the proposals that were made and that we believed had been agreed to. Castle & Cooke is still willing to move forward with the appropriate grading and is willing to engage in additional meetings in order to hammer out whatever final issues need to be resolved.

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As always, thank you for your professional courtesy and cooperation.

Very truly yours,

THE GIARDINELLI LAW GROUP, APC

John V. Giardinelli
Attorney at Law

JVG:lmc
cc: C&C Team (via email only)
Tammy Jones, SCE (via email only)

2.0 Description of the Proposed Projects

Southern California Edison (SCE or the applicant) proposes to construct the proposed Valley–Ivyglen 115-kilovolt (kV) Subtransmission Line Project (proposed Valley–Ivyglen Project) and the proposed Alberhill System Project (proposed Alberhill Project) in western Riverside County. Both of the proposed projects would be constructed within and in proximity to the City of Lake Elsinore, California, in an area between the applicant's Valley Substation to the east and Ivyglen Substation to the west (Figure 2-1). The two projects would be constructed along the same right-of-way (ROW) for approximately 6.5 miles (see 115-kV Segments VIG4 and VIG5 shown on Figure 2-2x and 115-kV Segment ASP2 shown on Figure 2-2x). Portions of new 115 kV c~~C~~onductor required for the proposed Alberhill Project would be installed on structures constructed as part of the proposed Valley–Ivyglen Project along the 6.5-mile shared ROW.

Commented [A1]: We request CPUC/E&E to clarify paragraph. Is it intended to describe scope in its entirety or only subtransmission portion?

This section describes the proposed Alberhill Project and the proposed Valley–Ivyglen Project. Unless otherwise specified in a heading, subheading, or text, descriptions of project activities and components apply to both proposed projects.

2.1 Overview of the Proposed Projects

This section provides general overviews of the proposed Valley–Ivyglen Project and proposed Alberhill Project.

2.1.1 Valley–Ivyglen Project Overview

The proposed Valley–Ivyglen Project would involve:

- Construction of a new, single-circuit 115-kV subtransmission line[1] and fiber optic line. The route of the proposed Valley–Ivyglen Project would be approximately 27 miles long and constructed within approximately 23 miles of new ROW.[2]
- Installation of overhead fiber optic lines on the proposed structures and underground in new approximately (~~9,997~~ 10,000 feet) and existing approximately (~~13,201~~ 13,200 feet) conduit.

  Transfer of existing distribution circuits along portions of the proposed substransmission line to new 115-kV structures or to underground positions.

- Installation of new 115 kV switching and protective equipment at both Valley and Ivyglen Substations.

The applicant estimates that construction of the proposed Valley–Ivyglen Project would take approximately ~~27~~ 28 months. It is anticipated that the proposed Valley–Ivyglen Project would be operational by the summer or fall 2018.

[1] *Transmission lines* are designed to operate at or above 200 kV (CPUC 1995). For the purposes of this document, the term *subtransmission line* refers to powerlines designed to operate at between 50 kV and 200 kV. The proposed single-circuit subtransmission line would have three 115-kV conductor. Three-phase, alternating-current electrical transmission systems use at least three conductors to transmit electricity. By comparison, a double-circuit 115-kV line would typically have six 115-kV conductors. Double-circuit 115-kV lines would be constructed as part of the proposed Alberhill Project.

[2] For the purposes of this document, the term *ROW* refers to an area that the applicant would have legal access to for construction and operation of the proposed utility facilities. Legal access may be acquired in various ways, including by purchase, easement, or franchise agreement.

Insert

Figure 2-1 Existing Subtransmission Lines, Transmission Lines, and Substations

Insert

Figure 2-2 series (a, b, c, etc.) Valley–Ivyglen 115-kV Subtransmission Line Project and Alberhill System Project Overview

2.1.2 Alberhill Project Overview

The proposed Alberhill Project would include construction of a new 1,120 megavolt ampere (MVA) 500/115-kV substation (Alberhill Substation), which would be expandable to a maximum of 1,680 MVA depending on future need. In addition to construction of a new Alberhill Substation, the proposed Alberhill Project would include the following:

- Construction of two new 500-kV transmission lines (approximately 3.3 miles, combined) within a new ROW to connect the proposed Alberhill Substation to the existing Serrano–Valley 500-kV Transmission Line;
- Construction of approximately 11.75 miles of new double-circuit 115-kV subtransmission lines and removal of 11 miles of existing single-circuit 115-kV subtransmission lines ~~within~~ primarily in the existing ROW;
- Construction of about 3 miles of single-circuit 115-kV subtransmission lines with distribution lines underbuilt on the subtransmission line structures and removal of about 3 miles of electrical distribution lines within the existing ROW;
- Installation of a second 115 kV circuit on approximately 6.5 miles of single-circuit 115-kV subtransmission lines (the single-circuit line~~s are~~ is to be constructed as part of the proposed Valley–Ivyglen Project);
- Installation of fiber optic lines overhead (9 miles) on sections of the new or modified subtransmission lines and underground (1 mile) in proximity to the proposed Alberhill Substation and several of the existing 115/12-kV substations;
- Construction of an approximately 120-foot microwave antenna tower at the proposed Alberhill Substation site; installation of microwave telecommunications dish antennas at the proposed Alberhill Substation, the existing Santiago Peak Communications Site, and Serrano Substation; and other telecommunications equipment installations at existing and proposed substations; and
- Transfer of 5 of the 14 Valley South 115-kV System substations to the proposed Alberhill 115-kV System: the Ivyglen, Fogarty, Elsinore, Skylark, and Newcomb 115/12-kV substations.[3]

The applicant estimates that construction of the proposed Alberhill Project would take approximately 28 months. It is anticipated that the proposed Alberhill Project would be operational by spring or summer ~~or fall 20182019~~. Figure 2-3 presents a technical schematic of the existing and proposed systems.

2.2 Locations of the Proposed Projects

The applicant proposes to construct both of the proposed projects within unincorporated and incorporated areas of western Riverside County. This section summarizes the various jurisdictions that proposed project components would traverse.

[3] ~~The applicant plans to construct a new 115/12-kV substation (Renaissance Substation) in 2016, which would be the fifteenth Valley South 115-kV System substation.~~

Insert

Figure 2-3 Technical Schematic of Existing and Proposed Systems]

2.2.1 Valley–Ivyglen Project Location

From the existing Valley Substation, in the City of Menifee, the proposed 115-kV line would traverse in a generally west direction through areas within the City of Menifee, City of Perris, City of Lake Elsinore, and unincorporated areas of western Riverside County to the existing Ivyglen Substation (Figure 2-1). The proposed route would cross Interstate 215 (I-215), State Route 74 (SR-74), and Interstate 15 (I-15). Fiber optic lines would be installed overhead on the proposed structures and underground in new and existing conduits.

2.2.2 Alberhill Project Location

The Alberhill Substation is proposed to be built on 34 to 40 acres of a 124-acre property located north of I-15 and the intersection of Temescal Canyon Road and Concordia Ranch Road in unincorporated western Riverside County (Figure 2-1).[4] The two new 500-kV transmission lines would each extend approximately 1.5 miles northeast to connect the proposed Alberhill Substation to the existing Serrano–Valley 500-kV Transmission Line. The two 500-kV transmission lines would be constructed primarily in unincorporated Riverside County, although the transmission lines would pass through the City of Lake Elsinore.

The proposed 115-kV line modifications and construction would occur southeast from the proposed Alberhill Substation to Skylark Substation (approximately 11.5 miles) and from Skylark Substation to Newcomb Substation (approximately 9 miles). The subtransmission lines would be modified or constructed in unincorporated Riverside County and in the Cities of Lake Elsinore, Wildomar, and Menifee.

Fiber optic lines would be installed overhead on the structures modified or constructed as part of the proposed Alberhill Project. In a few locations, fiber optic lines would also be installed in a new underground conduit. Telecommunications equipment would be installed within the telecommunications rooms at the applicant's Barre, Fogarty, Ivyglen, Mira Loma, Newcomb, Serrano, Skylark, Tenaja, Valley, and Walnut Substations (Figure 1-1). Telecommunications systems would also be upgraded at the Box Springs Communications Site, which is located northwest of the City of Moreno Valley, California, and the applicant's Irvine Operations Center in southeastern Irvine, California.

One new approximately 120-foot microwave antenna tower would be installed at the proposed Alberhill Substation; one new microwave dish antenna would be installed at Serrano Substation in the City of Orange in Orange County; and two new dish antennas would be installed at the Santiago Peak Communications Site, which is located on land managed by the United States Forest Service within the Cleveland National Forest.

2.3 Components of the Proposed Projects

This section details the various components of the proposed projects.

[4] If the applicant elects to excavate 5.2 acres of land adjacent to the northeast corner of the proposed substation site to obtain fill required for grading (Figure 2-2x) under Import Soil Option 1, then the land required for construction of the proposed substation would increase from 34 acres to approximately 40 acres (Section 2.4.6.2).

2.3.1 Components of the Proposed Valley–Ivyglen Project

The components of the proposed Valley–Ivyglen Project are summarized in Table 2-1. Locations of the proposed Valley–Ivyglen Project's components are shown on Figure 2-2a. Structures are shown in Figure 2-4a. The underground conduit is shown in Figure 2.4b.

Table 2-1 Components of the Proposed Valley–Ivyglen Project

Component	Approximate Quantity	Dimensions / Specifications
Subtransmission Line Segments (Overhead and Underground)		
Segment VIG1: New single-circuit 115-kV subtransmission line	• 145 LWS poles • 20 TSPs / riser poles [a] • ~~2~~ 1 underground vaults [b]	• 7.5 miles (300 feet new underground conduit) • 30-foot-wide existing ROW on northern side of existing 260- to 390-foot-wide ROW
Segment VIG2: New single-circuit 115-kV subtransmission line	• 118 LWS poles • 2 TSPs • 18 guy poles [c]	• 4.2 miles • 20- to 50-foot-wide new ROW (4.2 miles), partially within existing distribution-line ROW [d]
Segment VIG3: New single-circuit 115-kV subtransmission line along	• 28 LWS poles • 6 TSPs • 2 guy poles • 1 wood pole	• 1.0 mile • 30-foot-wide new ROW (1.0 mile), partially within existing distribution-line ROW [d]
Segment VIG4: New single-circuit 115-kV subtransmission line	• 2 wood poles • ~~58~~ 63 LWS poles • ~~7~~ 8 TSPs • 4 hybrid poles [e] • 3 guy poles	• 2.5 miles • 30-foot-wide new ROW (0.3 miles), partially within existing distribution-line ROW [d]
Segment VIG5: New single-circuit 115-kV subtransmission line	• 1 wood poles • ~~95~~ 100 LWS poles • ~~48~~ 49 TSPs	• 5.11 miles • 30- to 60-foot-wide new ROW (3.9 miles), partially within existing distribution and 115-kV ROW [d, f]
Segment VIG6: New single-circuit 115-kV subtransmission line	• ~~25~~ 30 LWS poles • ~~11~~ 12 TSPs • 3 guy poles	• 1.83 miles • 30-foot-wide new ROW (1.1 miles), partially within existing distribution and 115-kV ROW [d, f]
Segment VIG7: New single-circuit 115-kV subtransmission line	• ~~8~~ 10 wood poles • ~~25~~ 30 LWS poles • ~~19~~ 20 TSPs • 10 wood shoofly poles (temporary) • 1 Riser	• 2.3 miles [h] • 30-foot-wide new ROW (1.8 miles), partially within existing distribution and 115-kV ROW [d, f]
Segment VIG8: New single-circuit 115-kV subtransmission line	• 2 wood poles • 4 TSPs / riser poles [g] • 8 underground vaults	• 1.9 miles • 10- to 30-foot-wide new ROW (1.9 miles)
Modifications at Existing Substations		
New telecommunications equipment installed at Valley and Ivyglen substations	n/a	n/a

Table 2-1 Components of the Proposed Valley–Ivyglen Project

Component	Approximate Quantity	Dimensions / Specifications
New circuit breakers, disconnect switches, and one dead-end structures installed at Valley and Ivyglen substations	Valley Sub: Equip existing vacant 115kV Position • (2) 115kV Circuit Breaker • (4) 115kV Disconnect Switches Ivyglen Sub: Equip existing vacant 115kV Position • 115kV Circuit Breaker • 115kV Disconnect Switches	n/a
Totals		
New 115-kV subtransmission line	n/a	• 26.4 miles (1.9 miles in new underground conduit, 0.0 miles in existing underground conduit) (g)
Fiber optic line	n/a	• 26.1 miles (1.9 miles in new underground conduit, 2.5 miles in existing underground conduit)
New ROW to be acquired	n/a	~~14.2~~ 23 miles (10 to 60 feet wide)
Maximum number of overhead structures that would be installed by structure type (h)	• ~~12~~ 16 wood poles installed • ~~494~~ 514 LWS poles installed • ~~116~~ 121 TSPs installed • 4 hybrid poles installed • 26 guy poles • 1 riser ~~652~~ 682 overhead structures permanently installed 10 wood shoofly poles temporarily installed	• 35 to 100 feet tall, 1.5 to 2.5 feet in diameter at ground level • 65 to 115 feet tall, 1.5 to 2.5 feet in diameter at ground level • 80 to 135 feet tall,(i) 5 to 8 feet in diameter at ground level (including foundation) • 75 to 80 feet tall, 5 to 6 feet in diameter at ground level • 40 to 60 feet tall, 1 to 2 feet in diameter at ground level • 75 to 100 feet tall, 1.5 to 2.5 feet in diameter at ground level
Number of vaults installed (h)	~~8~~ 9 underground vaults installed	Excavated pit would be 12 feet wide by 24 feet long by 14 feet deep
Number of overhead structures removed (h)	• 280 wood distribution-line poles removed (d) • 90 wood subtransmission-line poles removed (f) 370 structures removed	• 12-kV poles: 30 to 80 feet tall, 0.7 to 1.6 feet in diameter at ground level • 33-kV poles: 30 to 65 feet tall, 0.8 to 1.6 feet in diameter at ground level • 35 to 90 feet tall, 0.8 to 2 feet in diameter at ground level

Table 2-1 Components of the Proposed Valley–Ivyglen Project

Component	Approximate Quantity	Dimensions / Specifications

Sources: SCE 2013, 2014
Key: kV = kilovolt, LWS = lightweight steel, n/a = not applicable, ROW = right-of-way, TSP = tubular steel pole
Notes:

[a] At each end of the proposed underground 115-kV line, the conductor would rise out of the ground up a riser pole. The proposed riser poles would be TSPs.
[b] Vaults are below-grade concrete enclosures where underground electrical or telecommunications lines terminate, are spliced together, or transition to or from overhead positions. During operations, vaults are used to access underground lines for inspection, maintenance, and repair.
[c] A guy pole is a ~~steel~~ pole to which a steel cable (a guy wire) is attached and extended to an adjacent LWS pole or other utility structure. Guy poles and guy wires are installed to add stability to a utility structure.
[d] Existing overhead electrical distribution lines would be relocated to and underbuilt on the proposed overhead 115-kV structures.
[e] The lower section of a hybrid pole (Figure 2-4a) is composed of concrete and the upper section of steel. Hybrid poles are direct-buried into the ground (without poured-in-place foundations) in areas with corrosive soil conditions.
[f] In some areas, where the proposed route would follow an existing 115-kV ROW, the single-circuit 115-kV structures would be replaced with double-circuit 115-kV structures (e.g., along the temporary, shoofly line section of 115-kV Segments VIG7 and VIG8). In other areas (e.g., along sections of 115-kV Segment 5), the existing single-circuit 115-kV structures would remain in operation as currently configured. The precise number of existing 115-kV structures that would be converted into double-circuit structures would be determined during final engineering.
[g] The distance presented includes 0.5 miles of temporary 115-kV structures that would be installed as part of the shoofly construction proposed along 115-kV Segments VIG7 and VIG8, which are described in Section 2.4.5.4. The length of the new underground conduit (Figure 2-4b) presented includes 525 feet of trenching for the replacement of 35 distribution-line riser poles.
[h] The numbers of structures and vaults to be installed may change based on final engineering.
[i] Two TSPs up to 135 feet tall would be needed along 115-kV VIG Segment 1 to span a cultural site. All other TSPs proposed along the segment would be up to 115 feet tall.

Insert

Figure 2-4a Subtransmission Structures (Valley–Ivyglen Project)

Insert

Figure 2-4b Underground Conduit (Valley–Ivyglen Project)

The applicant provided approximate structure locations (Figures 2-2a through 2-2x). Although it is assumed the structures would be installed, in general, within the linear orientation of the proposed Valley–Ivyglen 115-kV line route, final engineering has not been completed. For the purposes of this analysis, it is assumed that the proposed 115-kV structures could be installed anywhere along the proposed route.

Span length would range between 80 feet ~~in locations within or near substations~~ and 1,000 feet in some locations to minimize impacts on various resources.

2.3.1.1 115-kV Subtransmission Lines (Segments VIG1 through VIG8)

The proposed Valley–Ivyglen Project would involve the construction of a new 115-kV subtransmission line. The route of the proposed Valley–Ivyglen 115-kV line is identified as Segments VIG1 through VIG8 on Figure 2-2x. Wood poles, guy poles, lightweight steel (LWS) poles, hybrid poles, ~~and~~ tubular steel poles (TSPs), underground duct banks and underground vaults would be used for construction of the new 115-kV subtransmission lines (Figure 2-4a).

Each of the proposed 115-kV overhead structures would support polymer insulators, a 954-kcmil[5] stranded aluminum conductor (SAC), and a 336.4-kcmil stranded aluminum conductor steel-reinforced fault-return conductor. Grounding would be provided through a clamp attachment installed to the proposed metal 115-kV structures to bond the fault return conductor structures. The proposed wood and hybrid poles would have a 4/0 aluminum steel-reinforced conductor installed for grounding. The normal rating (in clear atmospheric conditions, with an ambient temperature of 104 degrees Fahrenheit, at an elevation of 500 feet, and with a wind speed of 4 feet per second) of the proposed 954-kcmil conductor is 1,090 amps when in continuous operation. The emergency rating, assuming 4 hours of operation, is 1,470 amps. Under the same conditions, the normal rating of the proposed 336.4-kcmil fault-return conductor is 605 amps and emergency rating is 820 amps.

115-kV Segment VIG1

The 115-kV Segment VIG1 would exit the Valley Substation from the southwest and extend west along the north side of the existing Serrano–Valley 500-kV Transmission Line ROW to SR-74. The segment would span I-215, SR-74, and a number of roadways and cross through the City of Menifee, City of Perris, and unincorporated Riverside County. Approximately 0.5 mile west of the Valley Substation, a 300-foot portion of 115-kV Segment VIG1 would be installed in new underground duct banks. Portions of the existing distribution line would be relocated to an overhead position on a lower section of the new 115-kV structures.

115-kV Segment VIG2

This segment would follow SR-74 south, passing from unincorporated Riverside County into the City of Lake Elsinore. The segment would then follow along the western side of SR-74 to Conard Avenue. Sections of 115-kV Segment VIG2 would follow an existing distribution line ROW, and in these areas, the existing distribution line would be relocated to an overhead position on a lower section of the new

[5] A circular mil (cmil) is a standard unit of measure used for electrical systems that refers to the area of the cross section of larger conductor sizes. One cmil is equal to the area of a circle with a 1-mil diameter, and 1 kcmil is equal to 1,000 cmils. Large conductor sizes rated for use on electrical transmission lines are generally 0.6 inches to 2 inches in diameter. Aluminum steel-reinforced 2,156-kcmil conductor is approximately 1.8 inches in diameter. In general, larger diameter conductor is capable of greater electrical carrying capacity than smaller diameter conductor (Grigsby 2001).

115-kV structures. A number of guy poles would be installed on the east side of SR-74 in locations where the proposed 115-kV structures require additional support (Figure 2-2x). Guy wires would span SR-74 between the proposed 115-kV structure and the guy poles.

115-kV Segment VIG3

This segment would cross SR-74 and follow Conard Avenue southeast to Third Street. It would follow Third Street southwest across I-15 and then continue southwest to Collier Avenue. 115-kV Segment VIG3 would follow an existing distribution line ROW, and the distribution line would be relocated to an overhead position on a lower section of the new 115-kV structures. Guy poles would be installed in locations where the proposed 115-kV structures require additional support. Guy wires would span Third Street and Conard Street between the proposed 115-kV structure and the guy poles in several locations.

115-kV Segment VIG4

This segment would continue along Third Street from Collier Avenue southwest to Pasadena Avenue and then follow Pasadena Avenue northwest until the road ends. From there, it would pass over land to Riverside Drive (SR-74), extend southwest to Baker Street, and then follow Baker Street northwest to Pierce Street. It would pass under the Valley–Elsinore–Fogarty~~—Ivyglen~~ 115-kV line as it approaches Pierce Street. Sections of 115-kV Segment VIG4 would follow an existing distribution line ROW, and in these areas, the existing distribution line would be relocated to an overhead position on a lower section of the new 115-kV structures. Guy poles would be installed in locations where the proposed 115-kV structures require additional support.

Additionally, approximately 600 feet of construction would occur along the Valley–Elsinore–Fogarty–~~Ivyglen~~ 115-kV line where the proposed Valley–Ivyglen 115-kV line would cross under the existing 115-kV line (Figure 2-2x) approximately 650 feet south of the Pierce Street and Baker Street intersection. Four Valley–Elsinore–Fogarty~~–Ivyglen~~ 115kV line wood poles would be replaced with two new TSPs and two new wood poles.

115-kV Segment VIG5

This segment would continue from Pierce Street across ~~Coal Avenue~~ Nichols Road and then extend west along Nichols Road to the abandoned section of Lake Street ("Old Lake Street"). It would extend northwest along Old Lake Street toward I-15. At this point, the applicant would construct the 115-kV line along Lake Street in one of two alignments—Utility Corridor Option or West of Lake Street Option:

- **Utility Corridor Option:** Under this option, 115-kV Segment VIG5 would continue parallel to and east of Lake Street. The segment would continue north on the east side of Lake Street for about 900 feet.[6] The segment would then cross to the west side of Lake Street and continue north to approximately 800 feet south of Temescal Canyon Road then cross to the east side of Lake Street and continue north to the I-15 on- and off-ramps.
- **West of Lake Street Option:** Under this option, 115-kV Segment VIG5 would cross Lake Street at its intersection with the abandoned portion of Old Lake Street. The segment would then continue parallel to and west of Lake Street. The segment would continue north on Lake Street to

[6] This area east of Lake Street is the location of a planned utility corridor. The utility corridor has not yet been prepared to accommodate utilities. All necessary work, including relocation of a Temescal Wash tributary, would be as part of the Alberhill Ridge Specific Plan (a separate developer project from ~~the~~ applicant's Valley–Ivyglen Project) prior to construction of the proposed Valley–Ivyglen Project if the applicant selects this option.

approximately 800 feet south of Temescal Canyon Road then cross to the east side of Lake Street and continue north to the I-15 on- and off-ramps for Lake Street.

From the east side of Lake Street, the segment would turn west along the south side of an I-15 off-ramp and then along both sides of Temescal Canyon Road for approximately 0.3 miles. From there, it would cross I-15 to the north and then continue west along Concordia Ranch Road to the proposed Alberhill Substation site. A number of guy poles would be installed in locations where the proposed 115-kV structures require additional support.

Structures along sections of the existing ~~Valley–Elsinore–~~Fogarty–Ivyglen 115-kV line would be replaced and, in some cases, relocated along the existing ROW to allow for installation of the proposed Valley–Ivyglen 115-kV line. These sections, combined, would be approximately 0.5 miles long. Sections of 115-kV Segment VIG5 would follow existing distribution line ROWs, and in these areas, the existing distribution line would be relocated to an overhead position on a lower section of the new 115-kV structures.

115-kV Segment VIG6

This segment would continue along Temescal Canyon Road west to Hostettler Road from where 115-kV Segment VIG5 crosses I-15. From there, it would extend over land northwest along I-15. Sections of 115-kV Segment VIG6 would follow an existing distribution line ROW or the 115-kV ROW. The existing distribution line would be relocated to an overhead position on a lower section of the new 115-kV structures. Existing single-circuit 115-kV structures would likely be replaced with 115-kV structures capable of supporting two circuits (i.e., double-circuit 115-kV structures), but this would be determined during final engineering.

115-kV Segment VIG7

This segment would cross Horse Thief Canyon Road and continue along De Palma Road for approximately 1.2 miles. From there, it would cross I-15 to the north and extend to Temescal Canyon Road. It would continue northwest on Temescal Canyon Road to a point approximately 700 hundred feet northwest of the intersection of Temescal Canyon Road and Indian Truck Trail. For approximately 0.5 miles prior to transitioning into 115-kV Segment VIG8, Segment VIG7 would be constructed within the existing ~~Valley–Elsinore–~~Fogarty–Ivyglen 115-kV line ROW. The existing single-circuit 115-kV structures would be replaced with double-circuit 115-kV structures. Sections of 115-kV Segment VIG7 would follow existing distribution line ROWs, and the existing overhead distribution line would be relocated to an overhead position on a lower section of the new 115-kV structures. Approximately 0.5 miles of temporary 115-kV structures would be installed as part of the proposed shoofly construction activities described in Section 2.4.5.4.

115-kV Segment VIG8

This segment would continue northwest along Temescal Canyon Road from the end of 115-kV Segment VIG7 in a new underground conduit. It would be installed underground along Temescal Canyon Road, which crosses under I-15, to a point located across from Ivyglen Substation. From there, it would transition to an overhead position prior to entering the substation.

Vaults and duct banks would be installed along the proposed underground route. Vaults are below-grade concrete enclosures where underground electrical or telecommunications lines terminate, are spliced together, or transition to or from overhead positions. Two of the temporary 115-kV shoofly structures would be installed along 115-kV Segment VIG8.

2.3.1.2 Telecommunications

A new fiber optic line would be installed, as shown in Figure 2-5 and described below, ~~by~~ along the 115-kV Segments. Land disturbance estimates for the proposed trenching activities along all Valley–Ivyglen 115-kV segments are presented in Table 2-5.

115-kV Segment VIG1

Along 115-kV Segment VIG1, the fiber optic line would primarily be installed overhead on the proposed 115-kV structures, with the exception of the following proposed underground locations:

- Approximately 2,530 feet in an existing underground conduit within Valley Substation;
- Approximately 315 feet in a new underground conduit adjacent to Valley Substation; and
- Approximately 1,331 feet in new underground conduit approximately 0.5 miles west of Valley Substation.

115-kV Segment VIG2

Along 115-kV Segment VIG2, a fiber optic line would primarily be installed overhead on the proposed 115-kV structures, with the exception of approximately 410 feet in a new underground conduit along SR-74 from Ethanac Road to Festus Circle.

115-kV Segment VIG3

Along 115-kV Segment VIG3, a fiber optic line would primarily be installed overhead on the proposed 115-kV structures with the exception of approximately ~~320~~ 338 feet in a new underground conduit along Third Street and across Collier Avenue.

115-kV Segment VIG4

Along 115-kV Segment VIG4, the fiber optic line would primarily be installed overhead on the proposed 115-kV structures, with the exception of approximately 210 feet in a new underground conduit along Collier Avenue and Third Street, and approximately 200 feet in a new underground conduit along Baker Street southeast of Pierce Street.

115-kV Segment VIG5

Along 115-kV Segment VIG5, the fiber optic line would primarily be installed overhead on the proposed 115-kV structures, with the exception of approximately ~~425~~ 613 feet in an existing underground conduit across Nichols Road to Old Lake Street.

115-kV Segment VIG6

Along 115-kV Segment VIG6, the fiber optic line would be installed overhead on the proposed 115-kV structures.

115-kV Segment VIG7

Along 115-kV Segment VIG7, the fiber optic line would primarily be installed overhead on the proposed 115-kV structures, with the exception of approximately 1,330 feet in a new telecom underground conduit along De Palma Road east of the intersection of Campbell Ranch Road and Santiago Canyon Road.

Insert

Figure 2-5 Proposed Fiber Optic Lines

115-kV Segment VIG8

Along 115-kV Segment VIG8, the fiber optic line would primarily be installed underground along this segment. Approximately 10,670 feet of fiber optic cable would be installed in an existing underground conduit along Campbell Ranch Road, beginning approximately 850 feet east of Santiago Canyon Road, to Ivyglen Substation. An additional approximately 1,497 feet of fiber optic cable would be installed in a new underground conduit along Temescal Canyon Road from Campbell Ranch Road to Ivyglen Substation.

2.3.1.3 Access Roads

The proposed Valley–Ivyglen Project includes widening and creation of a total of approximately 14 miles of roads. The new access roads could be located anywhere within the Valley–Ivyglen 115-kV General Disturbance Area (Figures 2-6a to 2-6x). The drivable area of the proposed access roads would generally be 24 feet wide with an additional 2 feet on each side if drainage *berms* or *swales* are required.[7] In addition, hilly terrain along sections of 115-kV Segments VIG1 and VIG6 may require additional permanent and temporary disturbance areas for vehicle turnaround and positioning during access road construction. In some locations, the permanent, graded disturbance areas may be as wide as 100 feet, and the temporary disturbance areas may be as wide as 200 feet. The access roads constructed to accommodate construction would be permanent. They would be maintained after construction to facilitate future access for operations and maintenance purposes. Excess soil and vegetation from access road construction would be distributed within the permanent, graded disturbance areas adjacent to the proposed access roads or disposed of as described in Section 2.4.4.8. Refer to the disturbance calculations in Table 2-5 for additional detail related to access road construction.

2.3.2 Components of the Proposed Alberhill Project

The components of the proposed Alberhill Project are summarized in Table 2-2 and shown on Figure 2-2b.

Table 2-2 Components of the Proposed Alberhill Project

Component	Quantity	Dimensions / Specifications
Alberhill Substation		
New 1,120 MVA 500/115-kV substation expandable to 1,680 MVA	• Up to three 500 MVA transformers in service and one spare transformer [(a)]	• 34 to 43 acres [(b)] • 33,550 gallons of oil per transformer • 37-foot-high transformers
500-kVA backup generator	~~n/a~~1	• 960 gallons of diesel fuel
500-kV switchrack	• One gas-insulated switchrack • Space for second 500-kV switchrack and enclosure • Space for two future 500-kV capacitor banks	• One 350-foot-long, 49-foot-high steel enclosure • Up to 50,000 pounds of SF_6

[7] *Berms* are low earthen walls constructed to help retain and direct surface water runoff. *Swales* are depressions that collect surface water runoff.

Table 2-2 Components of the Proposed Alberhill Project

Component	Quantity	Dimensions / Specifications
115-kV switchrack and future 12-kV switchrack	• One open-air insulated switchrack • Space for additional positions on switchrack • Space for future 12-kV switchrack and 115/12-kV transformers • One 115-kV capacitor bank • Space for three future 115-kV capacitor banks	• One 60-foot-high dead-end structure • One 43-foot-high dead-end structure • Space for additional dead-end structures • Up to 1,200 pounds of SF_6 (circuit breakers)
Control building	• Substation monitoring equipment	• 20-feet high, 7,040 square feet
Parking area and multiple driveways	n/a	• 7,600-square-foot parking area • 30-foot to 45-foot-wide driveways • 156,000 square feet of road surface [c]
Agricultural water pipe relocation	n/a	• 27-inch-diameter pipe • 1,700 feet long
Transmission Lines (Overhead)		
Line SA: New 500-kV transmission line to connect the proposed Alberhill Substation to existing Serrano–Valley 500-kV Transmission Line	• ~~6~~ 6 LSTs (1 LST removed) [d]	• ~~1.36~~ 1.6 miles long • ~~400~~ 250-foot to 2,100-foot spans between LSTs • 200-foot-wide ROW (new) [e]
Line VA: New 500-kV transmission line to connect the proposed Alberhill Substation to existing Serrano–Valley 500-kV Transmission Line (overhead)	• 6 LSTs No structures removed	• ~~1.46~~ 1.7 miles long • ~~400~~ 250-foot to 2,100-foot spans between LSTs • 200-foot-wide ROW (new) [e]
Subtransmission Line Segments (Overhead)		
Segment ASP1: New double-circuit 115-kV subtransmission line at proposed substation site	• ~~6~~ 7 TSPs • ~~2~~ 3 LWS poles No structures removed	• 0.22 miles • On proposed substation site

Table 2-2 Components of the Proposed Alberhill Project

Component	Quantity	Dimensions / Specifications
Segment ASP1.5: New double-circuit 115-kV subtransmission line and removal of existing single-circuit section of Valley–Elsinore–Fogarty–~~Ivyglen~~ 115-kV line	• ~~2~~ 4 LWS poles • ~~7~~ 8 TSPs • 2 existing TSPs to be modified (4 wood poles,)	• 0.5 miles • 60-foot to 100-foot-wide ROW (existing) • Existing distribution line underbuild to be relocated to new 115-kV structures (f)
Segment ASP2: Double-circuit Valley–Ivyglen 115-kV line segment (g)	• ~~3~~ 4 LWS • ~~1~~ 2 TSP (4 ~~wood poles~~ LWS removed)	• 6.27 miles • 60-foot to 100-foot-wide ROW (existing)
Segment ASP3: New double-circuit 115-kV line segment and removal of existing single-circuit section of Valley–Elsinore–Fogarty–~~Ivyglen~~ 115-kV line	• ~~9~~ 13 LWS poles • 3 TSPs • 2 existing TSPs to be modified • 1 LWS guy stub	• 0.48 miles • 60-foot to 100-foot-wide ROW (existing) • Existing distribution line underbuild to be relocated to new 115-kV structures (f)
	(13 wood poles and 1 TSP,)	
Segment ASP4: New double-circuit 115-kV subtransmission line and removal of existing single-circuit sections of ~~Ivyglen-Newcomb-Skylark and~~ Elsinore-Skylark 115-kV lines	• 101 LWS poles • ~~10~~ 12 TSPs • ~~1~~ 12 LWS guy stubs ~~STUB~~ • 3 Wood (modified)	• 4.24 miles • 60-foot to 100-foot-wide ROW (existing) • Existing distribution line underbuild to be relocated to new 115-kV structures (f)
	(112 wood poles, 1 LWS, and 1 TSP removed)	
Segment ASP5: New double-circuit 115-kV subtransmission line segment and removal of existing single-circuit section of Valley–Newcomb–Skylark 115-kV line	• 109 LWS poles • ~~10~~ 11 TSPs • 10 H-frame structures (h) • 1 TSP (modified) • 13 LWS guy stubs	• 5.5 miles • 60-foot to 100-foot-wide ROW (existing) • Existing distribution line underbuild to be relocated to new 115-kV structures (f)
	(~~114~~ 119 wood, 2 LWS, ~~3~~ 2 wood H-frame(h), ~~7~~ 8 LWS H-frame(h))	
Segment ASP6: New single-circuit 115-kV subtransmission line segment along existing distribution line route	• 100 LWS poles • 1 TSP (modified) • 7 LWS guy stubs (3 wood poles removed)	• 3 miles • 60-foot to 100-foot-wide ROW (existing) • Existing distribution line to be relocated to new 115-kV structures
Segment ASP7: New double-circuit 115-kV subtransmission line segment and removal of existing single-circuit section of Valley–Newcomb–Skylark 115-kV line	• 9 LWS poles • ~~2~~ 4 TSPs • 3 LWS guy stubs (6 wood poles and 2 TSPs removed)	• 0.25 miles • 60-foot to 100-foot-wide ROW (existing) • Existing distribution line underbuild to be relocated to new 115-kV structures (f)
Segment ASP8: Connect Valley–Ivyglen and Valley–Newcomb single-circuit 115-kV lines	• 3 LWS poles • ~~3~~ 4 TSPs (3 wood poles removed)	• 0.06 miles or 300 feet • 260-foot to 390-foot-wide ROW (existing) • Existing distribution line underbuild to be relocated to new 115-kV structures (f)
Telecommunications Equipment and Fiber Optic Lines (Overhead and Underground)		
New microwave tower at Alberhill Substation	• 1 antenna tower	• 120 feet tall

Table 2-2 Components of the Proposed Alberhill Project

Component	Quantity	Dimensions / Specifications
New dishes at the proposed Alberhill Substation (one), Serrano Substation (one), and the Santiago Peak Communications Site (two)	• 4 microwave dish antennas	• 10 feet wide (each)
New overhead ground wires installed on 500-kV Lines SA and VA (i)	n/a	• ~~2.83~~ 3.3 miles
New fiber optic telecommunication line installed on two 115-kV line taps into the proposed Alberhill Substation	n/a	• 2,000 feet • 650 feet underground
New fiber optic telecommunication line installed on 115-kV Segments ASP1, ASP 1.5, ASP5, ASP6, and ASP7	n/a	• 8.66 miles • 1.11 miles underground
New telecommunications equipment installed inside existing substations (e.g., microwave radios)	n/a	n/a
Totals		
New 500-kV transmission line	n/a	~~2.83~~ 3.3 miles
New or modified 115-kV subtransmission line	n/a	20.42 miles
New fiber optic line	n/a	8.66 miles (1.11 miles in new underground conduit)
New 500kV ROW to be acquired	n/a	3.3 miles (200 feet wide)
Number of transmission and subtransmission structures by structure type	• 12 LSTs installed • 3 Wood Poles (modified) • ~~338~~ 346 LWS poles installed • 10 H-frame structures installed • ~~42~~ 51 TSPs installed • 36 LWS guy stubs installed • 4 existing TSPs to be modified • 2 TSPs (modified) ~~1 Stub pole installed~~	• 95 feet to 190 feet tall, four concrete footings • 75 feet to 100 feet tall, 1.5 to 2.5 feet in diameter at ground level • 70 feet to 80 feet tall, two 1.5 to 2.5 feet diameter LWS poles at ground level • 70 feet to 115 feet tall, 5 to 8 feet in diameter at ground level (including foundation)4
	(1 LST, ~~256~~ 260 wood poles, ~~3~~ 7 LWS poles, ~~1~~ 3 TSPs, 2 wood H-frames and ~~10~~ 8 LWS H-frames removed)	•

Table 2-2 Components of the Proposed Alberhill Project

Component	Quantity	Dimensions / Specifications

Source: SCE 2011

Key: kV = kilovolt, kVA = kilovolt ampere, LST = lattice steel tower, LWS = lightweight steel, MVA = megavolt ampere, n/a = not applicable, SF_6 = sulfur hexafluoride gas, ROW = right-of-way, TSP = tubular steel pole

Notes:

[a] The initial build would include the installation of two transformers, with one of the two a spare. Space would be available for the installation of two additional transformers, for a maximum of three in-service transformers and a spare, if needed in the future.

[b] Approximately 34 acres would be needed for construction of the Alberhill Substation, including landscaping and access roads. If the applicant elects to excavate 5.2 acres of land adjacent to the northeast corner of the proposed substation site to obtain fill (Figure 2-7) under Import Soil Option 1, then the land required for construction of the proposed substation would increase from 34 acres to approximately 40 acres (Section 2.4.6.2).

[c] Road surfaces inside and surrounding the proposed Alberhill Substation would be asphalt, concrete, or gravel (Class II Aggregate).

[d] One 500-kV tower would be removed from the Serrano–Valley 500-kV Transmission Line.

[e] Refer to Tables 2-6 and 2-7 for disturbance area by project component.

[f] A number of the existing single-circuit 115-kV structures to be replaced with double-circuit 115-kV structures have existing distribution and telecommunications lines underbuilt on (installed on the lower position of) the single-circuit 115-kV circuit structures. The existing distribution and telecommunications lines would be relocated to and underbuilt on the proposed double-circuit 115-kV structures.

[g] Placing a second circuit on this proposed Alberhill Project 115-kV segment requires that proposed Valley–Ivyglen Project 115-kV Segments VIG4 and VIG5 are constructed.

[h] H-frame structures are constructed using two LWS poles. Existing H-frame structures to be removed consist of two wood poles or two LWS poles.

[i] Two parallel overhead ground wires would be installed on the top of each of the proposed 500-kV towers.

2.3.2.1 Alberhill Substation

The proposed 1,120 MVA 500/115-kV Alberhill Substation would be expandable to a maximum of 1,680 MVA, with space for three in-service 560 MVA 500/115-kV transformers and one spare, depending on future need. Up to ~~six~~ five 500-kV transmission lines may connect to the final build of the substation, as needed. The substation would be unstaffed and automated. The initial build of the proposed Alberhill Substation would connect to ~~two~~ an existing 500-kV transmission line~~s~~ via two new segments and include the following (Figure 2-7):

- Two 560 MVA 500/115-kV transformers with one used as a spare;
- 500-kV switchrack with gas-insulated switchgear;
- 115-kV switchrack;
- 115-kV capacitor bank;
- Control building with basement;
- Electrical power sources including a backup generator;
- Lighting;
- Entrance, gates, driveways, parking, and a minimum 8-foot-high perimeter wall; and
- Restroom, septic system, water supply, and landscaping irrigation.

Five 115-kV lines would extend from the initial build of the proposed Alberhill Substation. If the proposed substation is expanded in the future and two or up to three load-serving 500/115-kV transformers are installed, ~~12 to 15~~ up to 10 115-kV lines may ultimately extend from the proposed substation. To allow for construction of the substation, a 27-inch agricultural water pipeline would be relocated to the perimeter of the proposed Alberhill Substation property (Figure 2-7).

Transformers

The proposed Alberhill Substation would include the installation of two 560 MVA 500/115-kV transformers as part of the initial build. Because the total load that would be transferred initially from the Valley Substation to the proposed Alberhill Substation would be less than the capacity of one of the

installed transformers (560 MVA), the second transformer would be energized and available for service ~~serve~~ as the spare for the purposes of the initial build. ~~The spare transformer would only be activated in emergency conditions, which may include periods of high electrical demand or failure of the other transformer.~~

The proposed Alberhill Substation would be constructed with enough space for two additional 560 MVA 500/115-kV transformers. When the electrical load exceeds 560 MVA, the first two transformers would serve the load and a third transformer would be installed as a spare. Based on the applicant's projections, the load may exceed 560 MVA between 2024 and 2029. A fourth transformer would be installed as a spare and the first three transformers would serve the load when the electrical load exceeds 1,120 MVA. The applicant projects that the load may exceed 1,120 MVA between 2037 and 2050, depending on annual growth in electrical demand. Each of the 560 MVA 500/115-kV transformers would be approximately 37 feet high and contain approximately 33,550 gallons of transformer oil (mineral oil). There would also be space reserved for the future installation of ~~a~~ 115/12-kV transformers (Figure 2-7).

Switchracks

The flat portion of the proposed 124-acre Alberhill Substation site is suitable for substation construction, but it is not large enough for construction of an all *open-air insulated substation*—a substation where insulation between all common circuits of the same voltage is provided by distance and air in the environment. Instead, for the 500-kV switchracks, the applicant would use *gas-insulated switchgear*—switchgear that uses gas held within pipes for insulation between common circuits. Gas-insulated switchgear would contain sulfur hexafluoride (SF_6), which would allow for a smaller substation footprint (approximately half the size of an open-air insulated substation), requiring less grading.

The applicant has stated that the removal of more than one million cubic yards of rock and soil would be required to obtain the additional 6 acres of flat land necessary to construct an open-air insulated substation at the proposed site. Hills surrounding the proposed Alberhill Substation site would need to be excavated, which ~~would~~ may substantially decrease slope stability. The proposed site is bounded to the north and northeast by the Gavilan Hills; to the west by Love Lane; and to the south by Temescal Canyon Road, Concordia Ranch Road, and I-15. To the east there is a depression in the land, a relatively flat area, and rolling hills.

Insert

Figures 2-6a to 2-6x General Disturbance Areas

Insert

Figure 2-7 Alberhill Substation Layout

500-kV Switchrack (Gas Insulated)

The 500-kV switchgear would be housed in a steel enclosure that is approximately 350 feet long, 60 feet wide, and 49 feet high. There would be space reserved at the proposed Alberhill Substation for a ~~second~~ future 500-kV switchrack (Figure 2-7). The 500-kV switchrack would consist of six positions with two operating buses arranged in a breaker-and-a-half configuration. The operating buses would have six 500-kV gas-insulated potential-transformers. Initially, four positions would be installed. ~~Four~~ Three positions would be equipped for two 500-kV line positions and two transformer bank positions. The two 500-kV line positions and two bank positions would be equipped with line/bank dead ends. The 500-kV transmission lines and transformer bank leads would have twelve 500-kV lightning arresters.

115-kV Switchrack and Future 12-kV Switchrack (Open-Air Insulated)

The 115-kV switchrack would use open-air-insulated switchgear. Five 115-kV lines would extend from the proposed 115-kV switchrack. There would be space reserved at the proposed Alberhill Substation for an ~~second~~ extension of the 115-kV switchrack ~~and/or additional positions on the original first switchrack~~. If the proposed substation is expanded in the future and up to three load-serving 500/115-kV transformers are operational, it is estimated that ~~12 to 15~~ up to 10 115-kV lines may ultimately extend from the 115-kV switchrack. The 115-kV operating buses would have eighteen 115-kV lightning arresters. The initial-build of the 115-kV switchrack would connect to two *dead-end structures*.[8] Space would be reserved at the proposed Alberhill Substation for a future 12-kV switchrack.

Capacitor Banks

One 115-kV capacitor bank would be installed in the initial build of the proposed Alberhill Substation with a circuit breaker and a disconnect switch. The capacitor bank would be approximately 14 feet high. Space would be reserved for three additional 115-kV capacitor banks and two 500-kV capacitor banks.

Control Building

Monitoring equipment for the proposed Alberhill Substation would be located in a permanent control building that would be constructed of ~~concrete blocks~~ prefabricated metal and include a full basement. The control building (7,040 square feet) would be approximately 64 feet wide, 110 feet long, and 20 feet high. It would be equipped with air conditioning, control and relay panels, battery and battery charger, and communication equipment. Approximately 150 pounds of hydrofluorocarbon refrigerant (HFC-410ACE) would be used for the air conditioning system. The applicant would install an early-detect smoke and fire detection system. Handheld fire extinguishers rated for electrical fire would be available in the control building and within the proposed substation boundary. No other fire suppression systems would be installed at the proposed Alberhill Substation.

Electrical Power

The proposed Alberhill Substation would have three sources of electrical power for the control building and other ancillary facilities. The primary source of power would be an output of one of the proposed substation's main transformers. A secondary source would be a nearby distribution line that would be connected to the proposed Alberhill Substation site. For emergency use, one 500-kVA ~~ampere~~ 120/240 volt, 3-phase, stationary backup generator would be installed at the proposed substation site. It would have a diesel tank capable of storing approximately 960 gallons of diesel fuel.

[8] *Dead-end structures* are higher-strength structures used at the termination point of powerlines that are designed to support the high-tension forces associated with the length of the line leading up to the termination point. Higher-strength structures are also installed where powerlines change direction.

Lighting

The proposed Alberhill Substation would have access and maintenance lighting. ~~The applicant would use low-pressure sodium lighting at the proposed Alberhill Substation.~~ The lighting would conform to Riverside County Ordinance 655, which regulates and specifies criteria for light pollution with regard to the Palomar Observatory.

The access lighting would be low-intensity and controlled by a photo sensor. Each gate at the proposed Alberhill Substation would have a beacon light installed for safety and security purposes. The beacon lights would be illuminated only while the gates are open or in motion. The applicant typically uses double-flash strobe lights as beacon lights on substation gates.

Maintenance lights would be controlled by a manual switch that would normally be in the "off" position. Maintenance lights would be used only when required for switching, maintenance or emergency repairs that occur at night. The lights would be located in the switchracks, around the transformer banks, and in areas of the proposed Alberhill Substation where maintenance activity may take place, and would be directed downward and shielded to reduce glare outside of the proposed substation.

Entrance, Love Lane, Gates, Driveways, Parking, and Perimeter Wall

Love Lane, sections of which would be within the footprint of the proposed Alberhill Substation site, would be relocated from 130 to 180 feet west to the location shown in Figure 2-7. The relocated section of road would be paved, 36 feet wide, and extend approximately 250 feet north of Temescal Canyon Road. A 30-foot-wide access driveway would be constructed to the east of the relocated road that would lead to the proposed substation's main entry gate. To the north, the section of relocated road would be unpaved and join the existing, unpaved Love Lane, approximately 400 feet north of the proposed substation access driveway.

Four gates would be installed. A 40-foot-wide, electrically operated main entrance gate would allow two-way traffic access into the proposed Alberhill Substation (Figure 2-7). A similar, 40-foot-wide, secondary access gate would be located facing Temescal Canyon Road. A 24-foot-wide, manually operated gate would be located at the eastern end of the proposed substation to provide access to the 500-kV transmission lines. A walk-in gate would be installed either on the west wall facing Love Lane or the south wall facing Temescal Canyon Road. The walk-in gate location would be determined during final design of the proposed Alberhill Project. All of the gates would be at least 8 feet high.

Within the proposed Alberhill Substation, a series of driveways would be constructed to facilitate vehicular movement and access to substation equipment. Space would also be reserved for a driveway to access the future 500-kV capacitors. In addition, a parking area would be constructed. Refer to Table 2-2 for driveway and parking area dimensions.

The applicant would install a temporary chain-link fence around the proposed Alberhill Substation site after existing vegetation and facilities are cleared until the permanent perimeter wall is constructed. A minimum ~~An~~ 8-foot-high perimeter wall of concrete panels or decorative block would be constructed to surround the proposed Alberhill Substation. The wall would be constructed to safety standards and may need to comply with the current version of NERC/CIP requirements for major electrical facilities. It would be designed to be consistent with the surrounding community's construction standards. A band of at least three strands of barbed wire would be affixed near the top of the perimeter wall inside the proposed Alberhill Substation. The barbed wire would not be visible from outside the substation ~~site~~. Landscaping and irrigation would be installed after the proposed Alberhill Substation wall is constructed.

Substation Setback

The minimum setback from the proposed Alberhill Substation wall to the road ROW for Temescal Canyon Road would be between approximately 48 and 63 feet. This would be a setback of between approximately 88 and 103 feet from the wall to the existing pavement edge. If County of Riverside road improvement plans are constructed on Temescal Canyon Road, the minimum setback from the proposed substation wall to the future road curb face would be between approximately 69 and 84 feet. The minimum setback from the proposed Alberhill Substation wall to the road ROW for Concordia Ranch Road would be about 33 feet, which would be about 53 feet from the existing pavement edge.

Restroom, Septic System, and Landscaping

A stand-alone, prefabricated, permanent restroom would be installed within the proposed Alberhill Substation perimeter ~~near the control building~~. The proposed Alberhill Substation site is not served by a public sewer system. A new septic system or holding tank would be installed in accordance with all Riverside County Department of Environmental Health permit requirements. The restroom would be approximately 10 feet wide, 10 feet long, and 10 feet high.

Landscaping for the proposed Alberhill Substation would be designed to filter views from the surrounding community while maintaining substation security and safety standards. Irrigation and landscaping installation would occur after construction of the proposed substation perimeter wall and after water service has been established.

Water Pipeline Relocation

A 27-inch agricultural water pipeline, owned and operated by the Elsinore Valley Municipal Water District, crosses the proposed Alberhill Substation site. The existing gravity-fed water pipeline is located on a 1.3-acre parcel that runs across the middle of the proposed substation site. A 32-inch pipeline would be installed to replace the existing water pipeline. The new pipeline would be ~~relocated~~ rerouted to the perimeter of the substation property prior to construction of the proposed Alberhill Substation (Figure 2-7).

Currently, the water line is not in use. If needed, it is available for local agricultural and industrial uses. The new water line would be located underground within new easement on the proposed Alberhill Substation property. It would be constructed prior to disturbing the existing water line, allowing connections on the upstream and downstream ends to occur toward the end of the line's construction schedule to minimize service disruption. The Elsinore Valley Municipal Water District anticipates that the line would be out of service for one workday, approximately eight hours, and no more than two days (Baiyasi 2011).

The new pipeline would be buried and would connect to the existing pipeline at the western edge of the proposed substation property, follow the new substation access road south to the Temescal Canyon Road ROW, turn southeast parallel to the Temescal Canyon Road ROW, and then connect to the existing pipeline at a point across Concordia Ranch Road southeast of the proposed Alberhill Substation property (Figure 2-7). The trench excavated to install the new pipeline alignment would be approximately 4 feet wide and 6 feet deep. The length of relocated water pipeline would be approximately 1,700 feet, which would extend the existing length by approximately 50 feet.

2.3.2.2 500-kV Transmission Lines

The applicant proposes to construct two new 500-kV transmission lines (500-kV Line SA and 500-kV Line VA) to connect the proposed Alberhill Substation to the existing Serrano–Valley 500-kV Transmission Line (Figure 2-2x). Line SA would be 1.6 miles long and Line VA would be 1.7 miles long.

Construction of the 500-kV transmission lines would require the removal of one 500-kV lattice steel tower (M13-T4) and installation of 12 new lattice steel towers (500-kV towers SA1 to SA6 and VA1 to VA6).

The lattice steel tower footings would require four excavated holes 3 feet to 6 feet in diameter and 20 feet to 45 feet deep. On average, footings extend above the ground between 1 and 4 feet. The two lattice steel towers installed nearest to the proposed Alberhill Substation would be taller, double-circuit towers, but the conductor would be installed only on one side of the towers as part of the proposed Alberhill Project. The other 10 lattice steel towers installed would be single-circuit towers (Figure 2-8).

The lattice steel towers would have a dull galvanized steel finish. They would support 2,156-kcmil non-specular aluminum steel-reinforced conductors, polymer insulators, and overhead ground wires. The rating of the proposed aluminum conductor steel-reinforced ~~conductor~~ (ACSR) would be the same as the existing conductor used on the Serrano–Valley 500-kV Transmission Line. The normal rating (in clear atmospheric conditions, with an ambient temperature of 104 degrees Fahrenheit, at an elevation of 500 feet, and with a wind speed of 4 feet per second) of the existing and proposed 2,156-kcmil ACSR ~~conductor~~ is 3,950 amps when in continuous operation. The emergency rating, assuming 4 hours of operation, is 5,330 amps.

Lake Mathews/Estelle Mountain Reserve

The existing Serrano–Valley 500-kV Transmission Line ROW is adjacent to land managed by the Bureau of Land Management (BLM) and traverses areas managed by the Riverside County Habitat Conservation Agency within the Lake Mathews/Estelle Mountain Core Reserve (Core Reserve; Figure 2-2x). Along the Serrano–Valley 500-kV Transmission Line ROW, construction of the proposed Alberhill Project would occur within the existing ROW with the exception of areas near the proposed sites for 500-kV Towers SA6 and VA6 and existing 500-kV tower sites M13-T4, M13-T3, and M13-T2. Wire-stringing equipment and vehicles may be required to back up onto an existing access road and other areas within the Core Reserve adjacent to proposed tower sites SA6 and VA6 and existing tower site M13-T4, as shown in Figure 2-2x.

Land managed by the BLM within the Core Reserve would not be disturbed for construction uses other than by construction vehicles that would drive on an existing access road to tower sites M13-T3 and M13-T2 (Figure 2-2x), which traverses BLM land for a few hundred feet. Construction activities within the Core Reserve are further described in Section 2.4.5.5, under the heading "Grounding and Snubbing: Core Reserve Access," and in Section 2.4.5.6, under the heading, "500-kV Transmission Line Wire Stringing." Work may occur within the Core Reserve during a period that would last up to 4 weeks (USFWS and CDFW 2013a). No earth moving, road widening, or nighttime activities are proposed within the Core Reserve (USFWS and CDFW 2013b).

Insert

Figure 2-8 Alberhill Project Structures

2.3.2.3 115-kV Subtransmission Lines (Segments ASP1 through ASP8)

The proposed Alberhill Project would involve the construction of new 115-kV subtransmission lines and modification of existing 115-kV subtransmission lines. The routes of the proposed 115-kV lines area identified by Segments ASP1 through ASP8 on Figure 2-2b. LWS poles, TSPs, guy stubs and H-frames would be used for construction of the new 115-kV subtransmission lines (Figure 2-4b). Each of the proposed 115-kV structures would support polymer insulators, 954-kcmil stranded aluminum conductor (SAC), and 4/0 ~~aluminum steel-reinforced conductor~~ ACSR for grounding. If needed, 954-kcmil ~~aluminum steel-reinforced conductor~~ ACSR would be used at locations requiring higher tension.[9] The normal rating (in clear atmospheric conditions, with an ambient temperature of 104 degrees Fahrenheit, at an elevation of 500 feet, and with a wind speed of 4 feet per second) of the proposed 954-kcmil ~~conductor~~ SAC is 1,090 amps when in continuous operation. The emergency rating, assuming 4 hours of operation, is 1,470 amps. The 115-kV lines that would be replaced along 115-kV Segments ASP3, ASP4, ASP5, and ASP7 use 653-kcmil ~~aluminum steel-reinforced conductor~~ ACSR with a normal rating of 920 amps and emergency rating of 1,240 amps under the same conditions identified for the proposed 954-kcmil ~~conductor~~ SAC previously described.

For the purposes of this document, it is assumed that the 115-kV structures to be removed could be located at any point along 115-kV Segments ASP1.5 through ASP8 and that new 115-kV structures could be installed anywhere along 115-kV Segments ASP1, ASP1.5, and ASP3 through ASP8. Similarly, replacement of the four structures along an approximately 1,000-foot section of 115-kV Segment ASP2 that extends east of the intersection of Concordia Ranch Road and Temescal Canyon Road could occur at any location within an approximately 1,000-foot-long section east of the proposed Alberhill Substation site. The precise location of each 115-kV structure to be installed would be determined during final engineering. Wood poles, guy poles, LWS poles, hybrid poles, and TSPs would be used for construction of the new 115-kV subtransmission lines (Figure 2-8).The location of switches and open spans that may be needed in addition to those indicated for 115-kV Segment ASP8 would also be determined during final engineering.

The estimated number of structures to be removed and installed and the length of each 115-kV segment are provided in Table 2-2. Each of the following segments are shown in more detail in Figures 2-8a to 2-8g.

115-kV Segment ASP1

115-kV Segment ASP1 would be a new double-circuit 115-kV subtransmission line at the proposed Alberhill Substation site that would connect the substation to 115-kV Segment ASP2. New TSPs and LWS poles would be installed (Table 2-2). The new double-circuit 115-kV line would connect to the 115-kV switchrack at the western end of the proposed Alberhill Substation (Figure 2-7). The line would exit the proposed substation near the main entry gate, turn south, and then parallel the substation perimeter south to Temescal Canyon Road. The line would continue southeast along Temescal Canyon Road to Concordia Ranch Road.

[9] Stranded aluminum 954-kcmil conductor has a diameter of approximately 1.1 inches. The American Wire Gauge conductor size 4/0 is equivalent to 212-kcmil conductor, which is approximately 0.5 inches in diameter. Aluminum steel-reinforced 954-kcmil conductor, which is composed of strands of aluminum on the outer shell of the conductor cable and strands of steel in the core, is generally a few millimeters in diameter wider than 954-kcmil stranded aluminum conductor, which does not contain a steel core (Grigsby 2001).

Insert

Figures 2-8a to 2-8g

115-kV Segment ASP1.5

The 115-kV Segment ASP1.5 would connect to the new 115-kV switchrack at the western end of the proposed Alberhill Substation (Figure 2-7). The segment would exit the proposed substation near the main entry gate, turn south/southwest, and then cross Temescal Canyon Road to a point along the existing ~~Valley–Elsinore–~~Fogarty–Ivyglen 115-kV line alignment. The 115-kV Segment ASP1.5 would then extend southeast along Temescal Canyon Road and cross I-15 (Figure 2-2x). The 115-kV Segment ASP1.5 would be a double-circuit subtransmission line.

Note that an additional single-circuit 115-kV subtransmission line would extend from the proposed Alberhill Substation. Five 115-kV lines would extend from the initial build of the proposed Alberhill Substation. The additional single-circuit line would likely follow the alignment of either 115-kV Segment ASP1 or ASP1.5 after exiting the proposed substation's 115-kV switchrack. The alignment of the additional single-circuit line would be determined during final engineering for the proposed Alberhill Project.

115-kV Segment ASP2

The 115-kV Segment ASP2 would place a second circuit on an approximately 6.3-mile section of the proposed Valley–Ivyglen 115-kV line (115-kV Segments VIG4 and VIG5; Figure 2-2x). As part of the proposed Valley-Ivyglen Project, four LWS poles would be installed on the south side of Concordia Ranch Road to avoid conflicts that would occur during construction of the proposed Alberhill Substation. As part of the proposed Alberhill Project, three replacement LWS poles and one TSP would be installed on the north side of Concordia Ranch Road (Table 2-2). The final location of the four poles on the north side of Concordia Ranch Road would accommodate 115-kV circuits that would exit Alberhill Substation to the east on poles constructed as part of the Valley–Ivyglen Project. No other structure installation or replacement would be required along 115-kV Segment ASP2 as part of the proposed Alberhill Project. The proposed Valley–Ivyglen 115-kV line is designed to support two circuits. To add the second circuit along 115-kV Segment ASP2, the proposed Valley–Ivyglen 115-kV line structures would require the addition of crossarms, anchors, ~~and~~ insulators and conductor.

Double-circuiting would begin at the southeastern end of 115-kV Segment ASP1 and follow Concordia Ranch Road east to its terminus. From there it would cross I-15 south to Temescal Canyon Road and then continue east to Lake Street. From Lake Street, it would continue south to ~~Coal Avenue~~Nichols Road. The line would then follow ~~Coal Avenue to~~ Nichols Road to Pierce Street and then turn southeast on Baker Street and continue to Riverside Avenue (SR-74). The line would follow Riverside Avenue northeast and then pass southeast over land to Pasadena Avenue. It would continue along Pasadena Avenue and then turn northeast onto Third Street and continue to Collier Avenue.

115-kV Segment ASP3

Along 115-kV Segment ASP3, a second circuit along a section of the Valley–Elsinore–Fogarty~~–Ivyglen~~ 115-kV line would be installed and the existing single-circuit section of the line would be removed. New structures capable of supporting two circuits would be installed. The new LWS poles and several TSPs would be installed to enable the crossing of I-15 (Table 2-2). Wood poles and the existing TSPs adjacent to I-15 would be replaced in the City of Lake Elsinore between the intersections of Third Street and Collier Avenue and Second Street and Camino del Norte.

115-kV Segment ASP4

~~115-kV Segment ASP4 includes installation of new LWS poles capable of supporting two circuits along a section of the Ivyglen–Fogarty–Newcomb–Skylark and Elsinore–Skylark 115-kV lines with removal of the existing single-circuit sections of the lines (Table 2-2). The structures would be constructed and~~

~~removed in the cities of Lake Elsinore and Wildomar between the intersections of East Hill Street and Flint Street and Skylark Substation. The existing 115-kV wood structures would be removed.~~

115-kV Segment ASP4 includes installation of new double-circuit LWS poles along a section of the Elsinore-Skylark 115kV lines with removal of the existing single-circuit sections of the lines (Table 2-2). From East Hill Street southwest to East Pottery Street, structures would be constructed and removed along a section of the ~~Ivyglen–Newcomb~~ Elsinore–Skylark 115-kV line. From East Pottery Street east to East Franklin Street and then southeast to Skylark Substation, structures would be constructed and removed on the Elsinore–Skylark 115-kV line. The line would continue from East Franklin Street over land and then along Auto Center Drive, Casino Drive, Malaga Road, and Mission Trail to Skylark Substation.

115-kV Segment ASP5

115-kV Segment ASP5 includes installation of new double-circuit LWS poles and H-frame structures ~~capable of supporting two circuits~~ along a section of the Valley–Newcomb–Skylark 115-kV line (Table 2-2). The existing 115-kV LWS poles, H-frame structures, and wood poles would be removed. This segment would pass through the cities of Wildomar and Menifee.

Starting at Skylark Substation, the double-circuit lines would continue east across Mission Trail Road to Waite Street. It would follow Waite Street and then turn north onto Almond Street and continue to Lemon Street. It would cross I-15 and continue east along Lemon Street to where the street turns into Lost Road. It would continue northeast on Lost Road and then turn east and cross open land and multiple roads to Beverly Street. It would follow Beverly Street and then continue east along Bundy Canyon Road to Scott Road.

115-kV Segment ASP6

115-kV Segment ASP6 includes construction of LWS poles for a new single-circuit 115-kV subtransmission line north from the intersection of Scott Road and Murrieta Road to Newport Road. An existing distribution line with wood poles along Murrieta Road would be removed, and the distribution line conductor would be transferred to and underbuilt on the new 115-kV structures (installed below the new 115-kV circuit).

115-kV Segment ASP7

115-kV Segment ASP7 includes installation of new double-circuit LWS poles and TSPs ~~capable of supporting two circuits~~ along a section of the Valley–Newcomb–Skylark 115-kV line north of the intersection of Newport Road and Murrieta Road to Newcomb Substation in Menifee. Existing 115-kV wood structures would be removed. In addition, the circuit breaker at Newcomb Substation that connects the substation to Valley Substation would be opened, which would disconnect Newcomb Substation from Valley Substation (Figure 2-4).

115-kV Segment ASP8

115-kV Segment ASP8 includes installation of new LWS poles and TSPs along a 300-foot section at the intersection of Murrieta Road and McLaughlin Road in Menifee to connect the Valley–Newcomb 115-kV line to the proposed Valley–Ivyglen 115-kV line (Figure 2-2x). Existing 115-kV wood structures would be removed. The circuit breaker that connects the proposed Valley–Ivyglen 115-kV line to Valley Substation would be opened to ensure that the line is deenergized from Valley Substation ~~to a switch located at the intersection of Murrieta Road and McLaughlin Road~~ (Figure 2-4).

The Valley–Newcomb 115-kV line from Valley Substation would be disconnected by creating an *open span*.[10] The open span would be located near Murrieta Road. The circuit breaker that connects the Valley–Newcomb 115-kV line to Valley Substation would be opened to ensure that the line is deenergized (Figure 2-3).

2.3.2.4 Telecommunications

The proposed Alberhill Substation would require the installation of new telecommunication infrastructure to provide protective relaying, data transmission, and telephone services to the substations served by the proposed Alberhill System. These new facilities include modifications to the applicant's existing microwave system and the addition of new fiber optic cable. The proposed Alberhill Project would include the installation of new telecommunication infrastructure required for communication with the substations served by the proposed Alberhill 115-kV System. New microwave components, fiber optic cable, and other telecommunications equipment installations would be part of the proposed Alberhill Project.

Microwave System: Alberhill Substation, Santiago Peak, and Serrano Substation

To connect the proposed Alberhill Substation to the applicant's microwave communications system, a 120-foot-tall microwave antenna tower would be built at the proposed Alberhill Substation site (Figure 2-7). The applicant would install one microwave dish antenna on the new tower and three microwave dish antennas on two existing antenna towers. One of the existing antenna towers is located at the Santiago Peak Communications Site, which is located approximately 7 miles southwest of the proposed Alberhill Substation site (Figure 2-2b). The second existing antenna tower is located at Serrano Substation in the City of Orange in Orange County. One dish antenna at the Santiago Peak Communications Site would be directed toward the microwave antenna tower at the proposed Alberhill Substation and the other toward Serrano Substation, which is west of the Santiago Peak Communications Site. The dish antenna at Serrano Substation would be directed toward the Santiago Peak Communications Site. All four microwave dish antennas would be 10 feet in diameter. A typical 120-foot-tall microwave antenna tower is shown in Figure 2-9.

In addition, new microwave radios and channel equipment would be installed inside existing telecommunications control rooms at the Santiago Peak Communications Site and Serrano Substation and the control room at the proposed Alberhill Substation.

[10] The creation of an *open span* does not indicate that a span of conductor would be removed between two poles. Instead, only the jumper loop wire that provides electrical connectivity to the line would be disconnected and secured. By disconnecting, folding back, and securing the jumper loop wire, a permanent physical and electrical separation is made. The disconnected jumper loop wire would also be grounded by connecting it to a ground wire that runs the length of the pole. According to the applicant, creating a permanent physical and electrical separation effectively creates a break in the connectivity of the line such that personnel would not inadvertently cause a switching error or an unsafe situation.

Insert

Figure 2-9 Transmission Line Grounding and Snubbing

The Santiago Peak Communications Site is located in the Cleveland National Forest on Santiago Peak in the Santa Ana Mountains, approximately 11 miles south of Corona, California. One section of the Santiago Peak Communication Site is located in Riverside County and the other in Orange County. Only the Orange County section of the Santiago Peak Communications Site would be accessed for proposed Alberhill Project activities. The applicant would access the communications site from Indian Truck Trail Road, which intersects with I-15 near Lee Lake, about 2.5 miles northwest of the proposed Alberhill Substation site.

Fiber Optic Lines and Telecommunications Equipment

The proposed Alberhill Substation would be connected to an existing fiber optic system serving Valley, Mira Loma, and Serrano substations (Figure 1-1) overhead along the Serrano–Valley 500-kV Transmission Line (Figure 2-2b). To connect the five 115/12-kV substations that would be transferred to the proposed Alberhill 115-kV System, new fiber optic cable would be installed overhead along the 115-kV segments specified in Table 2-2 and shown in Figure 2-5.

Trenching outside the footprint of the Alberhill (proposed), Skylark, and Newcomb substations to the nearest suitable utility pole would be required as shown in Figures 2-2x and 2-2x. Trenching to install fiber optic line underground would also be required at several locations along Mission Trail Road, Lemon Street, and Murrieta Road (Figures 2-2x and 2-2x). New telecommunications equipment would be installed within the telecommunications rooms at the Serrano, Barre, Walnut, Mira Loma, Serrano, Ivyglen, Fogarty, Skylark, Tenaja, Newcomb, and Valley substations to facilitate the new telecommunications connections. Telecommunications systems would also be upgraded at the Box Springs Communications Site, which is located northwest of the City of Moreno Valley, California, and the applicant's Irvine Operations Center in southeastern Irvine, California.

2.3.2.5 Access Roads

Each of the proposed 500-kV transmission line tower sites would require 24-hour vehicular access during operation of the proposed Alberhill Project for emergency and maintenance activities. The applicant would install gates to restrict general and recreational vehicular access roads. The applicant would construct approximately 6.1 miles of new or modified access roads to access the proposed 500-kV transmission line structures (Table 2-6, Figure 2-2x).

~~A short (approximately 325 feet long) access road would also be required in the hillside area near Lake View Drive along 115-kV Segment ASP5.~~ The ~~other~~ proposed Alberhill 115-kV segments would not require new or modified access roads.

Access road widths would vary as described in Section 2.3.1.3 for the proposed Valley–Ivyglen Project. For the purposes of this document and to ensure that the applicant has the required flexibility needed during construction, it is assumed that any of the proposed access roads could be up to 26 feet wide. In addition, it is anticipated that additional permanent and temporary disturbance areas for vehicle turnaround and positioning would be required during access road construction due to hilly terrain along the proposed 500-kV transmission line routes. In some locations, the permanent, graded disturbance areas may be as wide as 200 feet, and the temporary disturbance areas may be as wide as 500 feet. Excess soils and vegetation from access road construction would be distributed within the permanent, graded disturbance areas adjacent to the proposed access roads or disposed of as described in Section 2.4.4.8. Refer to the disturbance calculations in Section 2.4.2.2.

2.4 Construction of the Proposed Projects

2.4.1 Schedule, Equipment, and Personnel

The estimated construction schedule for the proposed projects is provided in Table 2-3. The estimated construction schedule in miles or quantity per day for the proposed 500-kV transmission lines, 115-kV subtransmission lines, and fiber optic lines is provided in Table 2-4.

Table 2-3 Estimated Construction Schedule

Project Components	Estimated Start	Duration
ASP: 115-kV Lines (ASP1 to ASP8)	~~Spring 2016~~2017	28 months
ASP: Telecommunications	~~Spring 2016~~ Winter 2017	28 months [(a)]
VIG: 115-kV Lines (VIG1 to VIG8)	Spring 2016	~~27~~ 28 months
VIG: Telecommunications	~~Spring 2016~~ Summer 2017	~~27~~ 28 months [(a)]
ASP: Proposed Alberhill Substation	~~Spring~~Summer 2016	21 months
ASP: 500-kV Lines	~~Spring 2016~~ Summer 2017	17 months
ASP and VIG: Testing	Timing to be determined during final engineering (confirm with schedule)	~~1~~ 3 months
Estimated Operational Date (VIG)	Spring/Summer/~~Fall~~ 2018 (~~27~~ 28 months to construct)	
Estimated Operational Date (ASP)	Spring/Summer/~~Fall 2018~~ 2019 (28 months to construct)	

Sources: SCE 2011, 2013, 2014
Key: ASP = Alberhill System Project, kV = kilovolt, VIG = Valley–Ivyglen 115-kV Subtransmission Line Project,
Note: [(a)] The applicant does not anticipate that the proposed telecommunications installations would require more than 12 months to complete, but the telecommunications installations may occur at any time throughout the construction period.

Table 2-4 Daily Transmission, Subtransmission, and Fiber Optic Line Construction Schedule Estimates

Construction Activity	Estimate
500-kV Transmission Lines (Alberhill Project)	
Survey	1 mile per day
Road and landing work	0.5 miles per day (2 structure pads per day)
LST removal	0.75 towers per day
Install LST foundation	0.5 towers per day
LST haul/delivery	1 tower per day
LST assembly	0.5 towers per day
LST erection	1 tower per day
Wire stringing	0.35 miles per day
Restoration	0.5 miles per day
115-kV Subtransmission Lines (Valley–Ivyglen and Alberhill Projects)	
Surveys	1 mile per day
Staging yards	Duration of construction
Right-of-way clearing	0.25 miles per day (4 structure pads per day)
Guard structure installation	5 structures per day
Remove existing wood poles	5 poles per day
Remove existing LWS poles	2 poles per day
TSP foundation	0.5 foundations per day
TSP assembly	1 pole per day
TSP erection	1 pole per day
Hybrid pole assembly	1 pole per day
Hybrid pole erection	1 pole per day
LWS pole haul/delivery	5 poles per day

Table 2-4 Daily Transmission, Subtransmission, and Fiber Optic Line Construction Schedule Estimates

Construction Activity	Estimate
LWS pole assembly	4 poles per day
LWS pole erection	4 poles per day
Wood pole installation	4 poles per day
Shoofly LWS pole haul/delivery	5 poles per day
Shoofly LWS pole assembly	4 poles per day
Shoofly LWS pole installation	4 poles per day
Underground vault installation	0.33 vaults per day
Duck bank installation	200 feet per day
Install underground cable	350 feet per day
Conductor and overhead ground wire installation	0.33 mile per day
Guard structure removal	6 structures per day
Restoration	1 mile per day
Fiber Optic Lines (Valley–Ivyglen and Alberhill Projects)	
Trenching	350 feet per day
Duct bank installation	350 feet per day
Manhole installation	2 manholes per day
Wire stringing	5,000 feet per day

Sources: SCE 2011, 2013, 2014
Key: kV = kilovolt, LST = Lattice Steel Tower, LWS = Lightweight Steel, TSP = Tubular Steel Pole, Hybrid pole = TSP with prefabricated concrete base section

Construction activities would be scheduled during daylight hours, Monday through Saturday. In the event that construction activities are required to take place outside of the days and hours specified by local ordinance, the applicant would take actions consistent with Section 2.6 Project Commitment H. Construction would be performed by either the applicant's construction crews or contractors, depending on the availability of the applicant's construction personnel at the time of construction. If the applicant's transmission and telecommunications construction crews are used, crews would likely be based at one of the applicant's local facilities, such as Valley Substation (Menifee Service Center) or Wildomar Service Center. Contractor construction personnel would be managed by the applicant's construction management personnel.

For the proposed Alberhill Project, it is conservatively estimated that a maximum of ~~145~~ 200 workers per day ~~(100 workers at the Substation site and 45 workers at Staging Areas)~~ would be working during construction. For the proposed Valley–Ivyglen Project, the applicant estimates that up to 125 workers per day would be required during construction. Equipment used for project activities is contained in the air quality calculations in Appendix B.

2.4.1.1 Alberhill Project Schedule for Water Pipeline Relocation and Roadway Crossings

The applicant estimates that it would take ~~two weeks~~ three months to relocate the 27-inch agricultural water pipeline described in Section 2.3.2.1. During the relocation period, one lane of Concordia Ranch Road and Temescal Canyon Road would be closed during the daytime. At night, both lanes would be open. ~~Temescal Canyon Road would not be closed for relocation of the water pipeline.~~ Ingress and egress along Love Lane would not be obstructed, although Love Lane would be relocated west, away from the proposed Alberhill Substation site, as described in Section 2.3.2.1.

Relocation of the pipeline would be conducted in accordance with Elsinore Valley Municipal Water District requirements and encroachment permits obtained from the County of Riverside for crossing

public ROWs. Traffic control would be implemented as described in Section 2.4.4.4 and in accordance with local ordinances and city permit conditions. See also, Section 2.4.4.6.

2.4.2 Land Disturbance for the Proposed Projects

2.4.2.1 Land Disturbance for the Valley–Ivyglen Project

Construction of the proposed Valley–Ivyglen Project would result in the disturbance of approximately 592.8 acres of land along the 115-kV subtransmission line route. The applicant estimates that approximately 140.0 acres would be disturbed permanently. Land disturbance estimates from implementation of the proposed Valley–Ivyglen Project are summarized in Table 2-5.

Table 2-5 Land Disturbance Estimates: Valley–Ivyglen 115-kV Subtransmission Line

Component (Quantity)	Disturbed Area Dimensions (length x width in feet)	Acres Disturbed During Construction	Acres Temporarily Disturbed	Acres Permanently Disturbed [a]
Install lightweight-steel poles (494)	150 x 75	127.6	102.9	24.7
Install tubular steel poles (116)	200 x 150	~~56.9~~79.8	~~49.9~~72.8	7.0
Install hybrid poles (4)	150 x 75	1.0	0.8	0.2
Install guy poles (26)	50 x 50	1.5	1.5	<0.1
Install wood poles (12)	100 x 100	2.8	2.2	0.6
Remove wood poles (90 subtransmission line, 280 distribution line) [b]	150 x 75	95.6	95.6	0.0
Install and remove shoofly line wood poles (10) [c]	150 x 75	2.6	2.6	0.0
Install and remove guard structure wood poles (98) [d]	50 x 75	8.4	8.4	0.0
Trenching for 115-kV line in new underground conduit (115-kV Segment VIG1)	300 x 300	2.1	2.1	0.0
Trenching for 115-kV line in new underground conduit (115-kV Segment VIG8)	10,094 x 50	11.6	11.6	0.0
Install underground vaults (8)	150 x 150	4.1	4.1	<0.1
Trenching for fiber optic line in new underground conduit	9,995 x 50	11.5	11.5	0.0
Staging Areas VIG3 to VIG9 [e]	n/a	67.1	67.1	0.0
Access road construction	14 miles x 22-feet [f]	95.0	0.0	95.0
Additional disturbance area for access road construction along 115-kV Segments VIG1 and VIG6	1 mile x 200-feet [g]	24.0	12.0	12.0
Retaining walls, 8 feet high for access roads	2,200 feet x 20	1.0	0.5	0.5

Table 2-5 Land Disturbance Estimates: Valley–Ivyglen 115-kV Subtransmission Line

Component (Quantity)	Disturbed Area Dimensions (length x width in feet)	Acres Disturbed During Construction	Acres Temporarily Disturbed	Acres Permanently Disturbed [a]
Sites for conductor stringing, pulling, tensioning, or splicing (90)	up to 500 x 100 [h.]	77.5	77.5	0.0
Sites for fiber optic line stringing, pulling, tensioning, or splicing (90)	60 x 20 [h.]	2.5	2.5	0.0
Total disturbance		~~592.8~~615.8 acres	~~452.8~~475.7 acres	140.0 acres

Sources: SCE 2013, 2014
Key: kV = kilovolt, VIG = Valley–Ivyglen
Notes:

[a] The estimated permanent disturbance areas that would be maintained around each of the proposed structures are as follows: lightweight-steel and wood poles = 2,178 square feet each (less than 75-feet long by 30-feet wide); tubular steel and hybrid poles = 2,614 square feet each (less than 75-feet long by 35-feet wide); guy poles = 9 square feet each (approximately 3-feet long by 3-feet wide). Vaults are conservatively assumed to result in a disturbed area of 400 square feet (20 feet by 20 feet) for maintenance access.

[b] Includes trenching for the replacement of 35 distribution-line riser poles as described in Section 2.4.5.3.

[c] A shoofly is a temporary electrical line used during construction activities to maintain electrical service to an area while allowing sections of a permanent line that requires modification to be taken out of service.

[d] Guard structures are temporary structures designed to catch the conductor should it drop below the required stringing height.

[e] Staging Areas VIG1 and VIG2 are located on applicant-owned property near the Valley Substation and are already disturbed and used for equipment and materials staging purposes. These two staging areas would not be restored after construction as they would continue to be used by the applicant for operations activities and other projects that may occur.

[f] Approximately 14 miles of new or modified access roads would be constructed. Access road widths would vary from approximately 24 feet wide to 28 feet wide (including shoulders) depending on terrain, curves, drainage, and turnaround requirements. In some locations, the permanent graded area would be as wide as 100 feet, and temporary disturbance areas may be as wide as 200 feet. The applicant estimates that approximately 70 percent of the access roads would be 18 feet wide (or less). For the land disturbance estimates provided in this table, it is estimated that each access road would be approximately 22 feet wide.

[g] Additional permanent and temporary disturbance areas are anticipated to be required for vehicle turnaround and positioning during access road construction due to hilly terrain along sections of 115-kV Segments VIG1 and VIG6. Permanent, graded disturbance areas may be as wide as 100 feet, and temporary disturbance areas may be as wide as 200 feet. For the land disturbance estimates provided in this table, it is estimated that up to a total of 1 mile along 115-kV Segments VIG1 and VIG6 would require these additional land disturbance dimensions.

[h] The applicant estimates that the wire-stringing sites would range in length from 200 feet to 500 feet and range in width from 34 feet to 100 feet. For the land disturbance estimates provided in this table, it is estimated that each wire-stringing site would be approximately 375 feet long by 100 feet wide. The applicant estimated that each conductor reel would hold approximately 6,500 feet of conductor for the disturbance estimate provided and noted that topography and route design would also affect the number of sites needed. The same estimate (90 sites) was applied for the number of fiber optic line wire-stringing sites that may be needed.

Land disturbance for 115-kV Segments VIG1 through VIG8 would occur primarily within public ROW but also on private property in some locations. There is no standard construction ROW width for the installation of subtransmission lines. The applicant would be required to obtain all necessary permits, easements, and approvals from local agencies and private parties prior to construction.

2.4.2.2 Land Disturbance for the Alberhill Project

Construction of the proposed Alberhill Project would result in the disturbance of approximately 336 acres of land at the proposed Alberhill Substation site, along the 500-kV transmission line routes, where access roads would be expanded or constructed, and along the 115-kV subtransmission line routes. Approximately 85 acres would be disturbed permanently. Land disturbance estimates from implementation of the proposed Alberhill Project are summarized in Tables 2-6 and 2-7.

Table 2-6 Land Disturbance Estimates: Alberhill Substation, 115-kV Segment ASP1, and 500-kV Lines

Component (Quantity)	Disturbed Area Dimensions (length x width in feet)	Acres Disturbed During Construction [a.]	Acres Restored	Acres Permanently Disturbed
Proposed Alberhill Substation, 115-kV Segment ASP1, and Import Soil Source Area [b.]		42.91	0	42.9
500-kV Transmission Lines				
Remove 500-kV tower (1)	150 x 150	0.5	0.5	0.0
Install 500-kV towers (12)	200 x 200 [c.]	11.0	8.6	2.4
500-kV wire-stringing (5 sites) [d.]	100 x 50	0.6	0.6	0.0
500-kV stringing/tensioning (3 sites)	400 x 150	4.1	4.1	0.0
New access roads (6.1 miles)	6.1 miles x 26 feet [e.]	19.2	0	19.2
Staging areas [f.]	N/A	~~10.6~~19.4	~~10.6~~19.4	0.0
Additional disturbance area for access road construction along proposed 500-kV	3 mile x 500-feet [g.]	181	72.4	108.6
500-kV transmission lines total		~~46.00~~227	~~24.4~~96.3	~~21.6~~130.2
Total disturbance		~~88.9~~269.4 acres	~~24.4~~96.3 acres	~~64.5~~173.1 acres

Sources: SCE 2011, 2013

Key: ASP = Alberhill System Project, kV = kilovolt, ROW = right-of-way

Notes:

[a] The disturbed acreage calculations are estimates based on the applicant's work area requirements and width of the proposed ROW.

[b] As described in Section 2.4.6.2, the applicant would either truck in 80,000 cubic yards of soil or excavate the soil from a 5.2-acre area located adjacent to the northeast side of the proposed Alberhill Substation site (Figure 2-2x). The Import Soil Source Area is located under the proposed 500-kV transmission line routes near 500-kV Towers SA1 and VA1. For the purposes of this document, it is assumed that regardless of the import soil option selected by the applicant, the 5.2-acre area would be permanently disturbed.

[c] The dimensions of the disturbed area for this component include the laydown area for assembly of the tower. Tower installation may require the construction of permanent crane pads. If pads are required, they would each occupy an area of approximately 50 feet by 50 feet and may extend outside of the 200-foot-wide ROW in proximity to some 500-kV tower locations. The total area of disturbance, however, would not exceed ~~200~~ 40,000 square feet for each 500-kV tower.

[d] To minimize the disturbance area, a technique called *slack spanning* would be used (Section 2.4.5.6,).

[e] Access road widths would vary from approximately 24 feet wide to 28 feet wide (including shoulders) depending on terrain, curves, drainage, and turnaround requirements. In some locations, the permanent graded area would be as wide as 100 feet and temporary disturbance areas may be as wide as 200 feet. The applicant estimates that approximately 70 percent of the access roads would be 18 feet wide (or less). For the land disturbance estimates provided in this table, it is estimated that each access road would be approximately 26 feet wide.

[f] For the purposes of this document, it is assumed that the applicant would use Staging Area ASP1 and ASP2 as well as the Primary Staging Area (the footprint of the Alberhill Substation site). Acreage in this row is only ASP1 and ASP2; the Substation Site is included in a separate row. See Section 2.4.3.2.

[g] Additional permanent and temporary disturbance areas are anticipated to be required for vehicle turnaround and positioning during access road construction due to hilly terrain along the proposed 500-kV transmission line routes. Permanent, graded disturbance areas may be as wide as 200 feet, and temporary disturbance areas may be as wide as 500 feet. For the land disturbance estimates provided in this table, it is estimated that up to a total of 3 miles of access roads to the proposed 500-kV would require these additional land disturbance dimensions.

Table 2-7 Land Disturbance Estimates: 115-kV Segments ASP1.5 through ASP8

Component (Quantity)	Disturbed Area Dimensions (length x width in feet)	Acres Disturbed During Construction	Acres Restored	Acres Permanently Disturbed [a.]
Install lightweight steel poles (336)	150 x 75 [e.]	86.8	70.0	16.8
Install tubular steel poles (36)	200 x 150	24.8	22.6	2.2
Install wood poles (3)	100 x 100	0.7	0.5	0.2
Install stub pole (1)	100 x 100	0.2	0.1	0.1
Install H-frame structures (10)	150 x 50 [e.]	1.7	1.2	0.5
Remove lightweight steel poles (3)	150 x 75	0.8	0.8	0.0

Table 2-7 Land Disturbance Estimates: 115-kV Segments ASP1.5 through ASP8

Component (Quantity)	Disturbed Area Dimensions (length x width in feet)	Acres Disturbed During Construction	Acres Restored	Acres Permanently Disturbed [a.]
Remove tubular steel poles (1)	150 x 75	0.3	0.3	0.0
Remove wood poles (256)	150 x 75	66.1	66.1	0.0
Remove H-frame structures (10)	100 x 50	1.8	1.8	0.0
Install and remove guard structure wood poles (3) [b.]	75 x 50	0.3	0.3	0.0
115-kV wire stringing (9 sites)	200 x 50	2.1	2.1	0.0
Staging areas [d.]	N/A	44.6	44.6	0.0
Trenching for fiber optic line installation	5,808 x 1.5	0.2	0.2	0.0
Access Road on 115-kV Segment ASP5	325 x 26	0.2	0.0	0.2
115-kV subtransmission lines total		246.8 acres	210.6 acres	20.0 acres

Sources: SCE 2011, 2013
Key: ASP = Alberhill System Project, kV = kilovolt, LWS = Lightweight Steel, ROW = right-of-way, TSP = Tubular Steel Pole
Notes:
[a] The estimated permanent disturbance areas that would be maintained around each of the proposed structures are as follows: lightweight steel, stub, and wood poles = 2,178 square feet each (less than 75 feet long by 30 feet wide); tubular steel poles = 2,614 square feet each (less than 75 feet long by 35 feet wide); guy poles = 9 square feet each (approximately 3 feet long by 3 feet wide).
[b] Guard structures are temporary structures designed to stop the movement of a conductor should it drop below the required stringing height.
[c] The proposed H-frame structures would be constructed of two LWS poles.
[d] For the purposes of this document, it is assumed that the applicant may use any of the staging areas identified by the applicant for construction of the proposed 115-kV subtransmission lines (i.e., all staging areas except Staging Area ASP2). The Primary Staging Area (the footprint of the Alberhill Substation site) is not included in this total because it would already be disturbed as part of substation construction. This is a conservative estimate. Fewer staging areas would likely be required during construction. See Section 2.4.3.2.
[e] The dimensions of the estimated disturbed area for TSP and LWS pole construction include the laydown area for assembly of the structure.

The applicant has acquired approximately 124 acres of land and would use about 34 acres for construction of the proposed Alberhill Substation and 115-kV Segment ASP1 as follows:

- 24 acres of land would be within the substation wall (Figure 2-7).
- 4 acres of land immediately outside the substation perimeter wall to the west, east, and south would be used for subtransmission and transmission line access, vehicular access, landscaping, water pipeline relocation, and buffer.[11]
- 6 acres located outside of the north substation wall, plus the northeast and northwest corners would be primarily dedicated to the control of storm water runoff.

If the applicant elects to excavate 5.2 acres of land adjacent to the northeast corner of the proposed Alberhill Substation site to obtain fill required for grading (Figure 2-2x), then the land required for construction of the proposed substation would increase from 34 acres to approximately 40 acres (Section 2.4.6.2). In addition, pending approval of the proposed Alberhill Project, the applicant would acquire 99 acres in easement and/or in fee outside the proposed Alberhill substation from four private property owners and Riverside County for construction of the 500-kV transmission lines. Land disturbance for the proposed Alberhill Substation and 500-kV transmission lines would be away from public streets, but each 500-kV transmission line would require a 200-foot-wide ROW.

[11] The buffer would be a 10-foot-wide belt maintained around the substation's proposed perimeter wall that excludes structures and vegetation that could be used to access the inside of the proposed substation.

Land disturbance for 115-kV Segments ASP1.5 through ASP8 would occur primarily within public ROW but also on private property in some locations. There is no standard construction ROW width for the installation of subtransmission lines. The applicant would be required to obtain all necessary permits, easements, and approvals from local agencies and private parties prior to construction.

2.4.2.3 115-kV General Disturbance Areas

Final engineering for the proposed projects has not been completed. For this reason, the applicant provided large, general disturbance areas for the proposed projects to ensure that the required flexibility would be available during construction and for final siting of the proposed 115-kV facilities. The Alberhill 115-kV General Disturbance Area is approximately 570 acres, and the Valley–Ivyglen 115-kV General Disturbance Area is approximately 1,600 acres (Figures 2-6a to 2-6x). A general disturbance area was not identified for the other components of the proposed Alberhill Project (i.e., the proposed Alberhill Substation and 500-kV transmission lines) because more detailed final engineering was not provided by the applicant prior to completion of this document.

Disturbance areas for the proposed projects would typically vary between 50 feet wide and 150 feet wide along the proposed 115-kV routes (50 feet to 75 feet on each side of centerline) depending on the type of structure to be installed or construction activity to be completed (Tables 2-5 and 2-7). In some locations, however, the potential disturbance area evaluated within this document is substantially wider (e.g., 1,000 or more feet wide) because of anticipated access constraints and because final engineering has not been completed. The actual amount of disturbance in these locations is anticipated to be substantially less than the area evaluated.

The size of the 115-kV disturbance area evaluated in this document is specific to the resource area that may be impacted. For impacts on biological resources, for example, it is assumed that the entire 115-kV general disturbance area would be disturbed. This approach ensures that the evaluation accounts for the full extent of impacts that could occur to various species. For impacts on air quality, however, it is not assumed that the entire 115-kV general disturbance area would be disturbed. The applicant provided reasonable estimates for how much land would actually be disturbed (Tables 2-5 and 2-7; Appendices C1 and C2).

Activities that may occur within the 115-kV general disturbance area could include, but would not be limited to, equipment and materials staging, equipment and materials laydown adjacent to the proposed 115-kV structures, access road construction, removal, foundations, assembly, erection and wire stringing. In addition, helicopter landing and materials delivery by helicopter could occur within the Valley–Ivyglen 115-kV General Disturbance Area along 115-kV Segments VIG1 and VIG4 to VIG7. Each of the staging areas described in Section 2.4.3.1 that may be used for construction of the proposed 115-kV facilities are included within the 115-kV general disturbance area respective to the associated project. It is assumed that footprint of each staging area would be fully disturbed. The locations where other construction activities would occur within the general disturbance areas have not yet been identified by the applicant.

2.4.3 Staging Areas for the Proposed Projects

Temporary staging areas would be used to stage equipment and materials during construction. The areas would be used as a reporting location for workers, and for vehicle and equipment parking, worker parking, and material storage. The areas may have offices for supervisory and clerical personnel. Routine construction equipment maintenance would be conducted at staging areas. Materials and equipment typically managed at staging areas would include, but not be limited to, construction trailers, construction

equipment, steel, conductor, wire reels, cable, hardware, insulators, signage, fuel, joint compound, and other consumable materials.

Staging areas may also be established at the following substation sites: Ivyglen, Fogarty, Skylark, Alberhill, Newcomb, and Valley. The applicant has committed to the following with regard to staging areas:

- Delivery activities requiring extensive street use would be scheduled to occur during off-peak traffic hours to the extent feasible in accordance with applicable local ordinances.
- All materials associated with construction of the proposed projects would be delivered by truck or helicopter to each work site from an established staging area. Helicopters may land at the proposed Alberhill Substation site, Staging Areas ASP1 to ASP3, and any of the Valley–Ivyglen Project staging areas except Staging Area VIG5.
- Preparation of temporary staging areas would include the application of gravel or crushed rock and the installation of temporary perimeter fencing.
- If necessary, the applicant would hire a local security company to provide 24-hour attendance at staging areas during construction.
- The maximum number of workers reporting to staging areas is not expected to exceed 100 at any one time.
- Final siting of staging areas would depend on the availability of appropriately zoned property that is suitable for this purpose.

If, after certification of this document, it is determined that staging areas other than those discussed in this section would be needed, additional environmental analysis pursuant to CEQA may be required. Wire-stringing sites for the 500-kV and 115-kV lines are discussed in Section 2.4.5.6.

2.4.3.1 Valley–Ivyglen Project Staging Areas

The applicant stated that the nine staging areas, including the applicant's Menifee Service Center detailed in Table 2-8 would be used for staging activities during construction of the proposed Valley–Ivyglen Project. The location of each staging area is shown on Figures 2-2a through 2-2 .

Table 2-8 Valley–Ivyglen Project Staging Areas (Combination of 3 to 4 yards from this list to be used based upon availability and at discretion of awarded contractor)

Staging Site	Size/Land Type	Location
Staging Area VIG2[a]	5.4 acres/disturbed	South of Valley Substation adjacent to Menifee Road within the City of Menifee.
Staging Area VIG3	3.5 acres/disturbed	Approximately 0.10 miles east of the intersection of SR-74 and Ethanac Road in unincorporated Riverside County.
Staging Area VIG4	2.8 acres/disturbed	Approximately 0.06 miles east of the intersection of SR-74 and Ethanac Road in unincorporated Riverside County.
Staging Area VIG5	1.6 acres/disturbed	Southwest of the intersection of Central Avenue and El Toro Cut Off Road in the City of Lake Elsinore.
Staging Area VIG6	5 acres/disturbed	Southwest of the intersection of Collier Avenue and Chaney Street in the City of Lake Elsinore.
~~Staging Area VIG7~~	~~11 acres/vacant~~	~~Southeast of the intersection of Collier Avenue and Riverside Drive (SR-74) in the City of Lake Elsinore.~~

Commented [A2]: Staging yard no longer available

Table 2-8 Valley–Ivyglen Project Staging Areas (Combination of 3 to 4 yards from this list to be used based upon availability and at discretion of awarded contractor)

Staging Site	Size/Land Type	Location
Staging Area VIG8	3.8 acres/disturbed	Southwest of the intersection of Collier Avenue and Riverside Drive (SR-74) in the City of Lake Elsinore.
Staging Area VIG9[a]	11 acres/disturbed	Adjacent to Horse Thief Canyon Road, approximately 0.13 miles southwest of I-15, in unincorporated Riverside County.
Staging Area VIG10	12.1 acres/disturbed	West of Menifee Road and south of Case Road, on north side of Rouse Road in unincorporated Riverside County.
Staging Area VIG11	8.5 acres/disturbed	North of Highway 74 on Crater Drive in unincorporated Riverside County.
Staging Area VIG12	13.0 acres/disturbed	On the corner of Highway 74 and Rosetta Canyon Drive in the City of Lake Elsinore.
Staging Area VIG13 (near Staging Area VIG6)	5.0 acres/disturbed	On the southeast corner of Chaney Street and West Minthron Street in the City of Lake Elsinore.
Staging Area VIG14 (near Staging Area VIG6)	17.2 acres/disturbed	.17 miles south of W Minthorn Street on the northwest side of Chaney Street in the City of Lake Elsinore.

Note:
[a] Staging site would also be used for the proposed Alberhill Project, see Staging Area ASP3 in Table 2-9.

2.4.3.2 Alberhill Project Staging Areas

The applicant stated that the Alberhill Substation site and the following seven staging areas detailed in Table 2-9 would be used for staging activities during construction of the proposed Alberhill Project. The location of each staging area is shown on Figures 2-2a, 2-2d, and 2-2g.

Table 2-9 Alberhill Project Staging Areas

Staging Site	Size/ Land Type	Location
Primary Alberhill Staging Area	42.9 acres/disturbed	Within the footprint of the Alberhill Substation.
Staging Area ASP1	10.3 acres/disturbed	At the end of Concordia Ranch Road, 0.5 miles east of the proposed Alberhill Substation site in unincorporated Riverside County.
Staging Area ASP2	0.3 acres/disturbed	Between 500-kV Towers SA6 and VA6 within the existing Serrano–Valley 500-kV Transmission Line ROW in unincorporated Riverside County.
Staging Area ASP3[a]	7.4 acres/disturbed	Approximately 1 mile west of the proposed Alberhill Substation site, along Horse Thief Canyon Road in unincorporated Riverside County.
Staging Area ASP4	6.2 acres/vacant	West of the intersection of Lewis Street and Mission Trail Road within the City of Lake Elsinore.
Staging Area ASP5	6.2 acres/vacant	Adjacent to the southern side of Skylark Substation within the City of Wildomar.
Staging Area ASP6	3.7 acres/vacant	Approximately 0.25 miles south of Skylark Substation, adjacent to Mission Trail Road within the City of Wildomar.
Staging Area ASP7[a]	10.5 acres/disturbed	South of Valley Substation adjacent to Menifee Road within the City of Menifee.
Staging Area ASP8 (near Alberhill subtrans)	8.8 acres/disturbed	.11 miles southwest of Lakeshore Drive and .04 miles west of Diamond Drive in the City of Lake Elsinore.

Note:
[a] A staging site would also be used for the proposed Valley–Ivyglen Project. See Staging Area VIG2 in Table 2-8.

2.4.4 General Construction Plans, Methods, and Materials

2.4.4.1 Water Use during Construction

Various construction activities for the proposed projects would require the use of water, including dust suppression for ground disturbing activities, drilling, and concrete mixing.

During construction of the proposed Valley–Ivyglen Project, approximately ~~36~~ 56 million gallons of water would be required. Water trucks would be required for up to 10 hours per day for the duration of the proposed Valley–Ivyglen Project. The local water agency would supply all of the water used for construction of the proposed projects.

During construction of the proposed Alberhill Substation, approximately 250,000 gallons of water per day would be required for earth moving activities (dust control) and moisture conditioning of soils for compaction purposes. Combined, it is estimated that approximately 37.5 million gallons of water would be required for these activities (250,000 gallons of water per day for 150 days). In addition, approximately ~~1.53~~ 17.5 million gallons of water would be required to control fugitive dust during construction of the 500-kV transmission lines and 115-kV subtransmission lines.

2.4.4.2 Concrete Use

Each 500-kV tower would be constructed on four drilled concrete foundations. Steel-reinforced cages and stub angles would be installed into the auger holes and then concrete would be poured. A similar method would be used for 115-kV TSP construction, but less concrete is required for a TSP foundation.

Concrete foundations in soft or loose soil that extend below the groundwater level may require that the borehole be stabilized with mud slurry during drilling. If this is the case, the applicant would mix and pump a mud slurry into the borehole after drilling to prevent the sidewalls from sloughing. The concrete for the foundation would then be pumped to the bottom of the hole, displacing the mud slurry. The mud slurry that is brought to the surface is typically collected in a pit adjacent to the foundation and then pumped out of the pit to be reused or discarded at an offsite disposal facility.

A typical 500-kV tower requires 25 to 100 cubic yards of concrete. Concrete samples would be drawn at the time of pour and tested to ensure engineered strengths were achieved. According to the applicant's specification, the concrete mix used typically takes 20 working days to cure to an engineered strength. This strength is verified by controlled testing of sampled concrete. Once this strength has been achieved, crews would be permitted to commence with erection of the steel tower. The applicant would obtain the concrete from an existing local concrete supply facility.

2.4.4.3 Storm Water Pollution Prevention Plans

The applicant would be required to obtain National Pollutant Discharge Elimination System permits because construction of the proposed projects would disturb surface areas greater than 1 acre. To acquire the permit, the applicant would prepare SWPPPs for each of the proposed projects that include project information, monitoring and reporting procedures, and Best Management Practices (BMPs). The BMPs would cover activities including dewatering procedures, storm water runoff quality control measures, and concrete waste management. The SWPPPs would be based on final engineering design and applicable to all components of the proposed projects.

2.4.4.4 Traffic Control and Lane Closure

Construction activities completed within or along public streets would require the use of a traffic control service and may require lane closures. Very short closures of roads may occasionally be required for equipment and personnel repositioning for safety. Traffic control would be conducted in accordance with local ordinances and permit conditions. Such traffic control measures are typically consistent with those published in the *California Joint Utility Traffic Control Manual* (California Inter-Utility Coordinating Committee 2010).

Valley–Ivyglen Project Road Closures

Construction of the proposed Valley–Ivyglen Project would result in roadway closures/lane closures at locations where the construction activities would be located within or immediately adjacent to the ROW of public streets and highways:

- 115-kV Segment VIG2 would be installed adjacent to SR-74
- 115-kV Segment VIG3 would be installed adjacent to Third Street and Conard Avenue.
- 115-kV Segment VIG4 would be installed adjacent to Third Street, Pasadena Avenue, SR-74 (Riverside Drive), and Baker Street in the City of Lake Elsinore.
- 115-kV Segment VIG5 would be installed adjacent to Lake Street between Nichols Road and Temescal Canyon Road in the City of Lake Elsinore and unincorporated western Riverside County. Segment 5 would then continue along Temescal Canyon Road until reaching Hostettler Road.
- 115-kV Segment VIG7 would be installed adjacent to De Palma Road.
- Construction of approximately 0.4 miles of 115-kV Segment VIG7 would occur along Temescal Canyon Road.
- 115-kV Segment VIG8 would be installed adjacent to the northbound lane of Temescal Canyon Road.

Temporary closures along these alignments may be necessary to facilitate construction activities occurring into or close to the public roadway. Installation of these segments would require temporary lane closures between two and four days during pole installation and/or installation and removal of guard structures. These lane closures would be limited to the areas of active construction.

The modified stringing setup areas located adjacent to or within roadways would also require lane closures. Lane closures would be temporary and short term, and likely limited to a day at a time during stringing activities. In addition, the applicant may use flaggers to control traffic during conductor and telecommunications wire installation activities in locations where guard structures are not used. These delays would last approximately 15 minutes per conductor for a total of up to one hour in some locations. Additionally, stringing activities would require temporary traffic stops along local roads as well as I-215, I-15, and SR-74.

Approximately 1.9 miles of new underground conduit would be installed as part of the Proposed Modifications to accommodate the telecommunications and 115-kV lines. Similar to the underground portions of the subtransmission line, the installation of these facilities would require temporary lane closures. These closures would last approximately two months, would be dispersed across the entire underground telecommunications system alignment, and would require agency coordination through the encroachment permit process.

Alberhill Project Road Closures

Construction of the proposed Alberhill Project would result in roadway closures/lane closures at several locations where the construction activities would be located within or immediately adjacent to the ROW of public streets and highways:

- 115-kV Segments ASP1 and ASP1.5 would be constructed adjacent to Temescal Canyon Road.
- 115-kV Segment ASP2 would be constructed adjacent to Temescal Canyon Road, Lake Street, Nichols Road, Baker Street, SR-74 (Riverside Drive), Pasadena Street, and Third Street
- 115-kV Segment ASP3 would be constructed adjacent to Collier Avenue.
- 115-kV Segment ASP4 would be constructed adjacent to East Hill Street, Pottery Street, Avenue 6, Auto Center Drive, Casino Drive, Malaga Road, and Mission Trail.
- 115-kV Segment ASP5 would be constructed adjacent to Waite Street, Almond Street, Lemon Street, Lost Road, Beverly Street, and Bundy Canyon Road.
- 115-kV Segment ASP6 would be constructed adjacent to Murrieta Road.
- 115-kV Segment ASP7 would be constructed adjacent to Murrieta Road.

Temporary closures along these alignments may be necessary to facilitate construction activities occurring into or close to the public roadway. Installation of these segments would require temporary lane closures between two and four days during pole installation and/or installation and removal of guard structures. These lane closures would be limited to the areas of active construction.

Lane closures would be temporary and short term, likely limited to a day at a time during stringing activities. In addition, the applicant may use flaggers to control traffic during conductor and telecommunications wire installation activities in locations where guard structures are not used. These delays would last approximately 15 minutes per conductor for a total of up to one hour in some locations. Additionally, stringing activities would require temporary traffic stops along local roads as well I-15 and SR-74.

Approximately 1.1 miles of new underground conduit would be installed as part of the proposed project to accommodate the telecommunications and 115-kV lines. Similar to the underground portions of the subtransmission line, the installation of these facilities would require temporary lane closures. These closures would last approximately two months, would be dispersed across the entire underground telecommunications system alignment, and would require agency coordination through the encroachment permit process.

Relocation of the EVMWD pipeline would require closure on one road. The reroute of the pipeline would cross Concordia Ranch Road near its intersection with Temescal Canyon Road. One lane of Concordia Ranch Road would be kept open at all times during the day, with both lanes being open at night. One lane of traffic would be closed while work in that area is completed. Once work in that area is completed, then that lane would be open and the opposite lane would be closed while work is completed on the other side of the road. The rerouted pipeline would run parallel to Temescal Canyon Road ~~and would not require closure of Temescal Canyon Road~~. Love Lane would be relocated to the west in the area where the relocated pipeline is planned to cross the current Love Lane alignment. Love Lane would therefore remain open for the entirety of construction.

2.4.4.5 Nighttime Construction

Under normal circumstances, construction of the proposed projects would occur during daylight hours. However, there is a possibility that construction would occur at night and temporary lighting would be required. The California Independent System Operator or California Department of Transportation, for example, may require that conductor stringing over highways occur at night. In the event of nighttime construction, the applicant would use lighting to protect the safety of the construction workers but would orient the lights to minimize effects on sensitive receptors.

2.4.4.6 Identification of Underground Utilities

By California law, prior to conducting any excavation, including drilling boreholes for foundations or LWS poles, the applicant or its contractor would be required to contact Underground Service Alert to identify underground utilities in the construction area. If other utilities are located in the construction area, the applicant would contact the owner of the utility to discuss protection and avoidance measures. Exploratory excavations (potholing) may be required to verify the location of existing utilities.

2.4.4.7 Hazardous Materials Use and Hazardous Waste Disposal

The SWPPPs prepared for the proposed projects would provide information about the locations where hazardous materials would be stored during construction and the protective measure, notification, and cleanup requirements for accidental spills or releases of hazardous materials. They would also contain cleanup requirements for accidental spills or releases of hazardous materials. The applicant would make ~~Material~~ Safety Data Sheets for all hazardous materials in use at the construction site available to all site workers in case of emergency.

Construction and operation of the proposed Valley–Ivyglen Project would require limited use of hazardous materials (e.g., fuels, lubricants, and cleaning solvents). The applicant would store, handle, and use hazardous materials in accordance with applicable regulations. The applicant would dispose of hazardous waste at an appropriately licensed facility.

Similarly, construction and operation of the proposed Alberhill Project would require the same types and amounts of hazardous materials as the proposed Valley–Ivyglen Project, with the exception of fuel for the proposed emergency backup generator, mineral oil (transformer oil) for insulating media in the 500/115-kV transformers, and battery fluid contained in batteries located in the control room at the Alberhill Substation site (Table 2-2).

The applicant would not store any other bulk fuels onsite during construction or operation of the proposed projects. Existing fuel supply facilities would be used by the applicant and its contractors. An offsite fuel supply truck may temporarily be brought onsite to support construction vehicles. Small quantities of fuel—10 to 40 gallons—would be stored onsite for gasoline powered hand tools and small portable generators.

Wood poles that are removed may be reused by the applicant, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in the lined portion of a municipal landfill certified by the associated Regional Water Quality Control Board depending on their condition and original chemical treatment. Thirty cubic yards (estimated at 6 tons) of treated wood utility poles was recovered by the applicant during horse ranch demolition activities conducted in 2011 for the proposed Alberhill Project (Section 2.4.6.1).

2.4.4.8 Waste Disposal and Recycling

Valley–Ivyglen Project

Construction would result in the generation of approximately 40 tons of various waste materials that would be recycled and salvaged as described for the proposed Alberhill Project. Construction of the proposed Valley-Ivyglen Project would generate approximately 31,873 tons of waste material that cannot be reused or recycled (e.g., wood, soil, vegetation, and sanitary waste). Waste would be generated from the removal of existing structures, shoofly (temporary 115-kV line) construction, and civil work for the proposed 115-kV structures including new access roads. The applicant would use ~~local waste management~~ applicant-approved disposal facilities for the disposal of construction waste that cannot be salvaged or recycled.

Alberhill Project

Construction of the proposed Alberhill Project would result in the generation of approximately 40 tons of various waste materials that can be recycled and salvaged. Items that may be recycled include steel (e.g., electrical towers, support beams, nuts, bolts, and washers), conductor wire, and other hardware (e.g., shackles, clevises, yoke plates, links, or other connectors used to support conductor wire). These items would be gathered by construction crews and separated into roll-off boxes. Salvageable items (i.e., conductor, steel, and hardware) would be transported to staging areas, sorted, and baled for sale through available markets.

Construction of the proposed Alberhill Project would also generate approximately 142,070 tons of waste material that cannot be reused or recycled (e.g., wood, soil, vegetation, and sanitary waste). Waste would be generated from relocation of the water line on the proposed Alberhill Substation site, removal of existing 500-kV and 115-kV structures, and civil work for the proposed 500-kV structures including the proposed access roads. Soil excavated for building and equipment foundations at the proposed Alberhill Substation site would be stockpiled during excavation and ultimately would be graded and compacted onsite. The applicant would use ~~local waste management facilities~~ applicant-approved disposal for the disposal of construction waste that cannot be salvaged or recycled.

In addition, materials that were removed from the horse ranch site in 2011 (Section 2.4.6.1) included wood, metal, rock, concrete, soil, green waste, and fiberglass. Waste (176 tons) was disposed of at El Sobrante Landfill in Corona, California, and four dump-truck loads of concrete and rock (45 tons) was processed at Wyroc Regional Materials Recovery, Inc. in Vista, California.

2.4.4.9 Cleanup, Restoration, and Roadway Repair

The applicant would restore all areas temporarily disturbed during construction of the proposed projects, including temporary staging areas and wire-stringing sites, to as close to preconstruction conditions as possible or to the conditions agreed upon between the applicant and landowner after completion of construction. The applicant would repair damage to roads that results from construction in accordance with local requirements after construction is complete. The applicant would conduct a final inspection to ensure that cleanup activities were successfully completed.

2.4.5 Subtransmission and Transmission Line Construction

The applicant would be required to ensure that the proposed transmission, subtransmission, and telecommunication lines would maintain, at minimum, the clearance requirements specified in California Public Utilities Commission (CPUC) General Order 95, *Rules for Overhead Electric Line Construction.* The clearance requirements apply to distances to the ground and between conductors at highways, bridges, buildings, water areas, and other crossings.

2.4.5.1 Access Road Construction

The applicant would first clear and grub access roadways (new and existing) of vegetation. Then the roadways would be graded to remove potholes, ruts, and other surface irregularities and re-compacted to provide a smooth and dense riding surface capable of supporting heavy construction equipment. To minimize impacts from road construction on drainage and wetland areas, the applicant would access construction sites using *overland access* where possible. Road preparation work would not be required for overland access areas that may be used through relatively flat, grassy areas that do not include aquatic features (e.g., drainages or wetlands). Overland access areas would not be maintained after construction of the proposed projects.

Valley–Ivyglen Project

The drivable area of the proposed access roads would generally be 24 feet wide with an additional 2 feet on each side if drainage berms or swales are required. In addition, hilly terrain along sections of 115-kV Segments VIG1 and VIG6 may require additional permanent and temporary disturbance areas for vehicle turnaround and positioning during access road construction. In some locations, the permanent, graded disturbance areas may be as wide as 100 feet, and the temporary disturbance areas may be as wide as 200 feet. The access roads constructed to accommodate construction would be permanent.

Slope stability improvements may also be required during the new access road construction, widening of existing access roads, repairing earthen slopes damaged by erosion, grading with significant cut and fill depths, and benched grading activities. It is typically preferable to use cut-and-fill slopes that are configured at slope ratios that are stable without using reinforcement. However, due to ROW limitations, sensitive resource avoidance, and existing topography, the proposed Valley–Ivyglen Project may require reinforced earthen slopes, permanent erosion control, or an earth retaining system. The applicant estimates that the total combined length of retaining walls may be approximately 2,200 feet with an average height of 8 feet. Other slope stability systems considered include mechanically stabilized systems, along with drainage improvements (i.e., v-ditches, downdrains, energy dissipaters, etc.). The extent of slope stability improvements and earth retaining walls are determined during final engineering after site-specific geotechnical investigations and a topographic survey are performed.

Substantial cut-and-fill grading activities to repair slopes damaged by erosion may be required along 115-kV Segments VIG1 and VIG6 to construct access roads. Benched (terraced) grading activities may be required. Benching is a technique in which a tracked earth-moving vehicle excavates terraced sites in steep and rugged terrain. Blasting or fracturing may also be required. Blasting and fracturing are described in Section 2.4.5.4. Permanent erosion control facilities (e.g., retaining walls) may also be required based on the topography and resources present. Other slope stability systems may include drainage improvements (e.g., v-ditches, downdrains, or energy dissipaters). The extent of slope stability improvements required would be determined during final engineering and based on the results of site-specific geotechnical investigations.

Blasting or fracturing may also be required. Blasting and fracturing are described in Section 2.4.5.4.

Alberhill Project

The drivable area of the proposed access roads would generally be 24 feet wide with an additional 2 feet on each side if drainage berms or swales are required. In addition, hilly terrain along the proposed 500-kV transmission line routes is anticipated to require additional permanent and temporary disturbance areas for vehicle turnaround and positioning during access road construction. In some locations, the permanent, graded disturbance areas may be as wide as 200 feet, and the temporary disturbance areas may be as wide as 500 feet. The access roads constructed to accommodate construction would be permanent.

The proposed Alberhill Project would repair and stabilize slides, washouts, and other slope failures along the roads due to inclement weather by installing retaining walls or other means necessary to prevent future failures. The type of drainage structure or earth-retaining structure to be used would be based on site-specific conditions. The crossing of Aquatic Feature X (Figure 4.9-2) to access 500-kV Tower SA5, specifically, is discussed in Section 4.9.

2.4.5.2 Helicopter and Airstrip Use

Valley–Ivyglen Project

Light-duty helicopters may be used along 115-kV Segments VIG1 and VIG4 to VIG7 for materials delivery, hardware installation, and wire stringing. In general, helicopter operations (including takeoff and landing) would be limited to areas in proximity to wire stringing sites or access roads and previously disturbed areas near construction sites within the 115-kV Valley–Ivyglen General Disturbance Area (Section 2.4.2.1) or the fueling, takeoff, and landing areas described below. Heavy-duty helicopters would not be used for construction of the proposed Valley–Ivyglen Project.

Alberhill Project

The applicant may use a heavy-duty helicopter to facilitate construction where the proposed 500-kV transmission line towers would be located on terrain on which a crane could not be used or some of the required equipment and materials could not be delivered by truck. For all sections of the 500-kV transmission lines, a light-duty helicopter would be used for *sock-line threading*—the stringing of a lightweight pilot line (a sock line) between power line structures. After securing the sock line to the conductor-pulling cable, the sock line and the conductor-pulling cable are threaded through the structures.

The applicant does not anticipate that helicopters would be used for 115-kV subtransmission line construction with the exception of wire stringing along a section of 115-kV Segment ASP5 between Lost Road and Bundy Canyon Road that is undeveloped and has hilly terrain (Figures 2-2x and 2-2x). For wire stringing along these 115-kV segments, a light-duty helicopter would be used. For all other 115-kV segments, the applicant would install conductor on the proposed 115-kV subtransmission lines using a line truck instead of a helicopter to string the sock line.

Helicopter Fueling, Takeoff, and Landing Areas

Helicopter fueling, takeoff, and landing may occur at Skylark Field Airport, Perris Valley Airport, or the applicant's Chino Air Operations Facility at Chino Airport for either of the proposed projects. In addition:

- For the Proposed Valley–Ivyglen Project, helicopter fueling, takeoff, and landing may also occur within the Valley–Ivyglen 115-kV General Disturbance Area (Section 2.4.2.1) along 115-kV Segments VIG1 and VIG4 to VIG7 and at all Valley–Ivyglen Project staging areas except Staging Area VIG5.
- For the proposed Alberhill Project, helicopter fueling may also occur at the proposed Alberhill Substation site or at Staging Areas ASP1 or ASP3.
- For the proposed Alberhill Project, helicopter takeoff and landing may also occur adjacent to wire stringing sites along the 500-kV transmission line routes during wire-stringing activities or for materials delivery and at Staging Areas ASP1, ASP2, and ASP3.

Temporary landing areas within staging areas, at wire-stringing sites, or along the 500-kV transmission line routes would be approximately 100 feet wide by 100 feet long. The helicopter contractors selected by

the applicant for construction of the proposed projects may select helicopter operations facilities or airports other than those listed in this document, which could result in the need for additional evaluation pursuant to CEQA. Helicopters would remain at local airports, or the applicant's or helicopter contractor's air operations facilities at night or when not in use.

Skylark Field Airport

Construction activities for the proposed Alberhill Project 115-kV segments would occur within 1,000 feet of a private airstrip (Skylark Field Airport) in southern Lake Elsinore. The airport is private and primarily used for skydiving. It has turf runways, the longest of which is approximately 2,800 feet (AirNav, LLC 2013a). The applicant would provide written notice of the construction schedule to the Skylark Field Airport operator prior to construction of components of the proposed Alberhill Project that would require use of the airport or construction activities that would occur near the airport (e.g., construction on Mission Trail, Waite Street, Lemon Street, Lost Road, and Beverly Street). The applicant may stage helicopters and helicopter support equipment at local airports, including Skylark Field Airport, for the proposed Alberhill Project.

Perris Valley Airport

The applicant may stage helicopters and helicopter support equipment at local airports, including Perris Valley Airport, for the proposed Valley–Ivyglen Project. Perris Valley Airport is a public-use airport with an asphalt runway that is approximately 5,100-feet long (AirNav, LLC 2013b). The airport is located approximately 1.5 miles north of 115-kV Segment VIG1 and 115-kV Segment ASP8.

Chino Airport

The applicant's Chino Air Operations Facility is located at 7000 Merrill Avenue in Chino, California, at the Chino Airport (approximately 18 miles northwest Ivyglen Substation). Chino Airport is a public use airport located within Los Angeles County with asphalt runways, the longest of which is approximately 7,000 feet (AirNav, LLC 2013c). The Chino Air Operations Facility may be used for helicopter staging activities.

Helicopter Specifications and Best Management Practices

Helicopters would be used in accordance with the applicant's specifications, which are similar to the methods detailed in the Institute of Electrical and Electronic Engineers 951-1996 Standard, *Guide to the Assembly and Erection of Metal Transmission Structures* (Section 9, Helicopter Methods of Construction). The applicant may need to submit a Congested Area Plan to the Federal Aviation Administration 30 to 60 days prior to start of construction for helicopter external-load operations over populated areas or areas congested with structures or objects. The applicant would consult with the Federal Aviation Administration prior to start of construction to determine if a Congested Air Plan is necessary.

The type of helicopter used for transmission and subtransmission line construction would be determined during final engineering design for the proposed projects and would depend on the helicopters and contract helicopter services available at the time of construction. For the purpose of the analyses in this document, the applicant indicated that a light-duty Hughes 500E (369E) helicopter with a Rolls Royce 250-C20B engine (refer to Appendices B1 and B2 for estimated hours of operation) or similar would be used for wire stinging activities and materials delivery.

Heavy-duty helicopters would not be required for the proposed Valley–Ivyglen Project but may be used as part of the proposed Alberhill Project. If a heavy-duty or medium-duty helicopter is required for construction of the proposed 500-kV transmission lines as part of the Alberhill Project because of rough

terrain, the following or similar models would be used for up to five days (up to 12 hours per day or in accordance with all applicable noise ordinances):

- Sikorsky S64 Skycrane twin-engine heavy-lift helicopter with Pratt and Whitney T73-P-1 engines (heavy-duty);
- Kaman K-MAX helicopter with a Lycoming T53 engine (medium-duty helicopter); or
- Hughes 500 / 530 helicopter

The applicant would employ BMPs to minimize impacts caused by the use of helicopters. BMPs would include:

- Using helicopters with low-emitting engines to the extent practical
- Efficiently maximizing flight times
- Designating flight paths away from residential areas
- Identifying sensitive receptors that might be disturbed by construction noise
- Providing advance notice of helicopter work
- Obtaining variances from local noise ordinances as required

The applicant would not use helicopters for construction at night. Helicopters would only be used during daylight hours consistent with applicable laws and regulations.

2.4.5.3 Removal of Existing Structures

115-kV and Distribution Structure Removal

After the existing 115-kV subtransmission, distribution, and telecommunication lines are transferred to the proposed structures, the existing 115-kV structures would be completely removed, including their below-ground components. The remaining holes would be backfilled using native and/or clean fill remaining from excavation activities in combination with imported clean fill as needed. Conductor and hardware on the structures would also be removed and recycled or disposed of as described in Section 2.4.4.8.

Existing access roads would be used where feasible to reach the structures to be removed. Road work may be required and could include any of the activities described under Section 2.4.5.1 for access road construction. Wire-pulling sites for conductor removal would be located at intervals of approximately 6,500 feet. In some cases, the tops of existing poles would be removed after removal of the subtransmission line. The distribution line would be left in place on the lower section of the poles until the distribution line is relocated. The *topping* of poles would be completed with a bucket truck and saw. The numbers of subtransmission and distribution structures to be removed are presented in Tables 2-1 and 2-2.

For the proposed Valley–Ivyglen Project, approximately 35 distribution-line riser poles would be replaced with 115-kV structures designed to support the required distribution-line riser pole components on their lower sections. Each replacement would require approximately ~~15~~ 30 feet of trenching (20 to 24 inches wide and 42 inches deep) to facilitate the replacement. In addition, approximately three distribution-line riser poles would require installation of approximately 3 to 4 additional vaults and approximately 600 to 2,500 feet of trenching each. Distribution-line riser poles are located at each terminus of an underground segment of distribution line where conductor transitions up the riser pole to an overhead position.

Trenching and vault installation would be conducted as described in Section 2.4.5.4, under the heading, "Trenching and Duct Banks" and "Vault Installation."

Where new 115-kV structures would replace distribution line structures, the new 115-kV structures would be installed along the same alignment of the existing distribution structures, but the span lengths between structures would differ. Spans lengths between 115-kV structures are, on average, greater than span lengths between distribution structures.

For the proposed Alberhill Project, where new 115-kV structures would replace existing 115-kV structures, the new structures would be installed as close as possible to the original structures, where existing structures are present.[12]

500-kV Tower Removal

To remove Serrano–Valley 500-kV Transmission Line tower M13-T4, the applicant would do the following:

1. The transmission line would be de-energized.
2. Grounding and wire snubbing would be completed as described in Section 2.4.5.3.
3. Conductor spans would be removed from the existing tower and transferred to the proposed 500-kV towers.
4. The tower would be dismantled down to the tower footings.
5. The footings would be removed to 2 feet below grade.
6. The footing holes would be backfilled using clean fill material excavated in proximity to the tower site during construction. If excavated material is not suitable for backfill, clean fill material, such as clean dirt and/or base material, would be imported.

The applicant anticipates that removal of the 500-kV tower would occur within the same period as installation of the proposed 500-kV towers and conductor to minimize the amount of time that the Serrano–Valley 500-kV Transmission Line would be out of service.

2.4.5.4 115-kV Structure Construction

The following construction activities are proposed for the 115-kV segments (Figures 2-2a and 2-2b). The number of structures to be removed and installed and length of each segment are provided in Tables 2-1 and 2-2.

Grading and Laydown Areas

The new guy pole, wood pole, hybrid pole, LWS pole, H-frame structure, and TSP locations would first be graded and/or cleared to provide an adequately level and vegetation-free surface for footing construction. An approximately 50-foot by 50-foot area around each guy pole, 100-foot by 100-foot area around each wood pole, 150-foot by 75-foot area around each hybrid pole, 150-foot by 75-foot area around each LWS pole and H-frame structure, and 200-foot by 150-foot area around each TSP would be cleared of vegetation to provide a safe working area and laydown area needed for pole assembly (Tables 2-5 and 2-7).

[12] Exceptions (i.e., where existing pole locations would not be reused) may include, but would not be limited to, requirements for even span lengths, avoiding utility infrastructure, spanning driveways, and pole *loading*—the amount of force that may be applied to an installed pole.

Depending on the location, the assembly and erection of some TSPs may require that a new crane pad, approximately 50 feet by 50 feet, be prepared to allow an erection crane to set up 60 feet from the centerline of the TSP. Crane pads would be located transversely (crosswise) from the TSP. The locations that would require a crane pad cannot be determined until final engineering and, therefore, for the purposes of this document, it is assumed that crane pads could be required anywhere along 115-kV segments that would include the installation of a TSP (Tables 2-1 and 2-2).

Blasting and Fracturing (Valley–Ivyglen Project)[13]

Blasting or fracturing would only occur in areas that require excavation and where subsurface obstructions reasonably preclude excavation using conventional construction equipment as part of the proposed Valley–Ivyglen Project. Blasting or fracturing may be required during access road construction, site preparation, excavation work, or foundation work.

Blasting or fracturing may be required where rock is present to install the proposed structures along 115-kV Segments VIG1, VIG2, VIG5, VIG6, and VIG8. Structure and access road sites that may require blasting are shown in Table 2-10. If, after certification of this document, it is determined that blasting locations other than those discussed in this section would be needed, additional environmental analysis pursuant to CEQA may be required.

Table 2-10 Blasting Details and Locations (Valley–Ivyglen Project)

Segment	Material Removed (Estimated)	Nearest Sensitive Receptor	Blasting Location by Proposed 115-kV Structure Site [(a)]
115-kV Segment VIG1	2,240 cubic yards	80 feet	Access road between Structures 144 and 147[(b)]
115-kV Segment VIG1	400 cubic yards	80 feet	Structures 131 and 144–157 (15 structures)
115-kV Segment VIG2	267 cubic yards	65 feet	Structures 212–214, 219, 221, 224, 230, and 251–253 (10 structures)
115-kV Segment VIG5	107 cubic yards	90 feet	Structures 32 to35 (4 structures)
115-kV Segment VIG6	107 cubic yards	None in proximity	Structures 527–530 (4 structures)
115-kV Segment VIG8	Not provided	None in proximity	Each underground vault location (8 vaults)

Sources: SCE 2013, 2014

Notes:

[(a)] Proposed Valley–Ivyglen 115-kV structure sites are shown on Figures 2-2a through 2-2x.

[(b)] Boulders in this location may be associated with a known cultural site (P-33-000714/CA-RIV-714). The State Historic Preservation Officer has concurred that the proposed project impact area would not overlap with contributing elements of the site. In this area, the applicant has agreed to spot check all boulders to be blasted prior to their removal (Roland-Nawi 2014). Refer to Section 4.5, "Cultural Resources."

Explosive agents that may be used include dynamite, ammonium nitrate/fuel oil, slurry (water-gel explosive), and packaged emulsion explosives. Open blasting areas, such as areas to be leveled for road construction, typically require up to 1.5 pounds of explosive agent per cubic yard of rock. Close-quarters sites (e.g., sites to be excavated for the installation of concrete footings for utility structures) can require up to 4 pounds of explosive agent per cubic yard of rock. The maximum blast depth would be no more than 5 feet per blast. Blasting may be required for up to the full depth of the required excavation depending on the amount of rock present and results of the geotechnical analyses.

Prior to blasting, distances to sensitive receptors in the area would be assessed to ensure that the blast would be engineered to be safe and effective. The area would be secured to avoid inadvertent entry by the public or other personnel. Holes would be drilled and the explosive charges loaded into the holes.

[13] Blasting and fracturing are not anticipated to be needed as part of the Alberhill Project.

Protective measures (e.g., gravel or blast mats) would be installed to control rock and debris that may be expelled from the blast site. The appropriate pre-blast warning signals would be given prior to detonating the blast. After detonation, a post-blast safety inspection would be conducted to ensure that the blast completely discharged and that personnel may safely return to excavate blasted material.

Fracturing involves boring into rock at various points in a pattern configuration and filling pre-drilled holes with an expansive agent. Expansive agents are fine-grain powders that, when mixed with water, form a slurry that can be poured. At the appropriate temperature, the slurry expands substantially in size. The expansive agent hardens as it dries and expands. Expansive agents that may be used for fracturing include limestone, dolomite, calcium hydroxide, calcium oxide, silicon dioxide, aluminum oxide, and ferric oxide. Fracturing is a much slower process than blasting. It requires up to one work day for preparation and 24 hours for the expansion agent to cure and expand. Geotechnical survey results and contractor input are considered when determining the safest and most effective method to break up material. Fracturing is not a viable alternative to blasting in all situations. All blasting and fracturing would be conducted in accordance with applicable laws and regulatory requirements.

Guy Pole, Wood Pole, and Lightweight Steel Pole Installation

The proposed guy poles, wood poles, and LWS poles would be installed in holes bored into soil that are approximately 1.5 feet to 3 feet in diameter and 6 feet to 14 feet deep. They would be *direct buried*—installed into the ground without a foundation or footings. While on the ground at the laydown area, the poles would be configured, if not preconfigured, with the necessary crossarms, insulators, and wire-stringing hardware. ~~before being set in place.~~ LWS poles are typically shipped to the laydown area in sections with slip joints and then jacked together. The poles would be installed using a line truck. Once the poles are set in place, excavated material from the holes would be used to backfill the hole. If the excavated material is not suitable for backfill, clean fill material, such as clean dirt and/or base material, would be imported. The applicant would use excess excavated material to backfill the holes or dispose of it offsite in accordance with all applicable laws.

H-frame structures, which are composed of two LWS poles spaced approximately 12 feet apart, would be used for applications that require extra structure strength. The installation process for H-frames would be similar to that for a single LWS pole.

Tubular Steel Pole Installation

TSPs would be used in areas where the length and strength of LWS poles would be inadequate (e.g., freeway crossings and turning points). The tallest TSPs for the proposed Alberhill Project would be used at I-15 crossings. For the proposed Valley–Ivyglen Project, the tallest TSPs would be used at I-15 crossings and to span a cultural resources site located along 115-kV Segment VIG1. The TSPs would be attached to a concrete foundation approximately 5 feet to 8 feet in diameter that extends 20 to 50 feet below ground and up to 2 feet above ground. A crane would be used to position each pole base section onto the foundation. When the base section is secured, the top section(s) would be placed above the base section. The ~~two~~ sections would be ~~bolted~~ slipped together and may be spot welded together for additional stability.

Hybrid Pole Installation (Valley–Ivyglen Project)

Hybrid poles consist of a separate base and top sections. The base section would be made of concrete and the top section made of steel. Each hybrid pole would consist of a prefabricated concrete base section that would be installed into an approximately 6-foot-diameter hole that is 20 to 25 feet deep. The proposed hybrid poles along 115-kV Segment VIG4 would be direct buried without poured-in-place foundations. No hybrid poles are anticipated for the proposed Alberhill Project. The hole would be excavated using either an auger or a backhoe. The prefabricated concrete base would be set inside the

hole, and the hole would be backfilled with engineered backfill material. Final engineering design would determine appropriate backfill material to fill the annular space around the foundation. Typically, a granular backfill or slurry backfill material is used. In the event natural water levels exist at a level above the excavation depth, polymer or bentonite stabilizing agents (absorbent clay material) may be required to prevent caving during the drilling process or setting of the base section. Fluids displaced by the backfill material and pole setting process would be vacuumed into tanker trucks and disposed of at an off-site facility.

When the base section is secured, the steel upper pole sections would be installed by slipping them onto the concrete base. Typically, a crane and a line truck are used for the installation of hybrid poles. Once the pole sections are assembled, the sections would be jacked together.

Shoofly Construction (Valley–Ivyglen Project)[14]

A shoofly line is a temporary electrical line used during construction activities to maintain electrical service to an area while allowing sections of a permanent line that requires modification to be taken out of service. The applicant proposes to install a temporary shoofly line along Temescal Canyon Road along the westernmost 0.5 miles of 115-kV Segment VIG7 to the start of 115-kV Segment VIG8 (Figure 2-2x). The proposed shoofly line would consist of approximately 10 wood poles. 115-kV subtransmission line conductor would be installed on the poles as described in Section 2.4.5.6.

The temporary shoofly line would be energized after its construction, which would allow a section of the ~~Valley–Elsinore–~~Fogarty–Ivyglen 115-kV line to be de-energized with the minimal loss of 115-kV electrical service to Ivyglen Substation. The ~~Valley–Elsinore–~~Fogarty–Ivyglen 115-kV line provides the single source of 115-kV electrical service to Ivyglen Substation. Electrical outages would be required to facilitate work at the intercept points of the existing line and shoofly line. To construct the proposed shoofly line along 115-kV Segment VIG7, the applicant estimates that four to eight interruptions in electrical service to Ivyglen Substation would occur. Once the proposed 115-kV Valley–Ivyglen line is operational, all conductor cables and wood poles for the shoofly line would be removed after 115-kV Segment VIG7 is operational, as described in Section 2.4.5.3.

115-kV Underground Installations (Valley–Ivyglen Project)[15]

115-kV Segments VIG1 and VIG8 would be at least partially located in new ~~under~~ or existing underground conduits.

Trenching and Duct Banks

A duct bank contains conduit, spacers, ground wire, and concrete encasement. Duct banks for 115-kV subtransmission lines typically contain six polyvinyl chloride conduits (each approximately 6 inches wide) that are fully encased with a minimum of 3 inches of concrete. They can accommodate up to six cables and may include distribution or telecommunications lines. The proposed underground duct banks for the Valley–Ivyglen 115-kV line would use three of the six conduits and leave three spare conduits for future use pursuant to the applicant's standards for 115-kV underground construction. Each duct bank would be approximately 21 inches high by 20 inches wide.

Approximately 20-inch to 24-inch-wide by 5-foot-deep trenches would be required to install the proposed Valley–Ivyglen 115-kV line underground. Where vaults are installed, the trench would be approximately 12 feet wide and approximately 14 feet deep. A minimum of 36 inches of cover above the duct bank is required (Figure 2-4b). The location of underground utilities in proximity of the underground work (if

[14] No shoofly construction is anticipated to be needed for construction of the proposed Alberhill Project.
[15] No subtransmission line segments would be placed underground as part of the proposed Alberhill Project.

any) would be marked. The trench line would be drawn on the ground, and a saw would be used to cut asphalt or concrete pavement as necessary. A backhoe or similar excavation equipment would be used to excavate the trench. Trenches would be widened and shored where appropriate to meet California Occupation and Safety Health Administration requirements. Trenching would be staged so that the period during which trenches remain open would be minimized. Where trenches must remain open, steel plates would be placed over the trenches to allow for vehicle and pedestrian traffic. Provisions for emergency vehicle access would be ensured and arranged with local jurisdictions in advance of all trenching activities.

Trench width and depth may vary where a duct bank would cross or run parallel to other substructures. For substructures that operate at normal soil temperatures (e.g., gas lines, telephone lines, water mains, storm drains, or sewer lines), a minimal clearance of 6 inches for crossing and 12 inches for paralleling the substructures would be required. For substructures that operate at temperatures that substantially exceed normal soil temperature (e.g., other underground transmission circuits, primary distribution cables, steam lines, or heated oil lines), additional clearance may be required. Clearances and depths would meet the requirements established by Rule 41.4 of CPUC General Order 128. In areas where underground utilities are highly congested or in areas where it is necessary to arrange underground conduit horizontally instead of vertically within the duct banks, flat configuration duct banks may be required. Trenches in this case would be shallower and wider. Flat configurations are unusual, however, and the applicant does not anticipate that they would be required.

After installing the duct banks, the trenches would be backfilled with a sand and slurry backfill material. Excavated materials would be disposed of at an offsite disposal facility in accordance with all applicable laws and regulations. Should groundwater be encountered, it would be pumped into a holding tank and disposed of at an offsite disposal facility in accordance with all applicable laws and regulations.

Vault Installation

Vaults are below-grade concrete enclosures where underground electrical or telecommunications lines terminate, are spliced together, or transition to or from overhead positions. They are constructed of prefabricated steel-reinforced concrete and designed to withstand heavy truck traffic loading. They would be placed no more than 1,500 feet apart along the underground sections of the proposed subtransmission line. Initially, the vaults would be used as pulling locations to pull 115-kV conductor through the conduit. After the cable is installed, the vaults would be used to splice cables together. During operations, the vaults would provide maintenance access to the underground conductor.

Underground vaults would be installed along 115-kV Segments VIG1 and VIG8 (Table 2-1). The installation of each vault would take place over an approximately one-week period, depending on soil conditions. First, each vault pit would be excavated and shored; a minimum of 6 inches of mechanically compacted aggregate base would cover the bottom of each excavated pit. Vault delivery and installation would follow excavation. After each vault is set into the excavated pit, grade rings (for manhole cover placement) and the vault casting would be installed. After vault installation, each excavated pit would be backfilled with a sand and slurry material to a point just below the top of the vault roof. Excavated materials, if suitable, would be used to backfill the remainder of the excavation, and excess spoils would be disposed of at an offsite disposal facility in accordance with all applicable laws and regulations.

Underground Conductor Pulling, Splicing, and Termination

To pull the 115-kV conductor cable through the underground duct banks installed along 115-kV Segments VIG1 and VIG8, a cable reel would be placed at a vault at one end, and a pulling rig would be placed at a vault at the opposite end. The cable from the cable reel would be attached to a rope in the duct bank, and the rope would be linked to the pulling rig, which would pull the rope and the attached

conductor through the duct banks. The process would be repeated moving from one vault to the next. A lubricant would be applied as the cable enters the ducts to decrease friction and facilitate travel through the conduit. The 115-kV conductor cables would be pulled through the conduit at a rate of two to three sections of conductor cable between vaults per day. After pulling is completed, the conduit sections would be spliced together within the vaults. A splice crew would conduct splicing operations at each vault location.

Riser Poles

At each terminus of the proposed underground Valley–Ivyglen Project 115-kV sections, the conductor would transition to an overhead position up a riser pole (Figure 2-4a). There would be two riser poles installed along 115-kV Segment VIG8, for example. One would be installed at the start of the segment and one at the end. The proposed riser poles would be TSPs that would support conductor termination hardware, lightning arresters, and dead-end hardware. Construction methods for riser pole installation would be similar to those described for TSP installation.

2.4.5.5 500-kV Tower Construction (Alberhill Project)

Grading and Laydown Areas

The new tower pad locations for the 500-kV transmission lines would first be graded and cleared to provide an adequately level and vegetation-free surface for footing construction. The graded area would be compacted to be capable of supporting heavy vehicular traffic. The applicant would grade the areas such that water would run toward the direction of the natural drainage and prevent ponding and erosive water flows that could cause damage to the tower footings.

Each tower site would require a laydown area of approximately 200 feet by 200 feet for tower assembly (Table 2-6). In locations where the terrain in the laydown area is already reasonably level, only vegetation removal would be needed to prepare the site for construction. In locations where a level surface is not present, both vegetation clearing and grading would be necessary to prepare the laydown area for construction.

Tower installation may require construction of permanent crane pads to allow an erection crane to set up at an angle approximately 60 feet from the centerline of each structure. Crane pads would be located transversely (crosswise) from each applicable structure location. If pads are required, they would each occupy an area of approximately 50 feet by 50 feet and may extend outside of the 200-foot-wide ROW in proximity to some 500-kV tower locations. The precise locations that would require grading or crane pad construction cannot be determined until final engineering and, therefore, for the purposes of this document, it is assumed that crane pads could be required anywhere along the 500-kV transmission line routes.

Benching

In mountainous areas, benching may be required to provide access for footing construction, assembly, erection, and wire-stringing activities during line construction. Benching is a technique in which a tracked earth-moving vehicle excavates a terraced access to excavation areas in steep and rugged terrain. Benching would be used, if needed, to help ensure the safety of personnel during construction activities and to control costs in situations where potentially hazardous, manual excavations would be required. The locations that would require benching cannot be determined until final engineering and, therefore, for the purpose of this document, it is assumed that benching could occur anywhere along the 500-kV transmission line routes.

Tower Foundation, Assembly, and Erection

Each 500-kV transmission line tower would be constructed on four, drilled concrete foundations (footing). First, the four holes for the concrete footings would be bored using truck or track-mounted excavators with various diameter augers to match the diameter requirements for the footing. Next, steel-reinforced cages and stub angles would be installed. Concrete would then be poured. Steel-reinforced cages and stub angles would be assembled at the tower laydown area or at staging areas and delivered to each tower location by truck, where possible, and by heavy-duty helicopter, if necessary.

Depending on the terrain, equipment and material may need to be delivered at structure sites using a heavy-duty helicopter or by workers on foot, and crews may prepare the footings by hand using hydraulic or pneumatic equipment or other methods.

At tower laydown or project staging areas, tower assembly would begin with hauling and stacking bundles of steel. This activity requires the use of several tractors with ~~40-foot~~ trailers and a forklift or crane designed for use on rough terrain. After steel is delivered and stacked, crews would proceed with the assembly of tower leg extensions, body panels, boxed sections, and bridges. The assembled tower sections would be lifted into place with~~, at minimum, an 80-ton~~ all-terrain or rough-terrain crane. Heavy-duty helicopters may also be used for 500-kV tower ~~assembly~~ erection. The steel work would be completed by a combined erection and torquing crew with a boom crane. Insulators and wire rollers (travelers) for the conductor may also be installed at this time.

Grounding and Snubbing: Core Reserve Access

The proposed 500-kV transmission line alignments (500-kV Line SA and 500-kV Line VA) and new 500-kV towers that would connect the proposed Alberhill Substation to the Serrano–Valley 500-kV Transmission Line would not be located within the boundary of the Core Reserve (Section 2.3.2.2, under the heading "Lake Mathews/Estelle Mountain Reserve"). Grounding and snubbing, however, would be required during construction of the proposed Alberhill Project at towers M14-T2 and M14-T1, which are located within the Core Reserve boundary (Figure 2-2x). Equipment would not be positioned within land managed by the BLM.

Grounding

To ensure worker safety during construction within the applicant's Serrano–Valley 500-kV Transmission Line ROW, the applicant would ground the Serrano–Valley 500-kV Transmission Line at four existing 500-kV tower sites: M14-T2, M14-T1, M13-T3, and M13-T2. No equipment other than pickup trucks, capstan hoists, clamps, and grounding cables would be required for grounding the two towers located within the Core Reserve (M14-T2 and M14-T1). At the other tower sites, additional equipment (e.g., bucket trucks for lifting workers) may be used. No grounding cables or rods would be installed into the ground. No ground disturbance would be required for grounding at any of the existing or proposed 500-kV tower sites.

To access the tower sites located within the Core Reserve, the applicant estimates that construction crews would drive to towers M14-T2 and M14-T1 (about 2.5 miles roundtrip) using pickup trucks on existing access and maintenance roads. Access to towers M13-T3 and M13-T2 would also require the applicant to drive on an existing access road that briefly passes through the Core Reserve boundary. Access to these tower sites would occur twice per day during 500-kV Tower SA6 and VA6 foundation installation and for wire snubbing: once to install grounds and once to remove them. The existing access and maintenance roads that would be used are shown on Figure 2-2x.

To install the grounds, first the Serrano–Valley 500-kV Transmission Line would be de-energized. Then workers would climb each of the four 500-kV lattice steel towers to install grounding clamps. Two

clamps would be installed to the bridge of each tower for each of the three conductor *phases*[16] (two conductors per phase, six clamps per tower; Figure 2-8). The clamps would be connected by grounding cables to the 500-kV conductors. Once connected to the towers, the lattice steel towers would *ground* the transmission line conductors—provide a path from the transmission line conductors to the earth. If lightning strikes a transmission line conductor or tower or electricity otherwise energizes the 500-kV transmission line after it has been grounded, the electricity would travel down the lattice steel towers and into the earth. Workers would be able to safely work at existing tower site M13-T4 and proposed tower sites SA6 and VA6 (Figure 2-2x), which would be located between four grounded towers (M14-T2, M14-T1, M13-T3, and M13-T2). This grounding technique, which creates a safe area between grounds along a transmission line, is called *bracket grounding.*

Conductor and Overhead Ground Wire Snubbing

Conductor snubbing would be required for each of the three 500-kV transmission line conductor phases, which would be separated from existing 500-kV lattice steel tower M13-T4 and extended to the two proposed towers (500-kV Towers SA6 and VA6) within the existing 500-kV ROW. The term *conductor snubbing* refers to removing conductors from the insulators and securing them to utility structures (Figure 2-10). In this case, insulators are located between each of the conductors and the bridges of the 500-kV lattice steel towers. Snubbing ensures that the conductors are secured such that when they are separated (cut) they do not fall to the ground. Snubbing would also be required for the overhead ground wire.

Conductor snubbing would occur at 500-kV towers M14-T2, M14-T1, M13-T3, and M13-T2 and the proposed 500-kV towers VA6 and SA6. Between one and two conductor phases (two conductors each) would be snubbed to towers M14-T2, M14-T1 and M13-T3 or M13-T2. Multiple towers would be used for snubbing to ensure that the weight of the conductors does not damage any of the towers along the 500-kV transmission line. Conductor would also be snubbed as needed to the other proposed 500-kV towers (SA1 to SA5 and VA1 to VA5) during conductor and overhead ground wire installation from the proposed substation, upslope to the Serrano–Valley 500-kV Transmission Line.

Rough-terrain cranes, a man lift (e.g., bucket or boom truck), and crew truck would be used for conductor snubbing at the 500-kV tower sites, including towers M14-T2 and M14-T1 within the Core Reserve. Grips would be installed on each conductor by workers raised by a man lift to the bridge level of the towers. The grips would be connected to a hoist device that attaches to the tower. The conductors would be removed from the insulators and a crane would be used to raise the conductors to the tower bridge where they would be *snubbed*—affixed.

[16] Three-phase, alternating-current electrical transmission systems use at least three conductors to transmit electricity. For the Serrano-Valley ~~–Serrano~~ 500-kV Transmission Line, each of the three phases use two conductors. Each of the two side-by-side conductor cables are referred to as *conductor bundles*. Six conductor cables (i.e., three conductor bundles) are used to transmit electricity along the Serrano-Valley ~~–Serrano~~ 500-kV Transmission Line.

Insert

Figure 2-10 Conductor Snubbing Diagram

Access to the Core Reserve for snubbing would be required twice: first to ground and snub the conductors and overhead ground wire and then to remove the grounds and snubs. Snubbing would take approximately one workday. Snub removal would also take approximately one workday. The 500-kV transmission line would be grounded for the duration of the snubbing period. Once snubbed, the conductor and overhead ground wire snubs would not be removed until conductor and overhead ground wire installation for proposed 500-kV Line SA and 500-kV Line VA is completed. The process of stringing, pulling, tensioning, and splicing to install conductor on the 500-kV towers is described in Section 2.4.5.6, under the heading "500-kV Transmission Line Wire Stringing."

2.4.5.6 Wire Stringing

Wire stringing includes all activities associated with the installation of conductors onto a supporting structure. This activity includes the installation of sockline, hardline travelers, primary conductor, overhead ground wire, vibration dampeners, weights, spacers, and suspension and dead-end hardware assemblies. Wire-stringing activities would be conducted in accordance with the applicant's specifications, which are similar to those of the Institute of Electrical and Electronic Engineers 524-2003 standard, *Guide to the Installation of Overhead Transmission Line Conductors.*

The applicant would prepare and implement a standard wire-stringing plan, which would outline the sequenced program of events to be conducted, starting with the siting of wire pulls and wire pull equipment set-up positions. Advanced planning determines circuit outages and safety protocols needed for ensuring the safe and quick installation of wire. To ensure the safety of workers and the public, safety devices such as traveling grounds (to maintain a continuous ground connection), guard structures, and radio-equipped roving, public safety vehicles, and linemen would be in place prior to the initiation of wire-stringing activities.

For major roadway crossings, typically one of the following methods is employed to protect the public:

- Erection of a highway net and guard structure system
- Detour of all traffic off a highway at the crossing position
- Implementation of a controlled continuous traffic break while stringing operations are performed
- Strategic placement of special line trucks with extension booms on the highway deck

Depending on the permitting agency, the use of a secondary, safety take-out sling at highway crossings may be required.

Wire-Stringing Sites

The term *wire-stringing site* refers to areas where wire stringing, pulling, tensioning, and splicing activities occur to install conductor on an overhead electrical line. Wire-stringing sites are selected, where possible, based on the geometry of the line, terrain, and availability of dead-end structures. For stringing equipment that cannot be positioned at either side of a dead-end structure anchoring and dead-end hardware would be temporarily installed to sag conductor wire to the correct tension.

Wire-stringing sites require level areas to allow for equipment maneuvering. When possible, these locations would be located on existing, level areas and existing roads to minimize the need for grading and cleanup. If necessary, however, wire-stringing sites would be graded. Wire pulls typically occur every 15,000 to 18,000 feet on flat terrain or less frequently in rugged terrain. Wire splices (the connection of two lengths of conductor) typically occur every ~~7,500~~ 7,000 to 9,000 feet on flat terrain or less frequently

in rugged terrain. The estimated number of wire-stringing sites and amount of disturbed area for these activities are specified in Tables 2-5 through 2-7.

The wire-stringing sites would, in general, be located within the linear orientation of the proposed transmission and subtransmission line routes at a distance of approximately three times the height of the proposed transmission and subtransmission structures. The approximate locations of wire-stringing sites for the proposed 500-kV transmission lines are shown in Figure 2-8. The approximate locations of wire-stringing activities along the proposed 115-kV routes have not yet been specifically identified, but are expected to occur at locations where the width of the proposed 115-kV general disturbance areas increase as shown in Figures 2-6a through 2-6x. The precise location of each wire-stringing site would not be known until the applicant completes final engineering. For the purposes of this document, it is assumed that wire-stringing sites could occur anywhere along the proposed 500-kV transmission line or 115-kV subtransmission line routes.

500-kV Transmission Line Wire Stringing (Alberhill Project)

Wire stringing for each of the proposed 500-kV transmission line routes would require a puller positioned at one end and a tensioner and wire-reel stand truck positioned at the other end. The puller would be positioned at the Serrano–Valley 500-kV Transmission Line end of the proposed SA and VA 500-kV transmission lines. It would be located within the applicant's existing ROW for the Serrano–Valley 500-kV Transmission Line. The tensioner and wire-reel stand truck would be positioned at the proposed Alberhill Substation site. Splicing sites between lengths of transmission cable would be located as needed within the 200-foot ROW for the proposed 500-kV transmission line routes.

The following four steps describe the wire-stringing process:

1. **Sock-Line Threading:** A light-duty helicopter would fly a lightweight sock line from structure to structure, which would be threaded through wire rollers installed on the transmission line structures. A cam-lock device would be engaged during threading that secures the sock line to the rollers.

2. **Pulling/Tensioning:** The sock line would be used to pull ~~conductor~~ hardline-pulling cable onto the transmission line structures. The ~~conductor~~ hardline-pulling cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications caused by twisting as the conductor unwinds off the reel. A piece of hardware known as a *running board* would be installed to feed the conductor into the wire roller. This device keeps the conductor from wrapping during installation. The new conductor will be installed by utilizing conductor tensioning equipment at the conductor end of the pull.

3. **Splicing, Sagging, and Dead-Ending:** Depending on conductor cable lengths and the lengths of spans between structures, temporary mid-span splices may be installed during the conductor pulling process. Temporary pulling ~~splices~~ socks are removed and permanent splices installed once the conductor is threaded through the wire rollers located on each structure. The temporary ~~splices~~ socks are necessary because the permanent splices used to join conductor together cannot travel through the rollers.

   After permanent splicing is completed, the conductor would be sagged to proper tension and attached to the dead-end structures.

4. **Clipping In:** After conductor is dead-ended, the conductors would be attached to the transmission line structures—a process called clipping in.

Overhead Ground Wire

Overhead ground wire would be installed along the tops of the 500-kV transmission line structures. It would be installed in the same manner as the conductor and is typically installed in continuous sections of 11,000 feet or less, depending upon factors such as line direction, slope, and accessibility.

Core Reserve Access

If wire-stringing equipment is required to be placed outside the existing Serrano–Valley 500-kV Transmission Line ROW, it would be placed on an existing access road. If wire-stringing equipment must be positioned within or partially within the Core Reserve (Section 2.3.2.2, under the heading "Lake Mathews/Estelle Mountain Reserve"), the equipment would be backed up onto the existing access road or other areas within the Core Reserve while being monitored by a qualified biologist (Section 4.4, "Biological Resources"). The applicant anticipates that wire-stringing equipment and associated vehicles would be required to back up onto existing access roads or other areas within the Core Reserve adjacent to the proposed sites for 500-kV Towers SA6 and VA6 and adjacent to existing tower sites M13-T4, M13-T3, and M13-T2 (Figure 2-2a).

To avoid or minimize locating equipment within the Core Reserve or on land managed by the BLM, the applicant would employ a technique called *slack spanning*. Typically, wire-pulling locations are set up behind transmission line structures (in-line with/parallel to transmission line alignments), but in this case wire-pulling locations would be placed to the side (offset) of the transmission line alignments as shown by the wire stringing sites identified on Figure 2-2a within the Serrano–Valley 500-kV Transmission Line ROW. Standard wire-stringing processes and equipment are used when slack spanning, but shorter conductor leads and lesser tensions are applied to ensure that tower loading specifications are not exceeded.

115-kV Subtransmission Line Wire Stringing

Conductor would be installed on the proposed 115-kV wood poles, hybrid poles, LWS poles, H-frame structures, and TSPs as previously described for 500-kV transmission line stringing, except for the proposed Alberhill Project and proposed Valley–Ivyglen Project 115-kV lines for which a ~~line truck~~ boom truck would be used to string the sock line instead of a light-duty helicopter. Light-duty helicopters would be used for wire stringing along the 115-kV segments specified in Section 2.4.5.2.

Guard Structures

Guard structures are temporary facilities designed to stop conductor from falling should it drop below stringing height. For both of the proposed projects, guard structures would be used for 115-kV subtransmission line wire stringing that occurs on either side of highways, streets, railroads, trails, and flood control facilities or where other overhead utilities are present to prevent conductor from falling onto these areas. Guard structures are typically wood poles, 60 feet to 80 feet tall, and depending on the width of the conductor being constructed, the number of guard poles installed on either side of a crossing would be between two and four.

Guard structures are installed using similar methods to those required for the installation of permanent wood poles. Each guard structure would be installed within an approximately 2-foot-diameter hole. Guard structures are removed after the conductor is secured into place. In some cases, the wood poles could be substituted with the use of boom-type trucks with heavy outriggers staged to prevent the conductor from dropping. Additionally, temporary netting may be installed, if required. ~~to protect some types of underbuilt infrastructure.~~

2.4.5.7 De-energizing and Energizing the Transmission and Subtransmission Lines

The applicant estimates that the Serrano–Valley 500-kV Transmission Line would be de-energized for a minimum of ~~14 days~~ 30 days to install the proposed 500-kV conductor and overhead ground wires. The maximum length of the electrical outage would be determined by the California Independent System Operator.

De-energizing the Serrano–Valley 500-kV Transmission Line to install and connect the proposed lines would occur at a time of year when electrical demands are lower (off-peak) to reduce effects of the outage. Once the proposed transmission lines are connected to the existing line, the existing line would be returned to service and the new lines would be energized.

The final step in completing construction of the 500 kV transmission line segments and the new and modified 115 kV subtransmission lines involves energizing the new conductor. To accomplish this, the existing lines in service would be de-energized, and the connections between the new and modified lines would be made. De-energizing and connecting the new lines to the existing system would typically occur when electrical demand is low in order to reduce the need for electric service outages. Once the connection is complete, the existing lines would be returned to service and the new facilities would be tested and then energized.

2.4.6 Alberhill Substation Construction (Alberhill Project)

2.4.6.1 Demolition of Horse Ranch Facilities and Weed Abatement

The applicant owns the site proposed for the Alberhill Substation. The site had previously been used as a horse ranch. At the time that the applicant filed an application for the proposed Alberhill Project in September 2009, the applicant did not own the horse ranch property. During preparation of this document, the applicant purchased the property and, at that time, residents were living at the site. Subsequent to the sale of the property to the applicant, the residents moved out.[17]

2011 Demolition and Weed Abatement

In compliance with a Notice of Defects issued by the County of Riverside Department of Building and Safety on May 26, 2011 and a Notice of Violation issued by the County of Riverside Transportation and Land Management Agency on June 9, 2011, the applicant removed the aboveground components of one single-family residence, one mobile home, two garages, one barn, one shed, and a concrete animal shelter from the proposed Alberhill Substation site during demolition and weed abatement activities conducted from September 8 through September 20, 2011 (County of Riverside Demolition Permits #BDE110047, #BDE110048, #BDE110049, #BDE110050, and #BDE110068). The applicant removed the aboveground components of a potentially historic resource identified at the proposed Alberhill Substation site (a second single-family residence) during demolition activities conducted from December 12 through December 15, 2011 (County of Riverside Demolition Permits #BDE110068). The removal took place after receiving a letter from the California State Historic Preservation Office that concurred with the applicant's findings that the structure was not significant pursuant to California Register of Historical Resources criteria (Stratton 2011).

[17] The demolition of horse ranch facilities was described as part of the proposed Alberhill Project in the Proponent's Environmental Assessment (PEA) submitted by the applicant in 2009. The applicant proposed to remove horse ranch demolition from their updated PEA in 2011, but the CPUC elected to retain horse ranch demolition and weed abatement activities in the EIRs' description of the proposed Alberhill Project.

Nine acres of weeds/grass land were mowed with a tractor (weed abatement) and a water truck was onsite to keep mowed areas wet for dust control and fire safety during weed abatement activities. No foundations were removed and no grading occurred during the demolition activities conducted in 2011. No wells or septic tank pits were abated at the horse ranch in 2011, but ~~one water well and~~ four septic tanks and associated leach areas would be abandoned and abated prior to construction of the proposed Alberhill Project pursuant to methods approved by the County Building Official. No contaminated soil or groundwater were encountered during demolition activities conducted in 2011.

At the time of publication of this document, no homes or residences are located on the proposed Alberhill Substation site. Nonetheless, demolition of the horse ranch facilities, including those demolished during the preparation of this document to comply with County of Riverside code enforcement, is considered part of the proposed Alberhill Project. The remaining horse ranch facilities, including the belowground components (foundations) of the facilities demolished in 2011, stables, corrals, and fences would be removed prior to commencement of site grading. Additional materials that would be removed would include soil, wood, metal, rock, cement, green waste, and fiberglass. All materials would be delivered to approved disposal, recycling, or landfill facilities. Hazardous and non-hazardous waste disposal for horse ranch demolition activities conducted in 2011 are discussed in Sections 2.4.4.7 and 2.4.4.8.

Best Management Practices for Demolition and Weed Abatement (2011)

The applicant conducted a nesting bird assessment and bat survey prior to demolition and weed abatement activities and environmental monitoring during demolition and weed abatement activities (Section 4.4, "Biological Resources"). An archaeological monitor provided training prior to weed abatement and demolition activities, but was not present during weed abatement or demolition because there was no ground disturbance. In addition, lead and asbestos air monitoring and abatement was performed for demolition activities conducted in 2011 (McKenna Environmental 2010).

The BMPs implemented by the applicant during demolition and weed abatement activities that occurred in 2011 included:

- Applying water to prevent the generation of visible dust plumes and stabilize wind-erodible surfaces, surfaces where equipment and vehicles operate, loose soils, and demolition debris;
- Compliance with SCAQMD Rule 403 (Fugitive Dust) and Rule 1403 (Asbestos Emissions from Demolition Activities);
- Conducting demolition after nesting season (in general, after August 31) and during daytime hours (to reduce the potential for impacts on bats and other nocturnal species);
- Conducting bat clearance surveys three days prior to demolition;
- Conducting biological monitoring for birds, bats, and other wildlife during weed abatement and demolition activities;
- Preventing the disposal of rinse or wash waters, oil, grease, fuel, waste, or other materials onto impervious or pervious site surfaces or into storm drains; and
- Implementing the following California Stormwater Quality Association BMPs, among others: scheduling (the sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking weather into consideration), water conservation practices, vehicle and equipment maintenance, spill prevention and control, and waste management.

A complete list of BMPs for weed abatement and demolition activities at the proposed Alberhill Substation site is provided in Appendix C.

2012 Weed Abatement

On March 31, 2012, the applicant received a Notice of Violation and Order to Abate from the Riverside County Fire Department. To comply with the Order to Abate, from April 25 to April 28, 2012, the applicant mowed approximately 2 acres of land along Concordia Ranch Road, east of the road's intersection with Temescal Canyon Road. One of the two parcels mowed was partially located within the footprint of the disturbance area for the proposed Alberhill Substation. The vegetation mowed was up to 4 feet tall, and the mower cut vegetation to 4 inches above the ground. The Riverside County Habitat Conservation Agency does not require that property owners obtain permission to abate weeds within areas located within the Stephens' Kangaroo Rat Habitat Conservation Plan coverage area (Section 4.4, "Biological Resources") when ordered by the Riverside County Fire Department as long as weed abatement only occurs within the abatement area specified in the Order to Abate (Barton 2012).

Water Well Destruction and Septic System Abandonment and Abatement

As further discussed in Section 4.8, "Hazards and Hazardous Materials," a Phase I Environmental Site Assessment was conducted for the proposed Alberhill Substation site. The Phase I Environmental Site Assessment identified four septic tanks and associated leach areas, ~~a~~ two water wells, and an aboveground water tank (Rubicon Engineering Corporation 2009a). The applicant would abandon and abate the septic system in accordance with the requirements of an Underground Storage Tank Closure Permit and may destroy the water well in accordance with a Well Permit, both of which are issued by the Riverside County Department of Environmental Health. In addition, the applicant would dispose~~d~~ of the water in an aboveground tank located at the proposed Alberhill Substation site (Rubicon Engineering Corporation 2009b) at a facility licensed to accept water contaminated with oil and grease, and the water tank would be removed and disposed of in accordance with all applicable laws and regulations.

If the water wells are destroyed, once ~~After~~ the Well Permit (to destruct) is approved, water wells are sealed by a well contractor registered with Riverside County. The contractor typically would remove the well pump, the inner pipe to the pump, and any material or obstructions in the well. A sealant pipe would be installed within the bottom of the well's borehole. A County-approved sealant would be pumped to fill the well from the bottom up. Once the well is capped, a driller's report would be submitted to the County.

For septic system abandonment and abatement, the applicant would submit a work plan as part of the permitting process. The applicant would test and abate for flammable vapor in the tanks prior to removal or abandonment in place. If the septic tanks are to be abandoned in place, soil surveys would be performed below and around the tank. If the septic tanks are to be removed, soil surveys would be performed after the tank is removed. All associated piping would typically be removed. Requirements specific to the septic systems at the proposed Alberhill Substation site would be identified as part of the Underground Storage Tank Closure permitting process.

2.4.6.2 Fill, Grading, Drainage, and Surface Materials

The area to be enclosed by the perimeter wall of the proposed Alberhill Substation would be graded and compacted, and fill would be imported to create an even slope that varies between 1 and 2 percent. The site would slope downward from east to west, parallel with Temescal Canyon Road and perpendicular to Love Lane. The ground surface of the proposed substation site would be improved with imported materials as well as materials excavated from the site (Table 2-11). Approximately 80,000 cubic yards of

soil would be imported as fill during grading.[18] The applicant would clear vegetation at the proposed Alberhill Substation site prior to grading and then retain at the site any excess soil resulting from grading, excavation, and other earth-moving activities.

Table 2-11 Alberhill Substation Ground Surface Materials (Quantities Estimated)

Alberhill Substation Site	Material	Surface Area (acres)	Volume (cubic yards)
Site grading, cut	Soil	21.880	91,000
Site grading, fill [(a)]	Soil	21.880	168,700
Drainage structures	Concrete	0.503	900
Substation equipment foundations	Concrete	1.449	15,000
Excavation for foundation and building footings [(b)]	Soil	1.449	15,000
Cable trenches [(c)]	Concrete	0.002	6
Water line relocation	Soil	~~0.201~~ 0.23	~~1,500~~ 3,500
Internal driveways and parking	Asphalt, concrete, Class II aggregate base	4.820	~~2,000~~ 2,500 (asphalt, concrete) 3,000 (aggregate)
External roads	Asphalt, concrete, Class II aggregate base	0.739	300 (asphalt, concrete) 500 (aggregate)
Rock surfacing	Crushed rock	25.724	10,800
Wall foundation	Concrete	0.038	500
Import Soil Source Area [(d)]	Soil	6.712	80,000 [(e)]

Source: SCE 2009

Notes:

(a) Includes allowances for shrinkage and settlement.

(b) Soil excavated for foundation and building footings would be stockpiled during excavation and later would be graded and compacted onsite.

(c) Concrete cable trenches are factory fabricated and would be delivered rather than poured on site.

(d) The Import Soil Source Area, which is located adjacent to the northeast side of the proposed substation site, would only be excavated if Import Soil Option 1 is selected for construction of the proposed Alberhill Substation.

(e) The applicant estimates that the Import Soil Source Area could provide up to 120,000 cubic yards of soil, but only 80,000 cubic yards would be required for the proposed Alberhill Project.

Import Soil Options

The applicant would obtain the fill required for the proposed substation site using one of the following two options:

- **Import Soil Option 1 (5.2-Acre Source Area):** Excavate a 5.2-acre area (227,000 square feet), the *Import Soil Source Area*, which would be located adjacent to the northeast side of the proposed substation site; or
- **Import Soil Option 2 (Local Quarry):** Truck in soil from a quarry, such as Corona Rock and Asphalt (also known as Vulcan Materials Company–Western Division or Corona Quarry), which is located approximately 32 miles from the proposed substation site at 1709 Sherborn Street, Corona, California. The entire 80,000 cubic yards of soil would be hauled to the proposed Alberhill Substation site during a 60-day period by dump trucks with an estimated capacity of 14 cubic yards each. Approximately 96 roundtrips to the site would be required per day (192 one-way truck trips) for approximately 11,500 one-way truck trips.

[18] The applicant estimates that grading would require 91,000 cubic yards of soil be cut and 157,700 cubic yards be filled at the proposed substation site. An additional 11,000 cubic yards of fill would be required due to subsidence. In total, the applicant estimates that 77,700 cubic yards of fill would be required, which has been rounded for the sake of this analysis to approximately 80,000 cubic yards.

Initial estimates indicate that the 5.2-acre Import Soil Source Area (Figure 2-2x) could provide up to 120,000 cubic yards of soil. A geotechnical study would be completed during final engineering for the proposed Alberhill Project to determine if the Import Soil Source Area would be capable of providing the required 80,000 cubic yards of soil. If geotechnical study recommendations require that a retaining wall or another type of earth-retaining structure would be required for the Import Soil Source Area, new visual simulations and additional environmental analysis pursuant to CEQA may be required.

It is possible that some combination of Import Soil Options 1 and 2 would be used to provide the 80,000 cubic yards of soil for construction of the proposed substation. If, for example, the geotechnical study completed during final engineering of the proposed Alberhill Project indicates that the Import Soil Source Area cannot provide the entire 80,000 cubic yards of soil, the additional soil required may be trucked to the site. If both import soil options are implemented for the import of soil, all project commitments and mitigation measures included in this document that would reduce impacts specific to one import soil option or the other would be applicable to construction of the proposed Alberhill Project.

Preliminary Drainage Design

An external detention basin (volume of 13.5 acre-feet) located at the northern corner of the site between the proposed substation wall and Love Lane would capture and detain surface flow from within the enclosed substation and from the hills to the north and northeast outside the substation walls. Surface flow would be gathered by gravity into concrete swales and directed from east to west into the basin. A surface flow energy dissipation field would be constructed to reduce the velocity of water captured by the swales. Percolation would dissipate water captured by the detention basin to reduce excess discharge from the proposed substation site. Excess discharge from the basin would be conveyed through drainage pipes south to existing discharge points that flow into Temescal Wash.

Surface runoff from the south side of the proposed substation site near Concordia Ranch Road would be collected in drainage pipes and discharged from the property at an existing discharge point that flows into Temescal Wash. Additional detention basins would be incorporated into the drainage design if the 5.2-acre Import Soil Source Area is excavated as part of Import Soil Option 1 (see previous discussion) or if deemed necessary during final engineering for the proposed Alberhill Project (JLC Engineering and Consulting, Inc. 2011; SCE 2011). The final drainage design, which would be based on final geotechnical and soil evaluation results, would be reviewed and approved by Riverside County.

Spill Prevention, Control, and Countermeasure Plan

The grading design for the proposed substation site would incorporate requirements from the Spill Prevention, Control, and Countermeasure (SPCC) Plan because of the planned operation of oil-filled transformers at the substation. Typical SPCC Plan features include secondary containment, curbs, berms, and basins designed and installed to contain spills should they occur. During construction, BMPs for erosion and drainage control would be implemented as specified in the SWPPP (Section 2.4.4.3).

2.4.6.3 Below-Grade and Above-Grade Facility Installation

After the proposed substation site is graded, below-grade facilities would be installed. Below-grade facilities would include a ground grid, trenches, building foundations, equipment foundations, utilities, and the base of the proposed substation wall. Above-grade installation of proposed substation facilities (e.g., capacitor banks, switchracks, transformers, and control building) would commence after the below-grade structures are in place. The design of the ground grid would be based on soil resistivity measurements collected during the geotechnical study that would be conducted prior to construction.

2.4.6.4 Transformer Delivery and Installation

The transformers would be delivered to the proposed Alberhill Substation by heavy-transport vehicles and off-loaded onsite by large cranes with support trucks. The applicant may use a traffic control service to facilitate transformer delivery, if necessary.

2.4.7 Telecommunications Installations

2.4.7.1 Fiber Optic Line Installation

The fiber optic line would be installed overhead and underground on various segments of the proposed projects as described in Sections 2.3.1.2; Tables 2-1 and 2-2; and Figures 2-2x and 2-2x. The overhead fiber optic line would be *underbuilt*—installed on the proposed 115-kV structures below the 115-kV circuits—on crossarms that are 5 to 10 feet wide. The fiber optic lines would be installed in a manner similar to that described above for subtransmission wire stringing. The applicant would not install new poles or replace poles specifically to support the fiber optic lines.

The underground fiber optic line sections would be installed within trenches that would be approximately 18 inches wide and 36 inches deep. A minimum of 3 inches of slurry, dirt, and gravel would be placed on top of the conduit and then the trench would be backfilled. Excess excavated soils would be disposed of offsite in accordance with all laws and regulations. Underground sections may be as long as 2,000 feet. Vaults or pull boxes (which are, essentially, small vaults) would be installed at the ends of each underground section for splicing fiber optic line sections and for pulling line through the conduit. Vaults and pull boxes are used during operations to access the fiber optic line for maintenance.

2.4.7.2 Microwave System Construction (Alberhill Project)

A 120-foot microwave tower would be installed at the proposed Alberhill Substation. Tower material would be delivered by truck and staged at the proposed substation site. After the tower foundation is installed, each tower section would be assembled onsite and erected using a crane and a bucket truck. The microwave dish antenna would be installed on the tower using the bucket truck.

As part of the proposed Alberhill Project, three microwave dish antennas would be installed on existing communication towers at the Santiago Peak Communications Site (two antennas) and the applicant's Serrano Substation (one antenna). The existing communications tower at the Santiago Peak Communications Site would be strengthened because of the additional load from the two new microwave dish antennas proposed to be installed at about 45 feet above ground level. Nine cross members on the existing communications tower would be replaced. In addition, two of the applicant's microwave dish antennas located on the communications tower at an elevation of about 100 feet would be lowered to an elevation of about 35 feet. After installation, there would be a total of seven dish antennas on the communications tower. The applicant stated that up to eight dish antennas could be installed without overloading the communications tower. Modifications to the existing tower and microwave antenna installation would be accomplished using a *gin pole*—a rigid pole with a pulley on the end that is attached to a communications tower and used for raising objects (e.g., new antennas or additional tower sections to increase the height of a tower).

Work on the Santiago Peak communications tower is expected to be completed on 12 days during the course of six weeks and would be scheduled depending on weather. Lowering of the two existing dish antennas and installation of the two new antennas would not result in interruption to electrical service. Work would only be performed during daylight hours.

All work involving the applicant's telecommunication system is coordinated with the applicant's Grid Control Center. Some of the communication system circuits are used for powerline protection, and the Grid Control Center would decide, based on electrical power flow and other conditions, if reduced powerline protection capability is acceptable for a given time period. The communication outage would likely be timed to occur during non-summer months to avoid peak electrical use conditions. The communication outage would not interrupt electrical service.

2.5 Operation and Maintenance of the Proposed Projects

The applicant inspects transmission and subtransmission lines or segments of the lines at least once per year by driving and/or flying by helicopter along the routes. The applicant inspects the entire Serrano–Valley 500-kV Transmission Line by helicopter every other year. The additional time needed to inspect the proposed 500-kV and 115-kV lines would be minimal. The new 500-kV lines and new and modified 115-kV lines would be maintained in a manner consistent with CPUC General Order 165, *Inspection Cycles for Electric Distribution Facilities*. In the event of an emergency and for certain maintenance conditions, helicopters may be used to locate and access affected areas along the proposed 500-kV or 115-kV lines to minimize response and repair times.

The telecommunications system for both of the proposed projects would require routine maintenance, which would include equipment testing, monitoring, and repair. No additional personnel, beyond the applicant's normal staffing levels, would be required for routine telecommunications maintenance along the proposed transmission and subtransmission lines or to operate or maintain the telecommunications system at the proposed Alberhill Substation and other substations that would receive telecommunications components as part of the proposed Alberhill Project. The new telecommunications equipment to be installed at the applicant's Valley, Newcomb, Skylark, Elsinore, Fogarty, Ivyglen, Mira Loma, Serrano, Vista, Tenaja, Barre, and Walnut substations; Irvine Operations Center; and the Santiago Peak and Box Springs communications sites as part of the proposed Alberhill Project would be maintained in conjunction with the telecommunications equipment that already exist at these facilities. Approximately once per year, one individual would perform routine maintenance of the telecommunications components located at the substations.

The proposed Alberhill Substation would be unstaffed, and electrical equipment within the proposed substation would be remotely monitored and controlled by an automated system from the applicant's Valley Substation Regional Control Center. Components of the proposed projects would require routine maintenance and may require emergency repair for electrical service continuity. The applicant's personnel would visit the proposed Alberhill Substation for electrical switching and routine maintenance purposes. Routine maintenance would include equipment testing, equipment monitoring, and repair.

The applicant's personnel would inspect the proposed Alberhill Substation at least once per week from the applicant's Valley Switching Center located at Valley Substation. No additional vehicle trips other than routine trips already conducted for the operation and maintenance of applicant facilities are expected due to operation of the proposed projects. No vehicles would be permanently stationed at the proposed Alberhill Substation.

2.5.1 Water Use during Operations

Water would be used for equipment cleaning, the restroom, and landscaping irrigation during operation and maintenance of the proposed Alberhill Substation. Approximately 3,000 gallons per year of de-ionized water would be used for cleaning electrical equipment at the proposed substation during operations. The water, which is provided by the local water agency and then de-ionized at the applicant's

Valley Substation, would be transported to the proposed Alberhill Substation once per year. All other water used for operation and maintenance of the proposed projects, including landscaping for the proposed Alberhill Substation, would be supplied by the local water agency. The proposed Alberhill Substation would be unattended. A minimal amount of water would be used for the proposed restroom.

There would be no water used for dust suppression for routine operation and maintenance of the proposed transmission and subtransmission lines. There would be no water used to perform line cleaning (insulator washing). The applicant would use polymer insulators that do not require cleaning or washing.

2.5.2 Chemical Storage and Use (Alberhill Project)

The applicant would keep the following chemicals at the proposed Alberhill Substation during operation of the proposed Alberhill Project (see Table 2-2 for quantities):

- Transformer (mineral) oil used as insulating media in the two 500/115-kV transformers;
- Diesel (Low-Sulfur Diesel No. 2) used as fuel for the backup generator;
- SF_6 gas used as insulating media in the 500-kV switchracks and 115-kV circuit breakers; and
- Lead-calcium batteries stored in the control room (no quantity specified by the applicant).

2.5.3 Gas-Insulated Equipment (Alberhill Project)

The insulating media in the proposed 500-kV switchracks and 115-kV circuit breakers at the proposed Alberhill Substation would be SF_6 gas, which is one of the four primary greenhouse gases as defined by the Kyoto Protocol (Section 4.7, "Greenhouse Gases"). All gas-insulated equipment purchased and installed by the applicant, including the equipment that would be installed as part of the proposed Alberhill Project, has a manufacturer's certified leak rate of 0.5 percent per year or less. As older equipment is replaced, newer manufacturer-certified equipment is installed that meets this SF_6 specification.

The applicant reports annual SF_6 emissions to the California Air Resources Board pursuant to California Code of Regulations (CCR), Title 17, Sections 95350 through 95359. Emissions from the proposed gas-insulated equipment, once operational, would be included in the reports. The applicant complies with the Maximum Annual SF_6 Emission Rates established in CCR Title 17, section 95352, which, by 2020, would be 1 percent per year for all gas-insulated equipment.

2.6 Project Commitments

The applicant has committed to the items listed in Table 2-12 as part of the design of the proposed projects. Unless otherwise specified, the following Project Commitments apply to both of the proposed projects.

Table 2-12 Project Commitments

Project Commitment A	Landscaping and Irrigation Plan. For the Alberhill Project, prior to the start of construction, the applicant would develop a Landscaping and Irrigation Plan for Alberhill Substation road frontage only along Temescal Canyon Road, Concordia Ranch Road and Love Lane that is consistent with surrounding community standards, substation security and safety requirements. The applicant would consult with Riverside County about the Plan and incorporate applicable County recommendations to the extent possible. Landscaping would be designed to filter views from the surrounding community and other potential sensitive receptors near the proposed substation and be consistent with the surrounding community. The landscape plan would include a plant species list and installation and construction

Table 2-12 Project Commitments

	requirements. The applicant would contract a landscape architect to complete the landscaping plan during final engineering for the Alberhill Project. Irrigation and landscaping installation would occur after construction of the substation perimeter wall, subtransmission and transmission poles/towers erected, underground utility lines/cable ducts installed, and water service has been established. During operations, the applicant would maintain the substation site pursuant to the Landscaping and Irrigation Plan and be responsible for upkeep as long as the applicant owns the property.
Project Commitment B	Worker Environmental Awareness Plan. Prior to construction of the proposed projects, a Worker Environmental Awareness Plan would be developed based on final engineering designs, the results of preconstruction surveys, project commitments, and mitigation measures imposed by the California Public Utilities Commission. A presentation would be prepared by the applicant and shown to all site workers prior to their start of work. A record of all trained personnel would be kept with the construction foreman. In addition to the instruction for compliance with any site-specific biological or cultural resource protective measures and project mitigation measures, all construction personnel would also receive the following: • A list of phone numbers of the applicant's personnel with the (archeologist, biologist, environmental ~~compliance~~ coordinator, and regional spill response coordinator); • Instruction on the South Coast Air Quality Management District Rule 403 for control of dust; • Instruction on what typical cultural resources look like, and if discovered during construction, to suspend work in the vicinity of any find and contact the site foreman and archeologist or environmental ~~compliance~~ coordinator; • Instruction on individual responsibilities under the Clean Water Act, the Storm Water Pollution Prevention Plan for the projects, site-specific Best Management Practices, and the location of Material Safety Data Sheets for the projects; • Instructions to notify the foreman and regional spill response coordinator in case of hazardous materials spills and leaks from equipment or upon the discovery of soil or groundwater contamination; • A copy of the truck routes to be used for material delivery; and • Instruction that noncompliance with any laws, rules, regulations, or mitigation measures could result in being barred from participating in any remaining construction activities associated with the projects.
Project Commitment C	Raptor Protection on Power Lines. The applicant would design all 115-kV subtransmission structures consistent with the *Suggested Practices for ~~Raptor~~ Avian Protection on Power Lines: The State of the Art in 2006 ~~2012~~* (APLIC 2006 ~~2012~~).
Project Commitment D	Habitat Restoration and Revegetation Plan. With input from the appropriate resource agencies, the applicant would develop and implement a Habitat Restoration and Revegetation Plan to restore temporarily impacted areas where construction of the projects would be unable to avoid impacts on native vegetation and sensitive resources, such as wetlands, wetland buffer areas, riparian habitat, and other sensitive natural communities. The applicant would restore all temporarily impacted areas disturbed during construction of the projects, including staging areas and pull, tension, and splicing sites, to as close to pre-construction conditions as possible, or to the conditions agreed upon between the applicant and landowner. Replanting and reseeding would be conducted under the direction the applicant or contract biologists. If revegetation would occur on private property, revegetation conditions would be part of the agreement between the applicant and the landowner.

Table 2-12 Project Commitments

Project Commitment E	Grading Plan. SCE shall consult with ~~The~~ Riverside County ~~Flood Control and Water Conservation District shall be consulted~~ regarding the grading plans for construction and operation of the proposed projects. ~~The County will review and approve final grading (and drainage) plans prior to start of construction.~~ Storm water improvements ~~sections of the plans~~ shall be designed to maintain a discharge of storm water runoff consistent with the characteristics of storm water runoff presently discharged from project areas including the Alberhill Substation site. Measures included in the plans shall minimize adverse effects on existing or planned storm water drainage systems. Ground surface improvements installed at the site pursuant to the plans shall be designed to minimize discharge of materials that would contribute to a violation of water quality standards or waste discharge requirements. The final grading design shall include features that would minimize erosion and siltation both onsite and offsite. In addition, the final grading (and drainage) design shall be based on the results of the geotechnical study and soil evaluation for the substation site (Project Commitment F).
Project Commitment F	Geotechnical Study, Soil Testing, and Seismic Design Standards. Prior to the start of construction, the applicant shall conduct geotechnical and hydrologic studies and field investigations of the Alberhill Substation site, 500-kV transmission line routes, all 115-kV subtransmission line routes, and all telecommunications line routes. The studies shall include an evaluation of the depth to the water table, liquefaction potential, physical properties of subsurface soils, soil resistivity, and slope stability (landslide susceptibility). The studies shall include soil boring and laboratory testing to determine the engineering properties of soils, characterize soils and underlying bedrock units, characterize groundwater conditions, and evaluate faulting and seismicity risk. Soil samples shall be collected and analyzed for common contaminants and the presence of hazardous materials. If chemicals are detected in the soil samples at concentrations above ~~action~~ acceptable threshold levels, the applicant shall avoid the ~~contaminated~~ above threshold soil or work with the property owner to remove the ~~contaminated~~ above threshold soil. The results of this study shall be applied to final engineering designs for the projects. The information collected shall be used to determine final tubular steel pole foundation designs. In addition, the applicant shall design Alberhill Substation consistent with the applicable federal, state, and local codes, including the Institute of Electrical and Electronic Engineers 693 Standard, *Recommended Practices for Seismic Design of Substations*.
Project Commitment G	Aircraft Flight Path Safety Provisions and Consultations. Prior to construction, the applicant shall consult with the Federal Aviation Administration and ensure the filing of forms and associated specifications per the requirements of Federal Aviation Regulations Part 77 (Objects Affecting Navigable Airspace). ~~The applicant shall mark and light the components of the projects consistent with Federal Aviation Administration recommendations unless otherwise directed by the CPUC.~~ The applicant shall review all recommendations and/or determinations from the FAA and mark and/or light the FAA recommended components where the applicant finds they are reasonable and feasible.
Project Commitment H	Noise Control and Notification. The applicant shall implement the following noise control measures for the proposed projects: • All construction and general maintenance activities, except in an emergency, shall be limited to the hours of 7 a.m. to 7 p.m. and prohibited on Sundays and all legally proclaimed holidays. ~~If the California Independent System Operator and/or Caltrans require that conductor stringing over freeways or highways occur after 7:00 p.m., or on a Sunday, the applicant would obtain variances from all applicable jurisdictions.~~ SCE will obtain all relevant ministerial or non-discretionary noise permits from local jurisdictions. In the event that construction activities are necessary on days or hours outside of what is specified by the local ordinance, SCE would provide five-day advanced notification, including a general description of the work to be performed, location and hours of construction anticipated, to the CPUC, the local jurisdiction, and residents within 300 feet of the anticipated work, as well route all construction traffic away from residences, schools and recreational facilities to the extent feasible. • Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. • Construction traffic shall be routed away from residences and schools, where feasible. • Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. A "common sense" approach to vehicle use shall be applied: if a vehicle is not required for use immediately or continuously for construction activities, its

Table 2-12 Project Commitments

	engine should be shut off. Note: certain equipment, such as large diesel-powered vehicles require extended idling for warm-up and repetitive construction tasks. • The applicant will notify all receptors within 500 feet of construction of the potential to experience significant noise levels during construction. • During construction, the applicant will use a temporary noise barrier that blocks the line of sight between the construction area and the residence ~~sound walls, noise-reduction blankets, or other noise reduction measures prior to developing the project site in~~ areas where sensitive receptors would be subjected to significant noise impacts. • The applicant would shield small stationary equipment with portable barriers within 100 feet of residences, where feasible. • The applicant would minimize engine idling and turn off engines when not in use. • Where blasting is required for the Alberhill system Project, the applicant would conduct additional pre-blast notification and coordination with residents, utilities, and others that may be affected by blasting operations.
Project Commitment I	Agricultural Uses. Existing agricultural and grazing uses within the existing and proposed ROW areas shall be allowed to continue during operation of the proposed projects. In addition, the applicant shall coordinate construction and maintenance activities with agricultural landowners to avoid interference with grazing and agricultural activities unless such coordination is not possible due to emergency circumstances.
Project Commitment J	Air Emissions Controls. The applicant would implement the following fugitive dust control measures for the Valley–Ivyglen Subtransmission Project: • Water three times per day or as needed during excavation, bulldozing, scraping, and grading activities, per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007). • ~~Water storage piles by hand at a rate of 1.4 gallons/hour-yard, per SCAQMD's Table XI-B, Mitigation Measure Examples: Fugitive Dust from Materials Handling (Rev. 4/2007)~~ Water storage piles twice a day, resulting in a 50% fugitive dust control efficiency. • Limit vehicle speeds on unpaved roads to 15 miles per hour, per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007). • The applicant would implement the following fugitive dust control measures for the Alberhill System Project: • ~~Maintain 15 percent soil moisture conditions~~Water three times per day or as needed during excavation, bulldozing, scraping, and grading activities, per SCAQMD CEQA Air Quality Handbook (1993), Table 9-9-G-1. • Water storage piles twice a day, resulting in a 50% fugitive dust control efficiency. • ~~Water unpaved roads twice per day, per SCAQMD's Table XI-D Mitigation Measure Examples: Fugitive Dust from Unpaved Roads (Rev. 4/2007)~~ Limit vehicle speeds on unpaved roads to 15 miles per hour, per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007).

Sources: SCE 2011, 2014

2.7 Permitting and Consultation Requirements

Table 2-13 lists the federal, state, and local permits and consultations that may be required for construction and operation of the proposed projects.

Table 2-13 Consultation and Permitting Requirements

Agency / Group	Jurisdiction	Consultation or Permit
Federal		
United States Army Corps of Engineers	Work within Waters of the United States including wetlands	Consultation with the USACE, ~~RWQCB, CDFW, and USFWS~~ for a Clean Water Act Section 404 ~~Water Quality Certification~~ Nationwide Permit Authorization

Table 2-13 Consultation and Permitting Requirements

Agency / Group	Jurisdiction	Consultation or Permit
United States Fish and Wildlife Service	Federally listed threatened or endangered species impacts	Take authorization (if required) and consultation with the USFWS. Consultation for Section 7 or 10 of the Federal Endangered Species Act.
United States Forest Service	United States National Forest System land	Permission to install communications equipment (i.e., two new microwave dish antennas) on an existing communications tower at the Santiago Peak Communications Site. Thirty-day Technical Data Form notice to be sent to all leaseholders at the Santiago Peak Communications Site. A United States Forest Service representative for the Cleveland National Forest confirmed that no environmental review pursuant to the National Environmental Policy Act would be required for the installation of two microwave dish antennas on an existing communications tower at the communication site (Taylor 2012).
Federal Aviation Administration	Aircraft operation and safety in United States air space	Consultation to determine whether Congested Area Plan approval for helicopter external-load operations is required. Consultation to ensure compliance with Federal Aviation Regulations Part 77 (Objects Affecting Navigable Airspace).
State		
California Department of Fish and Wildlife	State listed threatened or endangered species impacts. Work in Waters of the State.	Take authorization (if required) and consultation with the CDFW Consultation for Section 2081 of the California Endangered Species Act. Consultation is anticipated to be completed as part of the Participating Special Entity (PSE) application process to obtain "take" coverage under the WRCMSHCP. Consultation for Section 1600 of the Fish and Game Code (streambed alteration agreement).
California Department of Transportation	Acts on behalf of the U.S. Department of Transportation pursuant to California Streets and Highways Code 660 to 711.21 and California Code of Regulations 1411.1 to 1411.6.	Caltrans requires that all work done within or spanning a state or interstate highway ROW receives an encroachment permit. Permit required for oversize and/or overweight truck loads that exceed the limits of a legal load as defined by the California Vehicle Code.
Santa Ana Regional Water Control Board	National Pollutant Discharge Elimination System coverage and Clean Water Act Section 401 oversight	All required Permit Registration Documents (PRDs) ~~Notice of Intent~~ for Construction General ~~Construction~~ Permit (CGP) for Storm Water Discharge. Section 401 Water Quality Certification.
State Historic Preservation Office, Native American Heritage Commission	Historic, cultural, and archaeological resources	Consultation for Section 106 of the National Historic Preservation Act may be required. Consultation regarding known cultural resources. Consultation regarding the listing of cultural or historic resources in the National Register of Historic Places or California Register of Historical Resources. Cultural Resources Use Permit, Field Use Authorization, or Archeological Resources Protection Act Permit (as required) for land disturbance in culturally sensitive areas.
Regional and Local		
Elsinore Valley Municipal Water District	Public water pipelines	Permit and consultation to relocate water pipeline at proposed substation site. The pipeline is owned and operated by EVMWD.
South Coast Air Quality Management District	Air pollution and greenhouse gas emissions including fugitive dust	The stationary diesel generator at the proposed substation may require a SCAQMD permit. Rule 403 Permit for fugitive dust. Notification of demolition and asbestos removal (Rule 1403) for demolition of structures at horse ranch.
Riverside County Habitat Conservation Agency	Threatened or endangered species (including the Stephen's	Consultation with RCHCA to determine "take" permit (Federal and State Endangered Species Act) and mitigation requirements for proposed project areas in Riverside County

Table 2-13 Consultation and Permitting Requirements

Agency / Group	Jurisdiction	Consultation or Permit
	kangaroo rat), and conservation plans	that would cross core habitat reserves and other areas covered by a Habitat Conservation Plan.
Western Riverside County Regional Conservation Authority	Western Riverside County Multiple Species Habitat Conservation Plan	Consultation with the Western Riverside County RCA to determine permit and mitigation requirements for proposed project areas
Riverside County	Protected trees, aqueduct crossings, and grading in unincorporated Riverside County	Permits required for tree removal (e.g., mature trees and oak woodlands). The grading permit would incorporate requirements from the Spill Prevention, Control, and Countermeasure Plan because of the oil-filled transformers at the substation (Codified Federal Regulations Part 112.1–112.7).
Riverside County Department of Building and Safety	All buildings constructed or demolished in unincorporated Riverside County	Permit required for construction of the proposed substation and to erect steel. Demolition permit required for removal of the existing horse ranch facilities on the proposed substation site including an asbestos clearance permit. Permit required for design of the perimeter wall to ensure consistency with the surrounding community.
Riverside County Department of Environmental Health	Installation of wastewater treatment systems, abandonment and abatement of septic systems, and destruction of water wells	Septic system installation permit required for the new septic system at proposed substation site. Closure permit required for the abandonment and abatement of existing septic systems. Permit required for the destruction of onsite water well.
Riverside County Transportation Department	Encroachment on railroad, road crossings, and other public ROWs (including excavation along ROWs)	Encroachment permit
Riverside County Flood Control and Water Conservation District	Flood control and water conservation in the district; Sedco and Wildomar Master Drainage Plan boundaries	Encroachment permit
Cities of Lake Elsinore, Menifee, Perris, and Wildomar (ministerial)	Construction activities in public ROW or easements, tree protection, and grading within the city limits	Encroachment permits, tree removal permits, and grading permits

Source: SCE 2011
Key: Caltrans = California Department of Transportation, CDFW = California Department of Fish and Wildlife, CEQA = California Environmental Quality Act, EVMWD = Elsinore Valley Municipal Water District, kV = kilovolt, RCA = Regional Conservation Authority, RCHCA = Riverside County Habitat Conservation Agency, ROW = right-of-way, RWQCB = Regional Water Quality Control Board, SCAQMD = South Coast Air Quality Management District, SWPPP = Storm Water Pollution Prevention Plan, USACE = U.S. Army Corps of Engineers, USFWS = U.S. Fish and Wildlife Service

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Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET ED-SCE-VIG Deficiency Data Request A

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 05/28/2015

Question A1-2:

Aesthetics - Valley-Ivyglen

Provide updated visual simulations for the Valley-Ivyglen Subtransmission Line project to represent 2015 existing conditions. Visual simulations may not need to be updated if the applicant can provide proof that the visual setting has not changed since the last provided visual simulation. Proof can be provided with a recent (3-4 months) photo from the exact same location that demonstrates no noticeable changes have occurred within that view.

Response to Question A1-2:

The attachment includes five new photographs taken in June 2015, each paired with the corresponding existing view photograph from the PMR. No noticeable changes have occurred since the photos were taken in 2013. Therefore updated visual simulations are not needed to represent the 2015 conditions.

Existing View (2013) from Interstate 15 near Horsethief Canyon Road looking southeast

New photograph - June 2015

Data Request A1-2.1
Existing View (2013) and 2015 Photograph
Valley-Ivyglen 115 kV Subtransmission Line Project

Existing View (2013) from Highway 74 at Allan Street looking north

New photograph - June 2015

Data Request A1-2.2
Existing View (2013) and 2015 Photograph
Valley-Ivyglen 115 kV Subtransmission Line Project

ENVIRONMENTAL VISION
062515

Existing View (2013) from Interstate 15 near Central Avenue looking southeast

New photograph - June 2015

Data Request A1-2.3
Existing View (2013) and 2015 Photograph
Valley-Ivyglen 115 kV Subtransmission Line Project

Existing View (2013) from Interstate 15 at Indian Truck Trail looking southeast

New photograph - June 2015

Data Request A1-2.4
Existing View (2013) and 2015 Photograph
Valley-Ivyglen 115 kV Subtransmission Line Project

ENVIRONMENTAL VISION
062515

Existing View (2013) from Lake Street near Temescal Canyon Road looking north (Segment 5)

New photograph - June 2015

Data Request A1-2.5
Existing View (2013) and 2015 Photograph
Valley-Ivyglen 115 kV Subtransmission Line Project

ENVIRONMENTAL VISION
062515

Black, Kristi

From: Jennifer Wolf <Jennifer.Wolf@sce.com>
Sent: Wednesday, November 04, 2015 12:34 PM
To: Black, Kristi
Cc: Bernice Goldsmith; Alisa Krizek; Thomas Burhenn; Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov)
Subject: Alberhill on-site water

Kristi,
After further discussion with the Alberhill Project Team, SCE will not pursue on-site water usage from the existing wells on the property. The response submitted by SCE on October 9, 2015 is our confirmed response. The project will use water provided by the local agencies as stated in DR response F-1.
Thanks,
Jennifer

Black, Kristi

From: Jennifer Wolf <Jennifer.Wolf@sce.com>
Sent: Thursday, November 19, 2015 1:01 PM
To: Black, Kristi
Cc: Thomas Burhenn; Bernice Goldsmith; Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov); Sadowski, Carl; Alisa Krizek; Geetha Shanmugasundaram
Subject: RE: (External):RE: Alberhill questions related to staging area changes and helicopter construction
Attachments: Staging Area ASP8_edited.pdf

Kristi,
Here are our responses to your questions regarding the staging area changes and helicopter construction:

1. By how many workers would the maximum workers per day (in SCE's response to Data Request G3) for 500-kV construction be reduced should SCE use the Helicopter Construction option?
   SCE Response: There may be a reduction in workforce per construction activity, but there are more overlapping activities with helicopter construction resulting in the same number for maximum workers onsite.

2. We are trying to determine if the Traffic Study, done prior to SCE's revisions to project workers per day and staging areas, adequately characterizes the ASP project traffic impacts when taking into account the revisions to project workers per day and staging areas.
   a. How many workers could be expected to simultaneously be based out of the Alberhill Substation (for substation construction) and Staging Areas ASP1, ASP2, and ASP3 (for 500-kV and 115-kV construction)? Would there ever be more than 150 workers based out of these areas?
   SCE Response: A maximum of 100 workers are conservatively estimated at Alberhill Substation site. A maximum of 100 workers are conservatively estimated to be spread among Staging Areas ASP1, ASP2, and ASP3.

   b. Reevaluate whether Staging Area ASP8 (near intersection of Campbell Street and Diamond Drive in Lake Elsinore) is needed, given that it contains several sensitive biological resources (see attached) and given that it is far from the staging areas evaluated in the traffic impact analysis.
   SCE Response: The limits of Staging Area ASP8 has been revised to avoid the biological resources, see attached PDF. Staging Area ASP8 would be used for material storage, not as a reporting location for more than two workers. It is anticipated that one security guard and one worker would be based out of this staging yard. Because this staging yard would not be utilized as a reporting location and Staging Area ASP8 is located near the 115 kV subtransmission line, the Traffic Study adequately characterized the traffic impacts.

Please let us know if you have any questions or additional comments.
Thanks,
Jennifer

From: Black, Kristi [mailto:KBlack@ene.com]
Sent: Thursday, November 05, 2015 12:59 PM
To: Jennifer Wolf <Jennifer.Wolf@sce.com>; Alisa Krizek <Alisa.Krizek@sce.com>
Cc: Thomas Burhenn <Thomas.Burhenn@sce.com>; Bernice Goldsmith <Bernice.Goldsmith@sce.com>; Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov) <jensen.uchida@cpuc.ca.gov>; Sadowski, Carl <CSadowski@ene.com>
Subject: (External):RE: Alberhill questions related to staging area changes and helicopter construction

All,
My apologies. I did not attach the referenced staging area 8 bio survey figure to my email.
Kristi

From: Black, Kristi
Sent: Thursday, November 05, 2015 12:49 PM
To: Jennifer.Wolf@sce.com; alisa.krizek@sce.com
Cc: Thomas.Burhenn@sce.com; Bernice.Goldsmith@sce.com; Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov); Sadowski, Carl
Subject: Alberhill questions related to staging area changes and helicopter construction

Jennifer and Alisa,

I have a few questions regarding some of SCE's project changes:

1. By how many workers would the maximum workers per day (in SCE's response to Data Request G3) for 500-kV construction be reduced should SCE use the Helicopter Construction option?
2. We are trying to determine if the Traffic Study, done prior to SCE's revisions to project workers per day and staging areas, adequately characterizes the ASP project traffic impacts when taking into account the revisions to project workers per day and staging areas.
    a. How many workers could be expected to simultaneously be based out of the Alberhill Substation (for substation construction) and Staging Areas ASP1, ASP2, and ASP3 (for 500-kV and 115-kV construction)? Would there ever be more than 150 workers based out of these areas?
    b. Reevaluate whether Staging Area ASP8 (near intersection of Campbell Street and Diamond Drive in Lake Elsinore) is needed, given that it contains several sensitive biological resources (see attached) and given that it is far from the staging areas evaluated in the traffic impact analysis.

Please feel free to call if you need clarifications on these questions. If you could also give me a time frame for when we may receive a response to these questions, that would be helpful.

Best,
Kristi

ecology and environment, inc.

Kristi Black, *Planner*
505 Sansome Street, Suite 300, San Francisco, California 94111
Phone: 415-398-5326
kblack@ene.com • www.ene.com

Black, Kristi

From: Alisa Krizek <Alisa.Krizek@sce.com>
Sent: Thursday, September 10, 2015 10:20 AM
To: Black, Kristi
Cc: Bernice Goldsmith; Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov); Jennifer Wolf
Subject: RE: Minor follow up questions on Project Commitment J (air quality)
Attachments: Alberhill Air Quality Appendix_Emission Factor Update_09-08-15 import.xls; Alberhill Air Quality Appendix_Emission Factor Update_09-08-15 borrow s....xls; VIG Complete AQ Appendix_Emission Factor Update_09-08-15.xls

Hi Kristi,

Please see the responses below in italics.

Thanks and have a good one,

Alisa Krizek
Environmental Project Manager
Project Environmental Management
Corporate Environmental Health and Safety
Southern California Edison

1218 South 5th Avenue
Monrovia, CA 91016
Office (626) 462-8641 / Pax 74641
Mobile (626) 703-8910

From: Black, Kristi [mailto:KBlack@ene.com]
Sent: Wednesday, August 26, 2015 11:05 AM
To: Jennifer Wolf <Jennifer.Wolf@sce.com>
Cc: Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov) <jensen.uchida@cpuc.ca.gov>
Subject: Minor follow up questions on Project Commitment J (air quality)

Hi Jennifer,

As we discussed on the call today, we have some minor follow up questions regarding SCE's revisions to Project Commitment J. I'm sending you this email to summarize. Note that the Project Commitment J was drafted based on assumptions used in SCE's emissions calculations. We want to make sure that these are correct:

- **VIG:** SCE revised the measure to require watering three times per day or as needed per SCAQMD's Table XI-A, Mitigation Measure Examples. This table measure requires application of water every 3 hours to disturbed areas.

In order to correct the reference, SCE has modified VIG Project Commitment J: "Water three times per day or as needed during excavation, bulldozing, scraping, and grading activities, in order to ensure compliance with SCAQMD Rule 403, Fugitive Dust. ~~per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007).~~"

- **ASP:** SCE revised the measure to require watering three times per day or as needed per SCAQMD's Air quality Handbook (1993), Table 9-9-G-1, but this table pertains to dirt conditions and moisture content. Maybe this table reference is a typo and it should refer to Table XI-A? And should the measure state water every 3 hours?

In order to correct the reference, SCE has modified ASP fugitive dust control measure: "Water three times per day or as needed during excavation, bulldozing, scraping, and grading activities, in order to ensure compliance with SCAQMD Rule 403, Fugitive Dust. ~~per SCAQMD's Table XI-A, Mitigation Measure Examples: Fugitive Dust from Construction and Demolition (Rev. 4/2007)."~~

- **VIG/ASP:** SCE commits to limit vehicle speeds on unpaved roads to 15 miles per hour, per SCAQMD's Table XI-A, Mitigation Measure Examples. SCE's emissions calculations spreadsheets indicate a control efficiency of 55% using this measure for unpaved roads, while the SCAQMD Table IX-A says 57%. This change does not affect the emissions calculations very much, but we want to make sure there is consistency. Should the emissions calculations assume 57%?

SCE has modified the VIG and ASP emissions calculation spreadsheets to assume 57% control efficiency for limiting vehicle speed limits on unpaved roads to 15 mph. Modified spreadsheets are attached as "VIG Complete AQ Appendix_Emission Factor Update_09-08-15.xls" and "Alberhill Air Quality Appendix_Emission Factor Update_09-08-15 import.xls" and "Alberhill Air Quality Appendix_Emission Factor Update_09-08-15 borrow site.xls"

- **Project Description:** SCE's calculations of emissions assumes no storage piles for VIG despite trenching work taking place along segment VIG8. We want to make sure this assumption is correct.

A minimal amount of soil storage piles are anticipated during trenching for the underground cable. The emissions calculations have been modified to account for the particulate matter emissions from this soil handling in Table 24. Modified spreadsheets are attached as "VIG Complete AQ Appendix_Emission Factor Update_09-08-15.xls"

Please let me know if you have any questions about these.

Thanks,
Kristi

ecology and environment, inc.

Kristi Black, *Planner*
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Phone: 415-398-5326
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Additional Staging Area Habitat and Resource Assessment Report for the Southern California Edison Alberhill System and Valley-Ivyglen Phase 2 Projects

Prepared for:

Southern California Edison
1218 South Fifth Avenue
Monrovia, CA 91016

Prepared by:

AECOM
901 Via Piemonte
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Kidd Biological, Inc.
38249 Oak Bluff Lane
Murrieta, CA 92562

September 2015

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ACRONYMS

amsl	above mean sea level
ARL	Additional Reserve Lands
ASP	Alberhill System Project
BCC	Bird of Conservation Concern
BTR	Biological Technical Report
BUOW	western burrowing owl
CAM	Cismontane Alkali Marsh
CAPS	Criteria Area Plant Species
CASSA	Criteria Area Species Survey Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
DBESP	Determination of Biologically Equivalent or Superior Preservation
DDL	Disturbed/Developed Land
EO	Element Occurrence
ESA	Endangered Species Act
°F	degrees Fahrenheit
FACW	Facultative Wetland
FC	Field Croplands
FD	Federally Delisted
FE	Federally Endangered
FP	Fully Protected
FR	Federal Register
FSS	Forest Service Sensitive
FT	Federally Threatened
GIS	Geographic Information Systems
GPS	Global Positioning System
MFS	Mulefat Scrub
mph	miles per hour
MVC	Manual for California Vegetation
NEPS	Narrow Endemic Plant Species
NEPSSA	Narrow Endemic Plant Species Survey Area
NNG	Non-Native Grassland
OW	Ornamental Woodlands
PQP	Public/Quasi-Public
PSE	Participating Special Entity
RCFCD	Riverside County Flood Control District
RSS	Riversidean Sage Scrub
RTLA	Riverside County Transportation and Land Management Agency
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison

SE	State Endangered
SSC	Species of Special Concern
SR	State Route
ST	State Threatened
SWS	Southern Willow Scrub
TS	Tamarisk Scrub
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VIG	Valley-Ivyglen
WRCMSHCP	Western Riverside County Multiple Species Habitat Conservation Plan

1.0 INTRODUCTION

This report summarizes the results of a habitat and resource assessment survey completed by AECOM within Riverside County, California. The habitat and resource assessment survey was conducted September 15 and 16, 2015, in support of the additional staging areas for the Southern California Edison (SCE) Valley-Ivyglen (VIG) Phase 2 Project and Alberhill System Project (ASP) (Figure 1).

1.1 Project Description

The SCE ASP and VIG Phase 2 Project would improve reliability and meet projected electrical load requirements in the western Riverside County area.

Six additional potential staging areas have been proposed as required in support of the projects: staging areas VIG 10, VIG 11, VIG 12, VIG 13, VIG 14, and ASP 14.

A staging area is a physical location where materials and equipment are temporarily stored during construction. Preparation of the staging areas would include temporary perimeter fencing and the application of gravel or crushed rock. Land that may be disturbed at the staging areas would be restored to pre-construction conditions or to the landowner's requirements following the completion of construction.


Overview Map
Project Site General Location
Lancaster
Palmdale
Lake Los Angeles
Adelanto
El Mirage Valley
Victorville
Apple Valley
Acton
Hesperia
Wrightwood
San Bernardino Mountains
Crestline
Lake Arrowhead
Big Bear City
Yucca Valley
Highland
Fontana
Ontario
Pasadena
Arcadia
Glendora
Baldwin Park
Alhambra
El Monte
Pomona
Chino
Glen Avon
Riverside
Grand Terrace
Loma Linda
Yucaipa
Redlands
Whittier
Rowland Heights
Diamond Bar
Pedley
Moreno Valley
Beaumont
Banning
Desert Hot Springs
Palm Springs
Cathedral City
Palm Desert
La Quinta
Downey
Norwalk
Yorba Linda
Corona
Lakewood
Cypress
Orange
Fullerton
Perris
Hemet
Lake Elsinore
Wildomar
Murrieta
Temecula
Santa Ana
Westminster
Fountain Valley
Irvine
Rancho Santa Margarita
Costa Mesa
Newport Beach
Lake Forest
Mission Viejo
Laguna Beach
Laguna Niguel
San Clemente
Falbrook
Valley Center
Vista
Oceanside
San Marcos
Carlsbad
Escondido
Encinitas
Ramona
Julian
Poway
Borrego Springs
Gulf of Santa Catalina
Lemon Grove
National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC
N
30
Miles
DATE: 9/17/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: ESRI National Geographic Basemap, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas
FIGURE 1
Regional Location
Kidd
BIOLOGICAL INC.

1.2 Staging Area Locations

SCE proposes to add six staging areas to the ASP and VIG Phase 2 Project. The additional staging areas, including a 500-foot biological survey buffer (buffer), are located on private property, within the Temescal Valley, south of Corona, California (Figure 2). The staging areas can be found on the Lake Elsinore (staging areas VIG 11–VIG 14 and ASP 8) and Romoland (staging area VIG 10) 7.5-minute U.S. Geological Survey (USGS) topographic quadrangles. The location of each staging area is summarized below:

- Staging area VIG 10 (County Parcel Number 331-240-005)
    - A 12.1-acre parcel located west of Menifee Road and south of Case Road, on north side of Rouse Road in unincorporated Riverside County.
    - Located in the southern ¼ of Section 14 and the northern ¼ of Section 23 within Township 5 South, Range 3 West.

- Staging area VIG 11 (County Parcel Number 347-090-004)
    - An 8.5-acre parcel located north of Highway 74 on Crater Drive in unincorporated Riverside County.
    - Located in the southwestern ¼ of Section 20 and the northwestern ¼ of Section 29 within Township 5 South, Range 4 West.

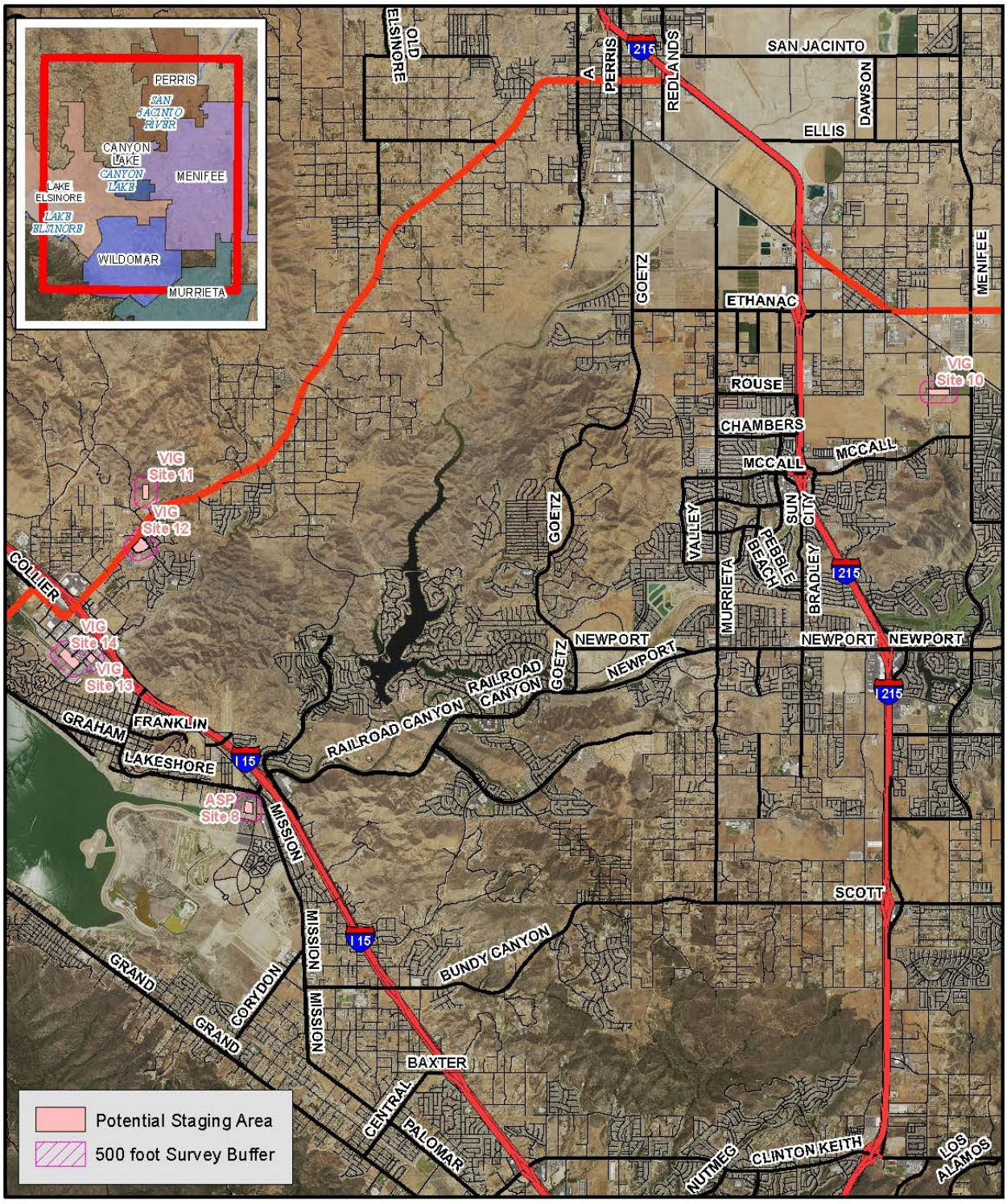
- Staging area VIG 12 (County Parcel Number 347-120-047)
    - A 13-acre parcel on the corner of Highway 74 and Rosetta Canyon Drive in the City of Lake Elsinore.
    - Located in the southwestern ¼ of Section 29 and the southeastern ¼ of Section 30 within Township 5 South, Range 4 West.

- Staging area VIG 13 (County Parcel Number 377-160-014)
    - A 5-acre parcel on the southeast corner of Chaney Street and West Minthorn Street in the City of Lake Elsinore.
    - Located in the southern ¼ of Section 31 within Township 5 South, Range 4 West and an unsectioned portion of Township 6 South, Range 4 West.

- Staging area VIG 14 (County Parcel Number 377-140-027)
    - A 17.2-acre parcel approximately 0.17 mile south of West Minthorn Street on the northwest side of Chaney Street in the City of Lake Elsinore.
    - Located in the southern ¼ of Section 31 within Township 5 South, Range 4 West and an unsectioned portion of Township 6 South, Range 4 West.

- Staging area ASP 8 (County Parcel Number 373-210-038)
    - An 8.8-acre parcel approximately 0.11 mile southwest of Lakeshore Drive and 0.04 mile west of Diamond Drive in the City of Lake Elsinore.
    - Located in the southern ½ of Section 9, the northwestern ¼ of Section 16, and an unsectioned portion of Township 6 South, Range 4 West.

This survey investigated all habitat within the proposed staging areas, including a 500-foot buffer. All six proposed staging areas fall within the Western Riverside County Multiple Species Habitat Conservation Plan area (WRCMSHCP) (County of Riverside 2003a). The elevation of the various survey areas investigated ranged from approximately 1,242 feet to 1,675 feet above mean sea level (amsl).


PERRIS
SAN JACINTO RIVER
CANYON LAKE
MENIFEE
LAKE ELSINORE
WILDOMAR
MURRIETA
OLD ELSINORE
A
PERRIS
I 215
REDLANDS
SAN JACINTO
DAWSON
ELLIS
GOETZ
ETHANAC
MENIFEE
VIG Site 10
ROUSE
CHAMBERS
MCCALL
VIG Site 11
VIG Site 12
VALLEY
SUN CITY
PEBBLE BEACH
BRADLEY
MURRIETA
COLLIER
VIG Site 14
VIG Site 13
NEWPORT
RAILROAD CANYON
GRAHAM
FRANKLIN
LAKESHORE
I 15
ASP Site 8
MISSION
SCOTT
BUNDY CANYON
GRAND
CORYDON
BAXTER
CENTRAL
PALOMAR
NUTMEG
CLINTON KEITH
LOS ALAMOS
Potential Staging Area
500 foot Survey Buffer
N
3
Miles
DATE: 9/17/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: ESRI National Geographic Basemap, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas
FIGURE 2
Vicinity Map
Kidd BIOLOGICAL INC.

2.0 METHODS AND SURVEY LIMITATIONS

2.1 Literature and GIS Data Search

Prior to the field survey, species occurrences from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) RareFind3 (CDFW 2015) and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2015a) were queried for the topographic quadrangles wherein the project (i.e., additional proposed staging areas for the ASP and VIG Phase 2 Project) lies. The Lake Elsinore and Romoland 7.5-minute USGS topographic quadrangles were used as the center of the 5-mile query within both the CNDDB and CNPS databases to determine which sensitive plant and wildlife species needed to be analyzed for the potential of occurrence within the additional proposed staging areas. The 10 additional surrounding topographic quadrangles within the project area database queries were Lake Mathews, Steele Peak, Perris, Lakeview, Alberhill, Winchester, Sitton Peak, Wildomar, Murrieta, and Bachelor Mountain.

The CNDDB report produced a listing of special-status wildlife, plants, and plant communities that are known to occur in the 7.5-minute USGS topographic quadrangles including federal endangered or threatened species, state endangered or threatened species, and species on the California Rare Plant Ranks (CRPR) Lists 1 through 4. Occurrences for the CNDDB database are submitted by individuals (i.e., biologists, agencies, museums, herbaria, etc.) to the CDFW where the occurrence will be documented in the database. However, even if a particular species is *not* shown to occur after consulting the CNDDB database, the species still has the potential to occur in the area if suitable habitat is found within its anticipated range and elevation.

The CNPS is a non-governmental agency that uses a system of organization based upon scientific research to study the rarity of particular species. The CNPS has created four “lists” in an effort to rank plant species in terms of degrees of conservation concern (CNPS 2015b).

As the entire project falls within the WRCMSHCP, the list of covered species was also consulted (County of Riverside 2003a).

Geographic Information System (GIS) data on sensitive biological resources were derived and consulted from the following sources:

- CDFW CNDDB (CDFW 2015);
- U.S. Fish and Wildlife Service (USFWS) Carlsbad Fish and Wildlife Office Species Occurrence Database (CFWO 2015a);
- USFWS Critical Habitat Portal (USFWS 2015); and
- Riverside County Transportation and Land Management Agency (RTLA) County Wide Geographical Information Systems Data Layers (RTLA 2015).

Based on the review of these sources, a list of potentially occurring special-status plants and animals and sensitive plant communities was prepared for the project and is described in

Sections 2.2 and 2.3. Plant and animal taxa were considered to be special-status species if they were classified as one or more of the following:

- Officially listed by California or the federal government as endangered, threatened, or rare;
- A candidate for state or federal listing as endangered, threatened, or rare;
- Taxa listed in the CNPS Online Inventory of Rare and Endangered Plants of California;
- Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA Guidelines; and
- Taxa that are planning species under the WRCMSHCP subunits that occur within the project and/or have applicable survey areas and methodology per the WRCMSHCP.

Portions of several of the additional proposed staging areas are located within the survey areas currently addressed in the VIG Phase 2 Project and ASP Biological Technical Reports (BTRs). Surveys in support of these BTRs occurred 2009 through 2015 (AMEC 2015, AECOM 2014). Focused survey results (reports and GIS), in support of the ASP and VIG Phase 2 Project were also reviewed as part of the literature and GIS data search (SCE 2015a, AECOM 2015a, AECOM 2015b).

2.2 Vegetation Community Mapping

Plant community types (subset of species habitats) were assessed using the CNPS/CDFW Protocol for Combined Vegetation Rapid Assessment (CNPS 2015c). Field maps were created prior to field visits that depicted the aerial view of each proposed staging area. Plant community types are discussed and defined in Section 3.2 of this report.

All potential riparian/wetland areas detected on the aerial photographs were physically visited to assess plant community type when accessible. Areas that were not accessible were assessed from a distance using binoculars. Upland areas within the project were surveyed physically. During the field surveys, an assessment was made as to the suitability for the presence of sensitive species within the plant communities.

Plant community mapping occurred in two stages. Prior to fieldwork, draft plant community polygons were assessed based upon aerial imagery and a review of the prior SCE reports. When this draft delineation of the plant communities was complete, the polygons were ground-truthed and verified in the field. Previous assessments of the area described the plant communities using Holland (1986) and the WRCMSHCP (County of Riverside 2003b). The previous assessments did not include the use of the Manual for California Vegetation (MCV) (Sawyer et al. 2009), which is the current preferred reference for vegetation mapping/analysis under SCE data collection methods. Therefore, in addition to ground-truthing, the field assessment's primary purpose was to conduct a Rapid Assessment of each area to determine the MCV alliance for each plant community. The MCV provides a cross-reference to older vegetation classification names (such as Holland's); therefore, the field determination using the Rapid Assessment was cross referenced with previous naming conventions, including those used to describe the areas in previous project reports.

The minimum mapping unit for non-sensitive vegetation communities is one acre. Sensitive vegetation communities and/or habitat features (i.e., vernal pools, wet meadows) were individually

mapped at a scale appropriate to determine avoidance/minimization and management of that resource.

2.3 Sensitive Plant and Wildlife Potential for Occurrence

The sensitive plant and wildlife species that have the potential to occur in and near the project were tabulated. Appendix A contains the table of sensitive plant species and Appendix B contains the table of sensitive wildlife species. These two tables list the sensitive plant and wildlife species results from the literature and GIS data consulted (refer back to Section 2.1). For both tables, research on each species was performed and their preferred habitat was described in the table. From these preferred habitat descriptions, the table also includes the specific plant communities evaluated in this report that have the potential to support each species. These plant communities correspond to descriptions provided in Section 3.1.

In both tables in Appendices A and B, each species was ranked for their mapped potential for occurrence within the project based upon the plant communities within the study area, field survey notes and observations, and from photographs. The potential for occurrence ranking criteria are as follows:

Occurs – The species and/or conclusive sign was observed on-site during the survey.

Does Not Occur – This species is not expected to occur in the proposed project area. Suitable habitat was not observed in the project area during the survey. The project area is outside of the currently known range of the species.

Likely – This species is expected to occur in the proposed project areas based on presence of suitable habitat, and/or based on professional expertise specific to the site or species, and nearby, recent (in the last decade) recorded occurrences for the species.

Unlikely – This species may have been recorded in the project vicinity, but the project is on the periphery of the species range, or there are older records (greater than 10 years) on/near the project site, but there is currently marginal suitable habitat on-site (habitat is highly disturbed, degraded, or limited).

2.4 Field Survey Methodology

The project received fairly comprehensive field survey composed of a pedestrian assessment. Areas that were not accessible (such as flood control channels) were assessed from an adjacent area using binoculars to document as many species as possible. The surveys were intended to assess habitat suitability for each of the sensitive plant and wildlife species with the potential to occur in the vicinity of the proposed staging areas as well as to determine the vegetation community within each proposed staging yard. The habitat suitability surveys did not constitute a protocol-level presence/absence survey; however, if a sensitive species was observed during the field effort, its presence was recorded as an incidental observation. Species were either observed directly (physical sightings, tracks, or scats) or indirectly (calls and vocalizations). Data were collected using hand-held global positioning system (GPS) units, photographs, and aerial field maps. A plant and wildlife compendium is contained in Appendix C. Locations of incidental sensitive species observations were collected with GPS units during the field effort and are included in Appendix D.

The September 2015 habitat and resource assessment of the additional proposed staging areas was generally performed outside of the peak blooming season for most early spring and summer

annual plant species; therefore, identification was limited. In addition, due to the reconnaissance level effort of the surveys, it is understood that more plant and wildlife species than detected could use the proposed staging areas.

3.0 SURVEY RESULTS AND EXISTING CONDITIONS

On September 15 and 16, 2015, Kidd Biologists Nina Kidd and Crysta Dickson performed an overview-level assessment of biological resources along the project (i.e., additional proposed staging areas). The field surveys were performed to confirm the anticipated potential for biological resources within the proposed staging areas and their 500-foot buffers (i.e., project).

Table 3-1 below summarizes the environmental conditions recorded for the survey.

Table 3-1. Environmental Conditions

Date	Time (Survey Duration)	Surveyors	Weather (°F)
9/15/2015	0700–1100	CD, NK	66–69°F, 100% cloud cover with rain showers, 0–1 mph
9/16/2015	0900–1400	CD, NK	66–77°F, 50% cloud cover, 0–1 mph

°F = degrees Fahrenheit; mph = miles per hour
Surveyors: Crysta Dickson (CD) and Nina Kidd (NK)

3.1 Physical Environment

3.1.1 Climate

The proposed staging areas are located within a Mediterranean climate region consisting of warm, dry summers and mild, wet winters. In summer, temperatures often reach 100 degrees Fahrenheit (ºF) and winter temperatures fall into the 30s, with an occasional freeze. Average annual temperature ranges are fairly moderate for the area, ranging from 49.3º F to 79.5º F.

The Elsinore, California Station (No. 042805) is the closest weather station to the project site with reliable monthly rainfall totals for the duration of the Project (i.e., no missing days during this period). Rainy season (September through May) precipitation data for the duration of biological studies are provided in Table 3-2 (Western Regional Climate Center 2015). Average total precipitation for the area is approximately 6.74 inches per year.

Table 3-2. Monthly Precipitation (Inches)

Rain Season	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Total
2014/2015	0.45	0	0.21	3.65	0.55	0.37	0.44	0.11	0.96	6.74

3.1.2 Topography

The elevation of the various survey areas investigated ranged from approximately 1,242 feet to 1,675 feet amsl. Table 3-3 provides a general description of the proposed staging area topography.

Table 3-3. Staging Area Topography

Project Area	Summary of Topography
Staging Area VIG 10	The proposed staging area is relatively flat and northwest-trending. Elevations in this area range from 1,440 to more than 1,460 feet amsl.
Staging Area VIG 11	The proposed staging area is located in a rural residential area at the base of the Gavilan Hills. Elevations in this area range from 1,440 to more than 1,675 feet amsl.
Staging Area VIG 12	The proposed staging area is relatively flat and northeast-trending. Elevations in this area range from 1,400 to more than 1,440 feet amsl.
Staging Area VIG 13	The proposed staging area is located within developed portions of Lake Elsinore and the topography is relatively flat. Elevations in this area range from 1,274 to more than 1,280 feet amsl.
Staging Area VIG 14	The proposed staging area is located within developed portions of Lake Elsinore and the topography is relatively flat. Elevations in this area range from 1,274 to more than 1,280 feet amsl.
Staging Area ASP 8	The proposed staging area is located east of the San Jacinto River, within developed portions of Lake Elsinore. The topography of the site is relatively flat. Elevations in this area range from 1,242 to more than 1,270 feet amsl.

3.1.3 Hydrology

The proposed staging yards overlay several watershed units as defined by the Regional Water Quality Control Board Region 8 (RWQCB-R8) and RWQCB-R9; these are shown in Table 3-4 along with their unit codes (RWQCB-R8 1994, RWQCB-R9 1994):

Table 3-4. Additional Proposed Staging Area Watershed Units

Project Area	Hydrologic Unit	Hydrologic Area	Hydrologic Subarea(s)
Staging Area VIG 10	San Jacinto River Valley Hydrologic Unit (802.0)	Perris Hydrologic Area (802.10)	Perris Valley Hydrologic Subarea (802.11)
Staging Area VIG 11	Santa Ana River Hydrologic Unit (801.0)	Lake Mathews Hydrologic Area (801.30)	Terra Cotta Hydrologic Subarea
Staging Area VIG 12	Santa Ana River Hydrologic Unit (801.0)	Lake Mathews Hydrologic Area (801.30)	Terra Cotta Hydrologic Subarea
Staging Area VIG 13	Santa Ana River Hydrologic Unit (801.0)	Lake Mathews Hydrologic Area (801.30)	Terra Cotta Hydrologic Subarea
Staging Area VIG 14	Santa Ana River Hydrologic Unit (801.0)	Lake Mathews Hydrologic Area (801.30)	Terra Cotta Hydrologic Subarea
Staging Area ASP 8	San Jacinto River Valley Hydrologic Unit (802.0)	Elsinore Valley Hydrologic Area (802.30)	Elsinore Hydrologic Subarea (802.31)

3.1.4 Soils

The WRCMSHCP has identified that sensitive plant species are associated with particular soil types. Some of these soil types are required for Narrow/Endemic and Criteria Area plants species growth and survival, and are considered a "sensitive" soil according to the WRCMSHCP. These sensitive soil types include Altamont clay, Altamont cobbly clay, Auld clay, Auld cobbly clay, Bosanko clay, Clay Pits, Domino silt loam, Porterville clay, Traver fine sandy loam, Traver loamy fine sand, and Willows silty clay (County of Riverside 2003a).

Clay soils within the WRCMSHCP included the Bosanko, Auld, Altamont, and Porterville series. In addition, areas from which clay had been mined in the Alberhill area were included. Within the Plan Area, clay soils support several sensitive plant species, they include Munz's onion (*Allium munzii*), thread-leaved brodiaea (*Brodiaea filifolia*), and San Diego button celery (*Eryngium aristulatum* var. *parishii*). Other sensitive plant species occurring on clay soils include long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), small-flowered morning glory (*Convolvulus simulans*), many-stemmed dudleya (*Dudleya multicaulis*), Palmer's grapplinghook (*Harpagonella palmeri*), and small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*).

The Traver-Domino-Willows association includes saline-alkali soils largely located along floodplain areas of the San Jacinto River (including the inlet to Lake Elsinore) and Salt Creek within the WRCMSHCP. Sensitive plants supported by the Traver-Domino-Willows soil association include San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), spreading navarretia (*Navarretia fossalis*), Parish's brittlescale (*Atriplex parishii*), Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), and vernal barley (*Hordeum intercedens*).

One additional WRCMSHCP layer available through the RCTLA County Wide Geographical Information Systems Data Layers (RTLA 2015) is hydric soil. Hydric soils are formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

3.1.4.1 Staging Area VIG 10

Staging area VIG 10 is composed of the following soil types: Exeter sandy loam, Greenfield sandy loam, Hanford coarse sandy loam, and Ramona sandy loam (NRCS 2015b).

Hanford coarse sandy loam and Ramona sandy loam are considered hydric soils (RTLA 2015).

3.1.4.2 Staging Area VIG 11

Staging area VIG 11 is composed of the following soil types: Arbuckle gravelly loam, Cortina cobbly loamy sand, Lodo rocky loam, Vista coarse sandy loam, and Ysidora gravelly very fine sandy loam (NRCS 2015b).

Cortina cobbly loamy sand and Vista coarse sandy loam are considered hydric soils (RTLA 2015).

3.1.4.3 Staging Area VIG 12

Staging area VIG 12 is composed of the following soil types: Arbuckle gravelly loam, Cortina cobbly loamy sand, Lodo rocky loam, Vallecitos loam, and Ysidora gravelly very fine sandy loam (NRCS 2015b).

Cortina cobbly loamy sand is considered a hydric soil (RTLA 2015).

3.1.4.4 Staging Area VIG 13

Staging area VIG 13 is composed of the following soil types: Arbuckle gravelly loam, Garretson gravelly very fine sandy loam, and Garretson very fine sandy loam (NRCS 2015b).

Staging area VIG 13 does not contain any sensitive or hydric soils.

3.1.4.5 Staging Area VIG 14

Staging area VIG 14 is composed of the following soil types: Arbuckle gravelly loam, Garretson gravelly very fine sandy loam, Garretson very fine sandy loam, Lodo rocky loam, Pachappa fine sandy loam, and Traver fine sandy loam (NRCS 2015b).

Traver fine sandy loam is considered a hydric and sensitive soil (RTLA 2015).

3.1.4.6 Staging Area ASP 8

Staging area ASP 8 is composed of the following soil types: Cortina cobbly loamy sand, Grangeville loamy fine sand, Greenfield sandy loam, Hanford coarse sandy loam, Pachappa fine sandy loam, Ramona sandy loam, Traver loamy fine sand, and Waukena loamy fine sand (NRCS 2015b).

Cortina cobbly loamy sand, Hanford coarse sandy loam, Ramona sandy loam, and Waukena loamy fine sand are considered hydric soils. Traver loamy fine sand is considered a hydric and sensitive soil (RTLA 2015, County of Riverside 2003a).

3.2 Plant Community Types

The plant communities identified within the additional proposed staging areas are described below and are mapped in Appendix D. Characterization of plant communities follows the WRCMSHCP (County of Riverside 2003b). The WRCMSHCP plant communities are based on the plant communities presented in the *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986). Holland (1986) was used to supplement plant community descriptions when a clear description was not provided within the WRCMSHCP. Also provided in the descriptions are Alliances described by the MCV (Sawyer et al. 2009) based on the Rapid Assessments conducted in the field. Included in the description is the CDFW California Natural Community Code, a unique 7-digit code used as part of a nationally standardized coding system. When a vegetation community is not described in the MCV, only the Holland or WRCMSHCP description is used and noted.

In addition to the WRCMSHCP, any sensitive natural community mapped by the CNDDB for any of the proposed staging areas was included in the list of plant communities having the potential to occur during the biological resources field and data collection effort.

3.2.1 Description of Plant Community Types

3.2.1.1 Southern Willow Scrub (SWS)

Southern willow scrub (SWS) is dominated by shrub structure rather than a mature tree canopy. The willows (*Salix* sp.) in this community are young (roughly 1 year to 10 years old) and create

a middle layer within riparian drainages that are difficult to walk through and are highly diverse in structure. This community was mapped within the 500-foot buffers of proposed staging area VIG 12.

Within proposed staging area VIG 12, this community is located within the 500-foot buffer along the northwestern boundary in a roadside drainage and continues north of Highway 79. This community was dominated by arroyo willow (*Salix lasiolepis*) with ornamental pine (*Pinus* cf. *allepa*) trees scattered throughout. Under Sawyer et al. (2009), this community is described as *Salix lasiolepis* Shrubland (Arroyo willow thicket) Alliance (61.201.00).

Southern willow scrub is also found in two small areas of proposed staging area VIG 14 500-foot buffer. The northwestern most area was not accessible, therefore the assessment was conducted from a distance and the accuracy of the assessment cannot be verified. The smaller section immediately northwest of the staging area boundary is comprised of a few scattered red and arroyo willows (Salix laevigata), mulefat and Serenana saltbush (*Atriplex serenana* var. *serenana*). There is also a patch of smooth tarplant within this area. Under Sawyer et al. (2009) this community is classified as *Salix laevigata* Woodland Alliance (Red willow thicket)(61.205.00).

3.2.1.2 Mulefat Scrub (MS)

Mulefat scrub (MS) is dominated by mulefat (*Baccharis salicifolia*) but also may include willows (*Salix* spp.), sedges (*Carex* spp.) and stinging nettle (*Urtica dioica*) (Holland, 1986; Sawyer and Keeler-Wolf 1995). This plant community was documented as occurring within the 500-foot buffer of proposed staging area ASP 8. Within the study area, this community can be characterized by a monotypic stand of mulefat with very few emergent willows and tamarisk (*Tamarix* sp.). Approximately 1.2 acres of this habitat occur within proposed staging area ASP 8. The MCV describes this habitat as Mulefat thicket (*Baccharis salicifolia* Shrubland Alliance) (63.510.00).

3.2.1.3 Tamarisk Scrub (TS)

Within proposed staging area ASP 8, tamarisk scrub (TS) is located along the western boundary in a riprap stream channel that outlets into Lake Elsinore. This community was dominated by tamarisk (*Tamarix* sp.) with associated species that included arroyo willow and mulefat. Under Sawyer et al. (2009) this community is described as *Tamarix* sp. Shrubland Semi-Natural Alliance (63.810.00).

3.2.1.4 Non-native Grassland (NNG)

Non-native grassland (NNG) is composed of introduced annual grass species with variable presence of other non-native and native herbaceous species. This plant community was mapped as the dominant plant community within proposed staging area ASP 8 (approximately 24 acres). The dominant plant species found within this community included Russian thistle (*Salsola tragus*) with subdominant species of red-stemmed filaree (*Erodium cicutarium*) and long-beak filaree (*E. botrys*) observed. Also evident was an older, but significant understory of grasses (*Bromus* sp.). Associated plant species included pepperweed (*Lepidium* sp.), rattlesnake sandmat (*Euphorbia albomarginata*), doveweed (*Eremocarpus setigerus*), vinegar weed (*Trichostemma lanceolatum*), one tamarisk, cheeseweed (*Malva parviflora*), salt heliotrope (*Heliotropium curassavicum*), common sunflower (*Helianthus annuus*), western ragweed (*Ambrosia psilostachya*) and one small patch of giant reed (*Arundo donax*).

Additionally, within the site, and especially along the western edge of the 500-foot buffer, the CRPR List 1B.1 and WRCMSHCP Criteria Area Plant Species (CAPS) smooth tarplant was observed. Under Sawyer et al. (2009) this community is described as *Bromus rubens*-Mixed Herbs Alliance (42.024.02).

The western half of proposed staging area VIG 14 (approximately 8.9 acres) is also composed of non-native grassland; however, the dominant plants in this area are composed of mustard (*Brassica nigra*, and *Sisymbrium* sp.) with a few scattered Serenana saltbush)and five-hooked bassia (*Bassia hyssopifolia*). This area is heavily disturbed and regularly disked and mostly void of vegetation. Under Sawyer et al. (2009) this community is described as Upland Mustards (*Brassica nigra* and other mustards Herbaceous Semi-Natural Alliance) (42.011.00). Portions of proposed staging areas VIG 11, 12, and 13 were also mapped as Upland Mustards (*Brassica nigra* and other mustards Herbaceous Semi-Natural Alliance).

3.2.1.5 Riversidean Sage Scrub (RSS)

Riversidean Sage Scrub (RSS) was mapped within proposed staging areas VIG 11, VIG 12 and within the ASP 8 500-foot buffer zone along the river terrace. This community comprises approximately 37 acres within proposed staging area VIG 11, 13.00 acres in proposed staging area VIG 12, and 0.7 acre within proposed staging area ASP 8. This plant community is described as being dominated by a characteristic suite of low-statured, aromatic, drought-deciduous shrubs and subshrub species. Composition varies substantially depending on physical circumstances and the successional status of the Vegetation Community (County of Riverside 2003b).

Within proposed staging area VIG 11, the most common plant species is brittlebush (*Encelia farinosa*) with scattered California buckwheat (*Eriogonum fasciculatum*), wishbone bush (*Mirabilis laevis*), and valley cholla (*Cylindrpuntia parryi*).

Within proposed staging area VIG 12, dominant plant species included brittlebush, Palmer's goldenbush (*Ericameria palmeri*) and Russian thistle. Associated plant species included California buckwheat, Turkish rugging (*Chorizanthe staticoides*), common sunflower, tocalote (*Centaurea melitensis*), and black mustard. Under Sawyer et al. (2009) the vegetation in proposed staging areas VIG 11 and VIG 12 is described as brittlebush scrub (*Encelia farinosa* Shrubland Alliance) (33.030.00).

Within proposed staging area ASP 8, the small area along the upper terrace of the river is dominated by brittlebush, California buckwheat, and Palmer's goldenbush. It should be noted that this area could also fall under Palmer's goldenbush scrub (38.130.00); however, this alliance is poorly described and no membership rules are available for the alliance.

A disturbed Riversidean Sage Scrub (DRSS) qualifier was placed on proposed staging area VIG 12 and ASP 8 communities based on evidence of mechanical disturbances. There was evidence of disturbance that has left a sparse, scattered cover of shrubs or introduced a cover of non-native species that have become established as part of the community. These sites showed evidence of grading, supported a sparse vegetation cover, and were codominated by a ruderal species (Russian thistle).

Under California regulations and policies, coastal sage scrub is considered a sensitive habitat. Coastal sage scrub is listed in the CNDDB with a global ranking of G3 (21 to 80 Element Occurrences [EOs] or 3,000 to 10,000 individuals or 10,000-50,000 acres) and a State Ranking

of S3.2 (threatened). Several sensitive wildlife species are dependent upon coastal sage scrub including coastal California gnatcatcher (*Polioptila californica*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), coast horned lizard (*Phrynosoma blainvillei*), and Belding's orange-throated whiptail (*Aspidoscelis hyperythra*), as well as many sensitive plant species. It should be noted that RSS is monitored by the WRCMSHCP Rough Step requirements set forth in Section 6.7 of the WRCMSHCP, for habitat losses and gains associated with public and private development projects.

3.2.1.6 Cismontane Alkali Marsh (CAM)

Typical cismontane alkali marsh (CAM) species include yerba mansa (*Anemopsis californica*), saltgrass (*Distichlis spicata*), alkali-heath (*Frankenia salina*), cattails (*Typha* spp.), common pickleweed (*Salicornia virginica*), rushes (*Juncus* spp.), marsh flea-bane (*Pluchea odorata*), and sedges (Holland 1986).

This plant community was mapped within proposed staging area ASP 8 and is specifically associated with three distinct ponded features (one located within the site and two located within the buffer zone) that were observed. These features were ponded with water at the time of the habitat assessment and a review of aerial maps indicates that these features were present in years past. Dominant plant species observed within the feature located in the proposed staging area included Russian thistle and alkali weed (*Cressa truxillensis*). Associated species included woolly marbles (*Psilocarphus* sp.), pigweed (*Amaranthus albus*), popcorn flower (*Cryptantha* sp.), vinegar weed, puncture vine (*Tribulus terrestris*), prostrate knotweed (*Polygonum aviculare*), pygmyweed (*Crassula* sp.) and brome. Additionally, several CRPR List 1B.1 smooth tarplant and CRPR List 4.2 paniculate tarplant (*Deinandra paniculata*) were observed throughout this feature. Little mousetail (*Myosurus minimus* ssp. *apus*), a CRPR List 3.1 species, was observed in close proximity to this site during previous surveys in 2009 (City of Lake Elsinore, 2009). The two features located within the 500-foot buffer zone were dominated by common purslane (*Portulaca oleracea*), prostrate knotweed, and cocklebur (*Xanthium strumarium*), with the westernmost pond also supporting a large population of smooth tarplant. Alkali weed was observed in these areas; however, their abundance was likely impacted by the presence of purslane.

Proposed staging area VIG 14 also contains an alkali marsh. This habitat covers approximately 4.6 acres in the northeastern half of the proposed staging area. The community here is dominated by five-hook bassia, Serenana saltbush, and alkali mallow (*Malvella leprosa*) with an understory of salt grass, alkali weed, and purslane. Under Sawyer et al. (2009) these communities are described as Alkali weed-Salt grass playas and sinks (*Cressa truxillensis-Distichlis spicata* Herbaceous Alliance) (46.100.00). Associated with this community is a population of smooth tarplant.

A linear portion of proposed staging area VIG 14 is dominated by salt grass with a large component of annual sunflower. Other plants in this habitat included common purslane and some sparse cocklebur. The habitat is similar to the Alkali-weed salt grass playa; however, there was a distinctive lack or low cover of alkali weed and no shrub layer. Due to these differences, this 2.5-acre area is classified as a Salt grass flat (*Distichlis spicata* Alliance) (41.200.00).

A disturbed qualifier was placed on portions of proposed staging area ASP 8 and VIG 14 communities based on evidence of mechanical disturbances. These sites showed evidence of

disking and off-road vehicle use and had a strong dominance by non-native bassia and purslane.

The USFWS Wetland Inventory (1996 national list) recognizes *Cressa truxillensis* and *Distichlis spicata* as facultative wetland (FACW) plants. Alkali weed-Salt grass playa habitat has a global ranking of G4 (some threat or narrow habitat) and a State Ranking of S4 (apparently secure, but factors exist to cause concern; i.e., narrow habitat). The soils associated with these habitats are known to be favorable for certain sensitive plant species and vernal pools (and their associated plant and wildlife species). Smooth tarplant was observed on both of the staging areas containing these alkali habitats. Other sensitive plant species that could occur within these habitats include little mousetail, San Jacinto Valley crownscale, Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) and spreading navarretia. Sensitive wildlife associated with these habitats include fairy shrimp (*Branchinecta lynchi, Streptocephalus wootoni*).

3.2.1.7 Coastal and Valley Freshwater Marsh

Coastal and valley freshwater marsh typically is dominated by perennial monocots up to 2 meters high. This habitat type includes cattails (*Typha latifolia*), bulrush (*Schoenoplectus* spp.), sedges (*Carex* spp.), spike rushes (*Eleocharis* spp.), flatsedges (*Cyperus* spp.), smartweed (*Polygonum* spp.), watercress (*Rorippa* spp.) and yerba mansa. Rooted aquatic plant species with floating stems and leaves also may be present, such as pennywort (*Hydrocotyle* spp.), water smartweed (*Polygonum amphibium*), pondweeds (*Potamogeton* spp.), and water-parsley (*Oenanthe sarmentosa*) (Holland and Keil 1995).

Three areas within proposed staging area VIG 14 contain freshwater marsh habitat. The first area is within the central portion of the staging area at the terminus of Birch Street. This area is dominated by bulrush (*Schoenoplectus acutus*), unidentified sedges, cocklebur, common sunflower, and curly dock (*Rumex crispus*). Areas of open water are also found within this area. The upper margins of the marsh were found to have salt grass and alkali weed where it transitions into alkali playa. Under the MCV, this area is classified as *Schoenoplectus acutus* Alliance (Hardstem bulrush marsh) (52.122.00).

The second and third areas are characterized by dense stands of cattails. The smaller area is located at the intersection of Third Street and Pasadena Street at the north end of the staging area. The larger is part of Temescal Wash that runs along the western boundary of the staging area. This portion of the wash has been channelized and stabilized for flood control. At the time of the assessment, the bottom of the channel had dense stands of cattails with some areas of open water and emerging willows and mulefat. Access to this area was not possible; therefore, the assessment was done from the fence line. It is assumed that this channel is cleared of vegetation annually for flood control purposes. These two areas are classified as *Typha (angustifolia, domingensis, latifolia*) Herbaceous Alliance (Cattail marsh) (52.050.00) under the MCV.

3.2.1.8 Developed/Disturbed (DDL)

This community includes homes, businesses, parks, cemeteries, and similar developed lands, including their associated landscape plantings. It may also include roads and lands that have been highly disturbed by past or current human activity. This classification also includes Field/Croplands as well as ornamental woodlands (described below). This community is the dominant habitat type within the project study area (223 acres).

Field/Croplands (FC)

Croplands are described as areas occupied by dairies and livestock feed yards or areas that have been tilled and used as croplands or groves/orchards (County of Riverside 2003b). Proposed staging area VIG 10 supports this community type in the form of fallow cropland. The site showed evidence of recent disking with very little vegetation present. Only small areas around the outer margins of the site were found to support common purslane, Russian thistle, pigweed, brass buttons (*Cotula coronopifolia*), barley (*Hordeum vulgare*), black mustard, and prostrate knotweed. There are no alliances recognized by Sawyer et al. (2009) which describe this community and there are no suitable alternatives given the species composition at the site. This plant community comprises approximately 67 acres within proposed staging area VIG 10.

Ornamental Woodlands (OW)

Ornamental woodlands (OW) are human-created woodlands using non-native trees and shrubs. Common species of trees found within ornamental woodlands in Southern California include various species of gum tree (*Eucalyptus* spp.) and Peruvian pepper trees (*Schinus molle*) sometimes with an understory of ornamental shrubs. Ornamental woodlands are composed of non-native species that often outcompete native tree species, provide little or no food source for native fauna, and are sometimes even poisonous to wildlife; however, they provide suitable roosting and nesting habitat for a variety of avian species. Proposed staging areas VIG 10 and VIG 12 have ornamental woodlands within the 500-buffer. The area in proposed staging area VIG 10 is composed solely of Eucalyptus. The MCV defines this habitat as a Eucalyptus grove (*Eucalyptus globulus, camaldulensis*) Woodland Semi-Natural Alliance) (79.100.00).

Table 3-5 shows the plant communities within each proposed staging area and 500-foot buffer.

Table 3-5. Plant Communities

Proposed Staging Area (Including 500-foot Buffer)	Holland/MSHCP Community	Manual of California Vegetation Plant Community	Plant Community Acres (Including 500-foot buffer)
ASP 8	CAM – Cismontane Alkali Marsh	*Cressa truxillensis – Distichlis spicata* Alliance (Alkali weed – Salt grass playas and sinks)	0.50
	DCAM – Disturbed Cismontane Alkali Marsh	*Cressa truxillensis – Distichlis spicata* Alliance (Alkali weed – Salt grass playas and sinks)	3.44
	NNG – Non-native Grassland	*Bromus rubens*-mixed herbs	24.07
	TS – Tamarisk Scrub	*Tamarix* spp. Semi-natural Shrubland Stands (Tamarisk thicket)	7.36
	MFS – Mulefat Scrub	*Baccharis salicifolia* Shrubland Alliance (Mulefat thicket)	1.20
	DRSS – Disturbed Riversidean Sage Scrub	*Encelia farinosa* shrubland (Brittlebush scrub)	0.72
	DDL – Residential/Urban/Exotic	N/A	18.27
TOTAL ACREAGE			**55.56**

Table 3-5. Plant Communities

Proposed Staging Area (Including 500-foot Buffer)	Holland/MSHCP Community	Manual of California Vegetation Plant Community	Plant Community Acres (Including 500-foot buffer)
VIG 10	DDL - Residential/Urban/Exotic	Eucalyptus (globulus, camaldulensis) Semi-Natural Woodland Stands	1.93
	FC - Field Croplands	N/A	67.72
TOTAL ACREAGE			**69.65**
VIG 11	RSS - Riversidean Sage Scrub	*Encelia farinosa* shrubland (Brittlebush scrub)	35.26
	DNNG - Disturbed Non-native Grassland	*Brassica nigra* and other mustards Semi-natural Stands(Upland mustards)	13.66
	DRSS - Disturbed Riversidean Sage Scrub	*Encelia farinosa* shrubland (Brittlebush scrub)	1.74
	DDL - Residential/Urban/Exotic	N/A	6.67
TOTAL ACREAGE			**57.33**
VIG 12	DRSS - Disturbed Riversidean Sage Scrub	*Encelia farinosa* shrubland (Brittlebush scrub)	13.00
	SWS - Southern Willow Scrub	*Salix lasiolepis* Shrubland (Arroyo willow thicket)	1.43
	DNNG - Disturbed Non-native Grassland	*Brassica nigra* and other mustards (Upland mustards) Semi-natural Stands	5.51
	DDL - Residential/Urban/Exotic	N/A	45.21
TOTAL ACREAGE			**65.15**
VIG 13	DNNG - Disturbed Non-native Grassland	*Brassica nigra* and other mustards (Upland mustards) Semi-natural Stands	3.37
	DDL - Residential/Urban/Exotic	N/A	40.13
TOTAL ACREAGE			**43.50**
VIG 14	DCAM - Disturbed Cismontane Alkali Marsh	*Cressa truxillensis - Distichlis spicata* Alliance (Alkali weed - Salt grass playas and sinks)	4.58
		Distichlis spicata Alliance (Salt grass flats)	2.52
	FWM - Freshwater Marsh	*Schoenoplectus acutus* Alliance (Hardstem bulrush marsh)	0.50
		Typha (angustifolia, domingensis, latifolia) Herbaceous Alliance (Cattail marsh)	1.96
	SWS - Southern Willow Scrub	*Salix laevigata Woodland Alliance (Red willow thicket)*	0.69
	DFWM - Disturbed Freshwater Marsh	Typha (angustifolia, domingensis, latifolia) Herbaceous Alliance (Cattail marsh)	6.52

Table 3-5. Plant Communities

Proposed Staging Area (Including 500-foot Buffer)	Holland/MSHCP Community	Manual of California Vegetation Plant Community	Plant Community Acres (Including 500-foot buffer)
	DNNG - Disturbed Non-native Grassland	*Brassica nigra* and other mustards Semi-natural Stands(Upland mustards)	8.91
	DDL - Residential/Urban/Exotic	N/A	52.02
TOTAL ACREAGE			**77.70**

3.3 Regulated Trees

Both the County of Riverside and the City of Lake Elsinore regulate the removal and trimming of certain trees within their jurisdiction. The County of Riverside, Roadside Tree Ordinance 12.08 and Tree Removal Ordinance 12.24 state that “no one may remove or trim any tree planted in the right-of-way of a county highway without first obtaining a permit” and “no person shall remove any living native tree (30' tall and 12" dbh) on any parcel or property greater than 1/2 acre above 5,000 feet in elevation without a permit” (respectively). No trees meeting these requirements are expected to be removed as part of this proposed project. The Lake Elsinore Palm Tree Preservation Program (City Ordinance No. 1044) requires that “All residents who wish to remove a palm tree that exceeds five feet in height measured from the ground at the base of the trunk to the base of the crown must obtain a palm tree removal permit prior to removal of the tree”. No palm trees meeting this criterion were observed within any of the proposed Lake Elsinore staging areas.

3.4 Sensitive Plants and Wildlife

This section contains discussions of the occurrence of sensitive plant and wildlife species within each of the additional proposed staging areas. Sensitive species may also be referred to as special-status species due to their “status” and recognition by regulatory or institutional entities with authority in determining rarity, endangerment, or declining populations.

A total of 53 sensitive plant species have been documented within the vicinity of the project. Of those 53 sensitive plant species, nine species had either a federal and/or state listing as an endangered, threatened or Species of Special Concern (SSC). These nine species have been highlighted within the sensitive plant species table located in Appendix A.

A total of 56 sensitive wildlife species were documented within the vicinity of the project. This total includes six invertebrate species, two fish species, four amphibian species, 10 reptile species, 21 bird species, and 13 mammal species. Of those 56 sensitive wildlife species documented, 12 species had either a federal, state or combination of both listings as endangered, threatened, and/or SSC. These 12 species have been highlighted within the sensitive wildlife species table located in Appendix B.

3.4.1 Results for Staging Area ASP 8

3.4.1.1 Sensitive Plants with the Potential to Occur

Sixteen sensitive plant species from the CNDDB were determined to have at least some potential to occur or were observed within proposed staging area ASP 8: paniculate tarplant (CRPR 4.2), smooth tarplant (CRPR 1B.1, CAS), San Diego ambrosia (*Ambrosia pumila*) (FE, CRPR 1B.1, NEPS), Parish's brittlescale (CRPR 1B.1, CAS), San Jacinto Valley crownscale (CRPR 1B.1, CAS), Davidson's saltscale (CRPR 1B.2, CAS), Parry's spineflower (*Chorizanthe parryi var. parryi*) (CRPR 1B.1), slender-horned spineflower (*Dodecahema leptoceras*) (FE, SE, CRPR 1B.1, NEPS), Coulter's goldfields (CRPR 1B.2, CAS), little mousetail (CRPR 3.1, CAS), spreading navarretia (FT, CRPR 1B.1, NEPS), prostrate vernal pool navarretia (*Navarretia prostrata*) (CRPR 1B.1, CAS), California Orcutt grass (*Orcuttia californica*) (FE, SE, CRPR 1B.1, NEPS), San Bernardino aster *(Symphyotrichum defoliatum*) (CRPR 1B.2), white rabbit tobacco (*Pseudognaphalium leucocephalum*) (CRPR 2B.2) and Wright's trichocoronis (*Trichocoronis wrightii var. wrightii*) (CRPR 2B.1, NEPS) (CDFW 2015; CNPS 2015a).

The mesic alkali soils on the site are suitable for all of these species. Most of these species are associated with vernal pools. The seasonal depressions found within the staging area as well as the 500-foot buffer give this site a high potential to support these species.

3.4.1.2 Sensitive Plant Species Incidental Observations

Two sensitive plant species were observed during the site assessment proposed staging area ASP 8: Smooth tarplant and paniculate tarplant. The locations are illustrated in Appendix D, Figure D-6. Additionally, little mousetail was observed in close proximity to this site during previous surveys in 2009 (City of Lake Elsinore 2009).

3.4.1.3 Sensitive Wildlife Species with the Potential to Occur

Seventeen wildlife species were found to have either some potential to occur or were present within proposed staging area ASP 8.

<u>Invertebrates</u>

Two sensitive invertebrate species, vernal pool fairy shrimp (*Branchinecta lynchi*) (FT) and senile tiger beetle (*Cicindela senilis frosti*) (S1 [Critically Imperiled, G2 [Imperiled] T1 [Subspecies is critically imperiled]), have the potential to occur. The vernal pool fairy shrimp has the potential to occur in the seasonally ponded features observed within proposed staging area ASP 8. The senile tiger beetle has the potential to occur in the marsh habitat observed within proposed staging area ASP 8.

<u>Amphibians</u>

Only one sensitive amphibian species, western spadefoot toad (*Spea hammondii* [SSC]), has the potential to occur in the non-native grassland and Riversidean sage scrub plant communities within proposed staging area ASP 8 (Appendix B).

Reptiles

Proposed staging area ASP 8 has the potential to support one sensitive reptile species: coast horned lizard (*Phrynosoma coronatum* [SSC/FSS]). An additional four species have the potential to occur within the 500-foot buffer: Belding's orange-throated whiptail [SSC]), coastal whiptail (*A. tigris stejnergeri*), western pond turtle (*Emys marmorata*) (SSC), and two-striped garter snake (*Thamnophis hammondii*) (SSC). The western pond turtle and two-striped garter snake have the potential to occur near the lake margins of Lake Elsinore. There is potential for the coast horned lizard to occur in proposed staging area ASP 8 due to the presence of suitable soils and prey (harvester ants). The whiptails could occur within the sage scrub habitat within the 500-foot buffer (Appendix B).

Birds

Proposed staging area ASP 8 has the potential to support two sensitive avian species: California horned lark (*Eremophila alpestris actia*) and burrowing owl (*Athene cunicularia*) (SSC, BCC). The horned lark nests in open fields and is tolerant of disturbance. Suitable burrows for the burrowing owl occur within the 500-foot buffer; however, no sign of burrowing owl use was observed. Most of the burrowing owl sightings in the immediate area are of wintering owls and it is expected that any burrowing owls using this site would be migrants and not resident breeders.

An additional six species have the potential to use the riparian areas within the 500-foot buffer of the site. These are Cooper's hawk (*Accipiter cooperii*), tricolored blackbird (*Agelaius tricolor*) (SSC, BCC), bald eagle (*Haliaeetus leucocephalus*) (FD, SE, FP) (over winter only), yellow-breasted chat (*Icteria virens*) (SSC), white-faced Ibis (*Plegadis chihi*), and least Bell's vireo (*Vireo bellii pusillus*) (FE, SE, BCC) (Appendix B).

The bald eagle has the potential to be seen flying over or foraging over proposed staging area ASP 8 due to the presence of Lake Elsinore. However, this species is not expected to nest on the site or adjacent to the site due to the lack of suitable habitat.

Mammals

Only one sensitive mammal species has a potential to use proposed staging area ASP 8: Yuma myotis (*Myotis yumanaensis*) (Appendix B). There is a possibility of this species roosting in the adjacent riparian habitat.

3.4.1.4 Sensitive Wildlife Species Incidental Observations

A Cooper's hawk was observed foraging to the northeast of proposed staging area ASP 8 during the assessment (Appendix D, Figure D-6).

3.4.2 Results for Staging Area VIG 10

3.4.2.1 Sensitive Plants with the Potential to Occur

No sensitive plant species have a potential to occur on proposed staging area VIG 10. The regular agricultural activity on this parcel prevents sensitive species from establishing on this site.

3.4.2.2 Sensitive Plant Species Incidental Observations

No sensitive plant species were detected during the site assessment.

3.4.2.3 Sensitive Wildlife Species with the Potential to Occur

Three wildlife species were found to have either a potential of occurrence within proposed staging area VIG 10 or within its 500-foot buffer. All three species are birds: Cooper's hawk, burrowing owl and golden eagle (*Aquila chrysaetos*) (FP, BCC).

The golden eagle forages over a wide territory and vegetation communities, including mixed chaparral, Riversidean sage scrub, and non-native grassland plant communities. Golden eagles can breed in tall trees in woodlands (specifically coast live-oak woodland – riparian and southern sycamore riparian forest plant communities); however, in southern California it is most commonly found nesting on cliff faces. The closest known breeding pair of golden eagles nested on Double Butte, approximately 1.5 miles to the east of proposed staging area VIG 10. This is a historic nest location and the territory has been extinct for over a decade. Due to the increase in development and human activity in this region, it is very unlikely golden eagles will return to the Perris Valley for breeding; however, migrant golden eagles are known to spend time in the area during the spring and fall migrations as well as over-wintering in the region. Therefore, no potential exists for golden eagles to nest within or immediately adjacent to proposed staging area VIG 10, but the site may be used for foraging by non-resident eagles from September through February.

Numerous burrows suitable for the burrowing owl were found along the edges of the proposed staging area as well as within the 500-foot buffer. The burrowing owl is known to occur within this area and there is a potential for the species to use the site for both nesting and foraging. No sign of burrowing owl use was observed; however, the assessment was conducted following a heavy rain storm and sign may have been washed away.

Cooper's hawks utilize a variety of native and ornamental woodlands for nesting and foraging on song birds. The grove of eucalyptus trees within the 500-foot buffer could support a pair of Cooper's hawks.

3.4.2.4 Sensitive Wildlife Species Incidental Observations

No sensitive wildlife species were detected during the site assessment of proposed staging area VIG 10.

3.4.3 Results for Staging Area VIG 11

3.4.3.1 Sensitive Plants with the Potential to Occur

Five sensitive plant species were determined to have a potential of occurrence: Munz's onion (FE, ST, CRPR 1B.1), intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) (CRPR 1B.2), Payson's jewel flower (*Caulanthus simulans*) (CRPR 4.2), Parry's spineflower, and Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii)* (CRPR 4.3) (CDFW 2015; CNPS 2015a) (Appendix A).

Munz's onion most often occurs in clay soils with moisture in grassy opening within shrub habitat (CDFW 2015; CNPS 2015a). The habitat and soils within proposed staging area VIG 11 are not ideal; however, there is a known population approximately 2,000 feet to the north of the site making the potential for this species to occur within the 500-foot buffer fairly high. The mariposa lily, jewel flower, spineflower and peppergrass can be found in sage scrub habitats with rocky or sandy soils, which are present on and around proposed staging area VIG 11 (CNPS 2015a).

3.4.3.2 Sensitive Plant Species Incidental Observations

No sensitive plant species were observed within proposed staging area VIG 11 during the assessment.

3.4.3.3 Sensitive Wildlife Species with the Potential to Occur

Invertebrates

Only one sensitive invertebrate species, Quino checkerspot butterfly (*Euphydryas editha quino* [FE]), has the potential to occur as Riversidean sage scrub plant communities are located within proposed staging area VIG 11. The required host plant *Plantago erecta*, is known to occur in the immediate area (N. Kidd personal observation) and the site provides adequate nectar sources; however, the most recent observations are over 10 years old. This could partly be because few surveys for this species have been conducted since the enactment of the WRCMSHCP.

Amphibians

No sensitive amphibians are expected to occur within proposed staging area VIG 11 or within the 500-foot buffer.

Reptiles

Seven sensitive reptile species have a potential to occur within proposed staging area VIG 11. All of these species are associated with the Riversidean sage scrub plant community that occurs on-site. The seven species are Belding's orange-throated whiptail, coastal whiptail, San Diego banded gecko (*Coleonyx variegatus abbotti*), red-diamond rattlesnake (*Crotalus ruber*) (SSC), San Bernardino ringneck snake (*Diadophis punctatus modestus*), coast horned lizard, and coast patch-nosed snake (*Salvadora hexalepis virgultea*) (SSC) (Appendix B).

Birds

There is habitat present within and adjacent to proposed staging area VIG 11 with the potential to support six sensitive avian species: Cooper's hawk, southern California rufous-crowned sparrow, golden eagle, burrowing owl, loggerhead shrike (*Lanius ludovicianus*) (SSC, BCC), and coastal California gnatcatcher (FT, SSC) (Appendix B).

The rufous-crowned sparrow and gnatcatcher utilize Riversidean sage scrub habitat and are known to occur within the immediate area. Coastal California gnatcatcher has been documented within the Riversidean sage scrub habitat north of the proposed staging area (CFWO 2015a). Suitable burrows for the burrowing owl were found within the staging area. The habitat on-site is not ideal for this species; however there are reported occurrences of burrowing owls using similar habitats in Menifee (personal observation, N. Kidd). The loggerhead shrike is known to use a variety of habitat but prefers agricultural areas and open shrub land. The site provides suitable breeding and foraging habitat for this species.

Suitable nesting habitat for the golden eagle is not found on-site; however, the sage scrub community provides suitable foraging for this species. Cooper's hawks utilize a variety of native and ornamental woodlands for nesting and foraging on songbirds. The grove of eucalyptus trees within the 500-foot buffer could support a pair of Cooper's hawks.

Mammals

The site has the potential to support nine sensitive mammal species. Three of these species are bats: Yuma myotis, western mastiff bat (*Eumops perotis californicus*) (SSC), and pocketed free-tail bat (*Nyctinomops femorosaccus*) (SSC). These bat species are known to roost in rock crevices, which can be found on-site as well as within the 500-foot buffer. The proximity to open water (agricultural ponds as well as Lake Elsinore) makes the site suitable for these species.

An additional six sensitive rodent species have at least some potential to occur on the site: Dulzura pocketmouse (*Chaetodipus californicus femoralis*) (SSC), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) (SSC), Stephens' kangaroo rat (*Dipodomys stephensi*) (FE, ST), San Diego black-tailed Jackrabbit (*Lepus californicus bennettii*) (SSC), San Diego desert woodrat (*Neotoma lepida intermedia*) (SSC), and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) (SSC). The Dulzura pocket mouse, San Diego pocket mouse, and desert woodrat all occur in rocky areas of sage scrub habitat, which is found within proposed staging area VIG 11 as well as within the 500-foot buffer. The Los Angeles pocket mouse prefers sandier areas near drainage features similar to the habitat found within the southern portion of the 500-foot buffer for this site.

The Stephens' kangaroo rat prefers open sage scrub or grasslands with gentle slopes and friable soils. Although the staging area is marginal for this species, areas within the 500-foot buffer could support this species. A focused burrow assessment was not conducted for this species; however, the connectivity of this site to known populations of this species makes the potential for it to occur here possible (CFWO 2015a).

The black-tailed jackrabbit requires large tracts of open sage scrub or grasslands for foraging. One burrow found on the site was sufficient in size for this species; however, the jackrabbit was not observed during the site assessment.

Other notable mammals with the potential to occur on this site include bobcat (*Lynx rufus*), mountain lion (*Puma concolor*) and mule deer (*Odocoileus hemionus*). Although these large mammals likely avoid areas adjacent to development, the fact that this site is connected to a much larger area of open space as part of the Gavilan Hills and Alberhill makes it possible for these species to utilize the area for foraging and possible denning.

3.4.3.4 Sensitive Wildlife Species Incidental Observations

No sensitive wildlife species were detected during the site assessment at proposed staging area VIG 11.

3.4.4 Results for Staging Area VIG 12

3.4.4.1 Sensitive Plants with the Potential to Occur

Two sensitive plant species were determined to have a potential of occurrence in proposed staging area VIG 12: Payson's jewel flower and Parry's spineflower (CDFW 2015; CNPS 2015a) (Appendix B).

Both of these species occur within sandy or rocky areas with sage scrub and are somewhat tolerant of disturbance. Neither species was observed during the assessment, but the site and

most of the adjacent areas are disturbed making the potential for these species to occur low. Absence cannot be verified without a focused survey during the appropriate blooming period.

3.4.4.2 Sensitive Plant Species Incidental Observations

No sensitive plant species were observed in proposed staging area VIG 12 or the 500-foot buffer zone.

3.4.4.3 Sensitive Wildlife Species with the Potential to Occur

Ten wildlife species were found to have a potential of occurrence within proposed staging area VIG 12.

Invertebrates

Only one sensitive invertebrate species, Riverside fairy shrimp, has the potential to occur as there was a seasonal depression found within the northern portion of the staging area. The site was assessed following a heavy rain storm and it is not known how long this feature holds water; however, as a prudent measure, it was assessed as potentially suitable for fairy shrimp.

Amphibians

No sensitive amphibians were determined to have a potential to occur within proposed staging area VIG 12.

Reptiles

Proposed staging area VIG 12 has the potential to support five sensitive reptile species including Belding's orange-throated whiptail, coastal whiptail, northern red-diamond rattle snake, and coast horned lizard, and to a lesser extent coast patch-nosed snake and San Bernardino ring-neck snake (Appendix B). Both orange-throated whiptail and coast horned lizard have been reported in the immediate area of the site.

Birds

One sensitive bird species has the potential to occur within staging area VIG 12 with an additional three potentially occurring within the 500-foot buffer. The horned lark has the potential to nest and forage within the staging area where the flat open habitat is suitable for this species. The adjacent willow riparian scrub habitat could support least Bell's vireo and yellow-breasted chat. The Cooper's hawk could use the nearby ornamental landscaping for both breeding and foraging. It should be noted that least Bell's vireos have been reported using the riparian habitat along Highway 74 within the 500-foot buffer (CFWO 2015a).

Mammals

No sensitive wildlife species are expected to occur within proposed staging area VIG 12.

3.4.4.4 Sensitive Wildlife Species Incidental Observations

No sensitive wildlife species were detected during the site assessment of proposed staging area VIG 12.

3.4.5 Results for Staging Area VIG 13

3.4.5.1 Sensitive Plants with the Potential to Occur

Proposed staging area VIG 13 is disturbed and mostly void of vegetation. The site is regularly cleared and compacted. No sensitive plant species are expected to occur within proposed staging area VIG 13 (Appendix B).

3.4.5.2 Sensitive Plant Species Incidental Observations

No sensitive plants were observed during the site assessment. Although the assessment was conducted outside of the blooming period for many species, the disturbance on the site likely precludes any rare plants from occurring here.

3.4.5.3 Sensitive Wildlife Species with the Potential to Occur

One sensitive species is considered to have a potential to occur within or adjacent to proposed staging area VIG 13: the Cooper's hawk. This raptor could use nearby ornamental landscaping for foraging and nesting.

3.4.5.4 Sensitive Wildlife Species Incidental Observations

No sensitive wildlife species were detected during the site assessment of proposed staging area VIG 13.

3.4.6 Results for Staging Area VIG 14

3.4.6.1 Sensitive Plants with the Potential to Occur

Sixteen sensitive plant species from the CNDDB were determined to have at least some potential to occur or were observed within proposed staging area VIG 14,: paniculate tarplant, smooth tarplant, San Diego ambrosia, Parish's brittlescale, San Jacinto Valley crownscale, Davidson's saltscale, Parry's spineflower, Coulter's goldfields, little mousetail, spreading navarretia, prostrate vernal pool navarretia, slender-horned spineflower, California Orcutt grass, San Bernardino aster, Wright's Trichocoronis, and California screw moss (*Tortula californica*) (CDFW 2015; CNPS 2015a).

The mesic alkali soils on the site are suitable for all of these species (Vegetation Community Maps, Appendix D, Figure D-5. Most of these species are associated with vernal pools. The seasonal depressions found within the staging area as well as the 500-foot buffer gives this site a high potential to support these species; however, previous surveys on this site have resulted in the detection of only one of these species: the smooth tarplant (AECOM 2015a).

3.4.6.2 Sensitive Plant Species Incidental Observations

One sensitive plant species was observed during the site assessment within proposed staging area VIG 14: smooth tarplant. The locations are illustrated in Appendix D, Figure D-10.

3.4.6.3 Sensitive Wildlife Species with the Potential to Occur

Seventeen wildlife species were found to have either some potential to occur or were present within proposed staging area VIG 14.

Invertebrates

Two sensitive invertebrate species, vernal pool fairy shrimp (FT) and senile tiger beetle, have the potential to occur. The vernal pool fairy shrimp has the potential to occur in the seasonally ponded features observed on proposed staging area VIG 14. The senile tiger beetle has the potential to occur in the marsh habitat observed within proposed staging area VIG 14.

Amphibians

Only one sensitive amphibian species, western spadefoot toad, has the potential to occur in the freshwater marsh plant community within proposed staging area VIG 14 (Appendix B).

Reptiles

The 500-foot buffer of proposed staging area VIG 14 has the potential to support two sensitive reptile species: western pond turtle and two-striped garter snake. The western pond turtle and two-striped garter snake have the potential to occur near the lake margins of Lake Elsinore as well as within Temescal Creek, adjacent to the site (Appendix B).

Birds

Proposed staging area VIG 14 has the potential to support two sensitive avian species: California horned lark and tri-colored blackbird. The freshwater marsh, as well as the large areas of cattails within the staging area and 500-foot buffer, provides suitable habitat for the tri-colored blackbird. The flat open areas provide suitable nesting and foraging habitat for the California horned lark which is tolerant of agricultural-type disturbances. The habitat on-site is also somewhat suitable for the burrowing owl; however, no suitable burrows were observed during the habitat and resource assessment survey. Focused surveys for this species were conducted in support of the VIG Phase 2 Project during the 2015 breeding season when it was determined they were absent from the site (AECOM 2015b).

An additional five species, including the federally listed least Bell's vireo, have the potential to use the riparian areas within the 500-foot buffer of the site. These are Cooper's hawk, bald eagle (over winter only), yellow-breasted chat, and white-faced Ibis. Least Bell's vireo has been documented within the riparian areas adjacent to the 500-foot buffer of the site (CFWO 2015a) (Appendix B).

The bald eagle and the golden eagle have the potential to be seen flying over or foraging over proposed staging area VIG 14. However, these species are not expected to nest on the site or adjacent to the site due to the lack of suitable habitat.

Mammals

Only two sensitive mammal species have a potential to use proposed staging area VIG 14: Yuma myotis and yellow bat (*Lasiurus xanthinus*) (SSC) (Appendix B). There is a possibility of these species roosting in the adjacent riparian habitat and foraging within the adjacent channel.

3.4.6.4 Sensitive Wildlife Species Incidental Observations

No sensitive wildlife species were detected within or adjacent to proposed staging area VIG 14; however, the site was assessed at a time of year when many migrant birds would not be present in the region.

3.5 U.S. Fish and Wildlife Service Designated Critical Habitat

Proposed staging areas VIG 11 and VIG 12 occur within excluded critical habitat for coastal California gnatcatcher, and proposed staging area ASP 8 occurs adjacent to excluded critical habitat for Riverside fairy shrimp (USFWS 2015b).

The excluded critical habitat within or adjacent to the staging areas were excluded from final designation under section 4(b)(2) of the ESA and are described as non-federal lands covered by the WRCMSHCP (FR 2007, FR 2012).

3.6 Western Riverside County Multiple Species Habitat Conservation Plan

The WRCMSHCP is composed of geographic entities that include, in descending size, the following components: Area Plans, Subunits, Criteria Areas, Cell Groups, and Criteria Cells; these are further discussed in the following paragraphs. Area Plans and their Subunits assist in the planning effort as they combine large tracts making impacts associated with large-scale projects easier to describe and quantify. Cell Groups and Criteria Cells are the basic building blocks of the assemblages that make up the overall WRCMSHCP. Area Plans, Subunits, Cell Groups, and Criteria Cells in relation to the additional proposed staging areas are illustrated in Appendix E.

Table 3-6 summarizes the total acreage of the additional proposed staging areas that fall within the WRCMSHCP covered area plans, area plan subunits, criteria areas, criteria groups, and criteria cells.

Table 3-6. WRCMSHCP Area within the Staging Areas (In Acres)

	STAGING AREA VIG 10	STAGING AREA VIG 11	STAGING AREA VIG 12	STAGING AREA VIG 13	STAGING AREA VIG 14	STAGING AREA ASP 8
Area Plan	12.1	8.5	13.0	5.0	17.2	8.8
Subunit	0	8.5	0	0	0	7.3
Criteria Areas	0	8.5	0	0	0	7.3
Cell Groups	0	8.5	0	0	0	0
Criteria Cells	0	8.5	0	0	0	7.3

Source: County of Riverside 2003a; RTLA 2015; SCE 2015b.

3.6.1 WRCMSHCP Reserve Assembly Analysis

3.6.1.1 Area Plans, Subunits, and Criteria Cells

The additional proposed staging areas fall within two WRCMSHCP Area Plans: Elsinore and Sun City/Menifee (Appendix E, Figure E-1).

The Area Plans are further divided into Subunits that contain Criteria Cells, which are targeted for conservation. Target conservation acreages have been established along with a description of the planning species, biological issues and considerations, and criteria for each Subunit within the WRCMSHCP. Proposed staging area ASP 8 falls within the Elsinore (Subunit 3) of the Elsinore Area Plan (Appendix E, Figure E-2). Proposed staging area VIG 11 falls within portions of the Ramsgate (Subunit 5) and Steele Peak (Subunit 6) of the Elsinore Area Plan (Appendix E, Figure E-2).

In some areas, Criteria Cells that have a common habitat goal are combined, forming a Cell Group and further divided into Criteria Cells. Proposed staging area ASP 8 falls within Criteria Cells 4743 and 4846 (Appendix E, Figure E-3). Proposed staging area VIG 11 falls within Cell Group X and associated Criteria Cell 4076 and Cell Group M and associated Criteria Cell 3977 (Appendix E, Figure E-3).

A description of each Area Plan, Subunit, and Criteria Cell that occur within the additional proposed staging areas are provided below, as well as their associated reserve assemble goals.

3.6.1.1.1 Elsinore Area Plan-Subunit 3: Elsinore

The following specific target planning species and conservation goals are included within the biological considerations for this Subunit: American bittern, Bell's sage sparrow, black-crowned night heron, double-crested cormorant, least Bell's vireo, loggerhead shrike, mountain plover, northern harrier, osprey, southwestern willow flycatcher, white-faced ibis, white-tailed kite, Quino checkerspot butterfly, Riverside fairy shrimp, bobcat, western pond turtle, Munz's onion, San Diego ambrosia, and smooth tarplant.

Biological Issues and Considerations

- Conserve wetlands, including Temescal Wash, Collier Marsh, Alberhill Creek, Lake Elsinore and the floodplain east of Lake Elsinore (including marsh Habitats), and maintain water quality.
- Conserve clay soils supporting Munz's onion.
- Conserve Travers-Willow-Domino soil series.
- Conserve foraging habitat for raptors, providing a sage scrub-grassland ecotone.
- Conserve grassland habitat for mountain plover.
- Conserve breeding habitat for northern harrier.
- Maintain linkage area for bobcat.
- Conserve San Diego ambrosia at Alberhill and Nichols Road or find new populations that allow for loss of known populations.
- Maintain Core and Linkage Habitat for western pond turtle.

- Maintain Core Area for Riverside fairy shrimp.
- Maintain opportunities for Core and Linkage Habitat for Quino checker butterfly.

Goals for each Criteria Cell/Cell Group are provided in Table 3-7.

Table 3-7. Elsinore Plan-Subunit 3: Elsinore, Criteria Cells within Staging Area ASP 8

Cell Group	Criteria Cell	Criteria
--	4743	Conservation within this Cell will contribute to assembly of Proposed Extension of Existing Core 3 and Proposed Linkage 8. Conservation within this Cell will focus on riparian scrub, woodland, forest, and grassland habitat associated with the San Jacinto River. Areas conserved within this Cell will be connected to riparian scrub, woodland, and forest habitat proposed for conservation in Cell #4646 to the north and to grassland habitat proposed for conservation in Cell #4742 to the west and #4846 to the south. Conservation within this Cell will range from 45%-55% of the Cell focusing in the southern and northeastern portions of the Cell.
--	4846	Conservation within this Cell will contribute to assembly of Proposed Extension of Existing Core 3. Conservation within this Cell will focus on grassland habitat associated with the San Jacinto River. Areas conserved within this Cell will be connected to grassland habitat proposed for conservation in Cell #4845 to the west, #4743 to the north and #4937 to the south. Conservation within this Cell will range from 65%-75% of the Cell focusing in the western portion of the Cell.

Source: County or Riverside 2003

3.6.1.1.2 Elsinore Area Plan-Subunit 5: Ramsgate

The following specific target planning species and conservation goals are included within the biological considerations for this Subunit: Bell's sage sparrow, California horned lark, coastal California gnatcatcher, Cooper's hawk, grasshopper sparrow, least Bell's vireo, loggerhead shrike, mountain quail, Southern California rufous-crowned sparrow, southwestern willow flycatcher, tree swallow, white-tailed kite, yellow warbler, Quino checkerspot butterfly, bobcat, Stephen' kangaroo rat, and western pond turtle.

Biological Issues and Considerations

- Provide a northwest-southeast connection along the hills between Estelle Mountain and Sedco Hills, primarily for coastal California gnatcatchers, but also other sage scrub species.
- Conserve wetlands including Wasson Creek.
- Provide east-west upland Linkage connecting Ramsgate Core Area to Kabian Park.
- Conserve clay soils supporting Munz's onion.
- Conserve foraging habitat for raptors, including grasslands and a sage scrub-grassland ecotone.
- Maintain Core and Linkage Habitat for bobcat.
- Maintain Core and Linkage Habitat for Stephens' kangaroo rat.

- Maintain linkage area for western pond turtle.
- Maintain opportunities for linkage area for Quino checkerspot butterfly.

Goals for each Criteria Cell/Cell Group are provided in Table 3-8.

Table 3-8. Elsinore Plan-Subunit 5: Ramsgate, Criteria Cells within Staging Area VIG 11

Cell Group	Criteria Cell	Criteria
X	4076	Conservation within this Cell Group will contribute to assembly of Proposed Core 1. Conservation within this Cell Group will focus on chaparral, coastal sage scrub, grassland, riparian scrub, woodland and forest habitat. Areas conserved within this Cell Group will be connected to chaparral and coastal sage scrub habitat proposed for conservation in Cell Group M to the north and to coastal sage scrub, riparian scrub, woodland and forest habitat proposed for conservation in Cell Group Z to the south and in Cell #4178 to the east. Conservation within this Cell Group will range from 30%-40% of the Cell Group focusing in the northeastern portion of the Cell Group.

Source: County or Riverside 2003

3.6.1.1.3 Elsinore Area Plan-Subunit 6: Steele Peak

The following specific target planning species and conservation goals are included within the biological considerations for this Subunit: Bell's sage sparrow, coastal California gnatcatcher, least Bell's vireo, Southern California rufous-crowned sparrow, southwestern willow flycatcher, Quino checkerspot butterfly, bobcat, mountain lion, Stephen' kangaroo rat, and Munz's onion.

Biological Issues and Considerations

- Provide a connection across SR-74 for avian and other terrestrial species.
- Provide northwest-southeast connection along the hills between Estelle Mountain and Sedco Hills, primarily for coastal California gnatcatchers, but also other sage scrub species.
- Conserve wetlands including Wasson Creek.
- Maintain habitat connection between the area of the proposed North Peak Conservation Bank, Steele Peak, and Bureau of Land Management lands.
- Conserve clay soils supporting Munz's onion.
- Conserve foraging habitat for raptors, including grasslands and a sage scrub-grassland ecotone.
- Maintain Core and Linkage Habitat for bobcat.
- Maintain linkage area for mountain lion.
- Maintain Core and Linkage Habitat for Stephens' kangaroo rat.
- Maintain opportunities for Core and Linkage Habitat for Quino checkerspot butterfly.

Goals for each Criteria Cell/Cell Group are provided in Table 3-9.

Table 3-9. Elsinore Plan-Subunit 6: Steele Peak, Criteria Cells within Staging Area VIG 11

Cell Group	Criteria Cell	Criteria
M	3977	Conservation within this Cell Group will contribute to assembly of Proposed Core 1. Conservation within this Cell Group will focus on coastal sage scrub, chaparral and grassland habitat. Areas conserved within this Cell Group will be connected to chaparral and coastal sage scrub habitat proposed for conservation in Cell Group Q to the west, in Cell #3670 to the north and in Cell Group X to the south. Conservation within this Cell Group will range from 75%-85% of the Cell Group focusing in the southern portion of the Cell Group.

Source: County or Riverside, 2003

3.6.1.2 Cores and Linkages within Conservation Area

WRCMSHCP Conservation Area is composed of a variety of existing and proposed cores, extensions of existing cores, linkages, constrained linkages, and non-contiguous habitat blocks. These features are generally referenced as cores and linkages. A core is a block of habitat of appropriate size, configuration, and vegetation characteristics to generally support the life history requirements of one or more covered species. Although a more typical definition is population related and refers to a single species, in the WRCMSHCP, this term is habitat related because of the multispecies nature of the WRCMSHCP. A WRCMSHCP linkage is defined as a connection between Core Areas with adequate size, configuration, and vegetation characteristics to generally provide for “live-in” habitat and/or provide for genetic flow for identified planning species. A constrained linkage is a constricted connection expected to provide for movement of identified planning species between Core Areas, where options for assembly of the connection are limited by existing patterns of use. Areas identified as linkages in the WRCMSHCP may provide movement habitat but not live-in habitat for some species, thereby functioning more as movement corridors.

No existing cores or linkage areas are located within the additional proposed staging area boundaries. Proposed staging area VIG 11 is located adjacent to Proposed Core 1. Proposed staging area ASP 8 is adjacent to Proposed Extension of Existing Core 3 and Proposed Linkage 8. Table 3-10 provides details regarding the proposed linkages and cores as well as the associated planning species.

Table 3-10. Proposed Linkages and Cores within Staging Areas VIG 11 and ASP 8

Linkage	Description
Proposed Core 1	Proposed Core 1 (Alberhill) is located approximately in the east-central region of the WRCMSHCP. Proposed Core 1 consists largely of private lands in the Alberhill area and some public/quasi-public lands. Proposed Core 1 provides habitat and movement for species. Key populations of coastal California gnatcatcher, Munz's onion, many-stemmed dudleya, cactus wren, tricolored blackbird, and yellow warbler are supported in this Proposed Core 1 and likely provides for movement of mammals such as bobcat. Proposed Core 1 is contiguous with Existing Core C. *Planning Species:* coastal California gnatcatcher, cactus wren, tri-colored blackbird, southwestern willow flycatcher, Munz's onion, and many-stemmed dudleya.
Proposed Linkage 8	Proposed Linkage 8 (Sedco Hills/Wildomar) is composed largely of upland Habitat in the Sedco Hills and Wildomar area. This Linkage is a major component of one of the two main east-west connections between Core Areas in the Lake Mathews/Estelle Mountain, Alberhill and the Cleveland National Forest in the western portion of the MSHCP Plan Area and Core Areas in French Valley, Johnson Ranch, Diamond Valley Lake and San Jacinto Mountains in the eastern portion of the MSHCP Plan Area. This Linkage provides Live-In Habitat for over 50 pairs of coastal California gnatcatcher, as well as a connection to other key populations of gnatcatcher known to occur in Alberhill, North Peak and the Ramsgate area. Other Planning Species for which Habitat is provided include Quino checkerspot butterfly, Stephens' kangaroo rat, and bobcat. The grasslands occurring within this proposed Linkage also provide foraging Habitat for a number of raptors. Maintenance of large intact interconnected habitat blocks is important for these species. The northern portion of this Linkage includes a portion of the lower San Jacinto River extending under I-15 to connect with Proposed Extension of Existing Core 3. *Planning Species:* Quino checkerspot butterfly, western pond turtle, Southern California rufous-crowned sparrow, Bell's sage sparrow, southwestern willow flycatcher, loggerhead shrike, coastal California gnatcatcher, least Bell's vireo, Stephen's kangaroo rat, and bobcat.

Table 3-10. Proposed Linkages and Cores within Staging Areas VIG 11 and ASP 8

Linkage	Description
Proposed Extension of Existing Core 3	Proposed Extension of Existing Core 3 (Lake Elsinore Soils) consists of two blocks of land extending from the southern border of Existing Core E (Lake Elsinore). The northern portion of the proposed extension is also connected to Proposed Linkage 8. Proposed Extension of Existing Core 3 conserves soils of the Traver series, which is important to the maintenance of several species of Narrow Endemic Plants. The northern portion of the extension also provides for movement of species along the lower San Jacinto River to Proposed Linkage 8. Together with Existing Core E, Proposed Extension of Existing Core 3 provides Habitat for shorebird use. Since surrounding land uses include city (Lake Elsinore) and community Development, management of edge conditions in this area will be necessary to maintain high quality Habitat in this area. *Planning Species:* Riverside fairy shrimp, Quino checkerspot butterfly, western pond turtle, Bell's sage sparrow, American bittern, mountain plover, northern harrier, white-tailed kite, southwestern willow flycatcher, loggerhead shrike, black-crowned night heron, osprey, double-crested cormorant, white-faced ibis, least Bell's vireo, bobcat, Munz's onion, San Diego ambrosia, and smooth tarplant.

Source: County of Riverside 2003

3.6.1.3 Public/Quasi Public Conserved Lands

The WRCMSHCP acknowledges that future facilities are necessary to support planned development (refer to WRCMSHCP *Section 7.3.9*). Future facilities that are carried out by a Participating Special Entity (PSE) and/or Third Parties Granted Take Authorization will be considered "covered activities" under the WRCMSHCP. Future facilities, including electrical facilities such as the additional proposed staging areas, are permitted within existing Public/Quasi-Public (PQP) land subject to a finding of equivalent conservation provided through individual project mitigation.

The 500-foot buffer of proposed staging area VIG 14 falls within Riverside County Flood Control District (RCFCD) PQP land perpendicular to Chaney Street (RTLA 2015) (Appendix E, Figure E-4). No impacts on PQP land would result from use of this proposed yard.

3.6.1.4 Additional Reserve Lands

Additional Reserve Lands (ARL) are defined as the additional 153,000 acres needed for WRCMSHCP Reserve Assembly and are part of the overall WRCMSHCP Conservation Area providing current and future conservation of the Covered Species.

The 500-foot buffer of proposed staging area VIG 11 lies within ARL (RTLA 2015) (North Peak #2) (Appendix E, Figure E-4). No impacts on ARL land would result from use of this proposed yard.

3.6.2 WRCMSHCP Survey Requirements

Of the 146 species covered by the WRCMSHCP, there are 40 species for which surveys may be required by applicants for public and private development projects, including four birds, three mammals, three amphibians, three crustaceans, 14 narrow endemic plants, and 13 other sensitive plants within the Criteria Area. Of these species, surveys will be completed within suitable habitat areas, and avoidance and minimization measures implemented in accordance with the species-specific objectives for those species. Surveys may not be required if the project is designed to avoid identified species and their associated habitats.

WRCMSHCP required survey areas for each of the additional proposed staging areas were identified by conducting an initial search of the Riverside County and Western Riverside Multiple Species Habitat Conservation Plan GIS Data Layers (RTLA 2015). As a result, some or all of the additional proposed staging areas were identified as located within the burrowing owl survey area, Criteria Area Species Survey Area (CASSA), and Narrow Endemic Plant Species Survey Area (NEPSSA) (Appendix E).

3.6.2.1 WRCMSHCP Required Burrowing Owl Survey Area

Burrowing owl habitat suitability surveys and potential focused surveys determined by the habitat suitability surveys will be required for all and or portions of the six proposed staging areas (Appendix E, Figure E-5). Proposed staging areas ASP 8, VIG 10, and VIG 11 were identified as providing suitable habitat, including suitable burrows, during the habitat and resource assessment survey. The western portion of proposed staging area VIG 14 was included in 2015 VIG Phase 2 Project focused burrowing owl surveys and it was determined burrowing owl were absent from the site (AECOM 2015b). No suitable burrowing owl burrows were observed during the habitat and resource assessment survey of proposed staging areas VIG 12, VIG 13, and VIG 14.

3.6.2.2 WRCMSHCP Narrow Endemic and Criteria Area Plant Species

The WRCMSHCP has defined narrow endemic plant species as sensitive plant species that occur within the Plan area and require site-specific focused surveys for projects that are located within suitable habitat. These species have been grouped within survey areas, which are referred to as Narrow Endemic Plant Species Survey Areas. These survey areas were identified based on the presence of select soils, existing occurrence data for narrow endemic plant species, and consultation with USFWS botanists with extensive experience in western Riverside County (County of Riverside 2003a).

In addition to narrow endemic plant species, the WRCMSHCP also identifies required survey areas for criteria area plant species if a project site is located within suitable habitat. Criteria area plant species are sensitive plant species expected to occur within the various criteria areas that are part of the overall WRCMSHCP area.

3.6.2.2.1 Staging Area VIG 14

Portions of proposed staging area VIG 14 fall within NEPSSA ID 1 (Appendix E, Figure E-5). NEPSSA ID 1 has the potential to provide suitable habitat for the following plant species: Munz's onion, San Diego ambrosia, slender-horned spineflower, many-stemmed dudleya, spreading navarretia, California Orcutt grass, San Miguel savory (*Satureja chandleri*), Hammitt's clay-cress (*Sibaropsis hammittii*), and Wright's trichocoronis.

3.6.2.2.2 Staging Area ASP 8

Portions of proposed staging area ASP 8 fall within the NEPSSA ID 2 (Appendix E, Figure E-5). NEPSSA ID 2 has the potential to provide suitable habitat for the following plant species: Munz's onion, San Diego ambrosia, many-stemmed dudleya, spreading navarretia; California Orcutt grass, San Miguel savory, Hammitt's clay-cress, and Wright's trichocoronis.

Portions of proposed staging area ASP 8 fall within the Criteria Area Species Survey Area (CASSA) ID 2 (Appendix E, Figure E-5). CASSA ID 2 has the potential to provide suitable habitat for the following criteria area plant species: San Jacinto Valley crownscale*,* Parish's saltbush*,* Davidson's saltscale*,* thread-leaved brodiaea*,* Coulter's goldfields*,* round-leaved filaree *(California macrophyllum),* smooth tarplant*,* and little mousetail*.*

3.6.3 WRCMSHCP *Section 6.1.2* Riparian/Riverine and Vernal Pool Habitats

Riparian habitats, as defined by *Section 6.1.2* of the WRCMSHCP, are lands that contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens and, which occur close to, or that depend upon, soil moisture from a nearby freshwater source; or unvegetated ephemerals that transport water supporting downstream resources in the WRCMSHCP Conservation Area (County of Riverside 2003a). Riverine areas, for this report, are defined as stream channels with freshwater flow during all or portions of the year, but primarily include small, unvegetated, ephemeral channels that flow for a short period during major storm events.

Per *Section 6.1.2* of the WRCMSHCP, vernal pools are seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and FACW plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination, that an area exhibits vernal pool characteristics and the definition of the watershed supporting vernal pool hydrology, must be made on a case-by case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records (County of Riverside 2003).

Per the WRCMSHCP, there are specific biological resources, including riparian/riverine and vernal pool habitats, that, if impacted, a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis shall be prepared and implemented in order to provide the necessary information required for RCA to make a WRCMSHCP consistency determination. The DBESP analysis is provided to ensure replacement of any affected functions and values necessary for the success of species and their habitats pursuant to WRCMSHCP requirements.

A description of the riparian/riverine and vernal pool communities that were identified during surveys is presented below in Section 3.7.

3.7 Potentially Jurisdictional Water/Wetland Features

Several areas within the additional proposed staging areas have potentially jurisdictional features. Although no formal delineations were completed as part of this assessment, a summary of the observed drainage and vernal pool features is provided below. Staging areas VIG 10 and VIG 13 do not contain any potential jurisdictional features. More detailed descriptions of habitats can be found in Section 3.2.

3.7.1 Staging Area ASP 8

Proposed staging area ASP 8 and the 500-foot buffer were found to have potential wetland habitat or vernal pools. Wetland-associated plants were present, including alkali weed, smooth tarplant, and woolly marbles. The San Jacinto River flows from north to southwest along the western portion of the 500-foot buffer. Although a formal delineation was not conducted as part of this assessment, it is assumed that this feature falls under the jurisdiction of the U.S. Army Corps of Engineers (USACE), RWQCB, and CDFW. The river is dominated by tamarisk scrub with mulefat and emergent willows. There are also areas within the buffer that are dominated by mulefat with a minor component of tamarisk and emergent willows. The soils on this site are indicative of vernal pool habitat, which has the potential to support several vernal pool and alkali-associated species, including fairy shrimp and sensitive plants. The adjacent San Jacinto River has the potential to support several sensitive bird species, including the least Bell's vireo.

3.7.2 Staging Area VIG 11

Proposed staging area VIG 11 is hilly and two upland drainage features can be found on the east and west sides of the staging area. No riparian habitat is associated with these features. Both of these features flow south where they connect with a large feature that contains a sandy bottom and evidence of a bed and bank. No riparian species were observed within the feature; however, one scalebroom (*Lepidospartum squamatum*) and one palo verde (*Parkinsonia* sp.) were observed within this feature; these species are associated with alluvial fans. Other species within this feature include Eucalyptus and white sage (*Salvia apiana*). Hydric soils are found on this site. The lack of riparian habitat precludes the potential for riparian-associated sensitive wildlife species.

3.7.3 Staging Area VIG 12

Proposed staging area VIG 12 appears to be functioning as a detention basin due to the presence of two 20-inch corrugated steel pipe risers. The site was visited after a fairly large rain event and there was ponded water on the site and the area appeared to be regularly inundated with water. The ponded water may function as a seasonal depression or vernal pool; however, the soils on-site are not typical for vernal pool habitat. Within the 500-foot buffer is an area of riparian scrub habitat that appears artificially supplemented by nuisance runoff from SR-74 and the new residential and recreation development to the north and east of the site. This feature starts within a landscaped area along the southeast side of Highway 74 and flows via a culvert (assumed) to the north side of Highway 74; however, it does not appear to flow much farther beyond the 500-foot buffer. A review of older aerial photos shows that there was no riparian vegetation or obvious drainage feature in this area until the surrounding areas were modified. The habitat likely falls under the jurisdiction of CDFW.

3.7.4 Staging Area VIG 14

Proposed staging area VIG 14 and the associated 500-foot buffer were found to have three habitats that could be considered jurisdictional: Willow Riparian Scrub, Freshwater Marsh, and Cismontane Alkali Marsh. The alkali soils within the staging area could be suitable for a variety of sensitive plants as well as fairy shrimp. Temescal Wash flows from northwest to southeast along the western boundary of the proposed staging area. This portion of Temescal Wash is channelized and heavily disturbed; however, there are small areas of Southern Willow Scrub and Cattail Marsh within this channel that provide habitat for sensitive wildlife, including the least Bell's vireo and tri-colored blackbird. There is a small patch of cattail marsh at the northwest corner of the staging area. This ponded area is possibly artificially enhanced by nuisance flow from 3rd Street and Pasadena Street.

It should be noted that numerous road ruts and depressions were noted on this site as being potential habitat for fairy shrimp. Although these may be considered seasonal depressions, no vernal pool-associated plants were found in these ruts and likely the ruts do not fall under USACE jurisdiction.

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APPENDIX A

SENSITIVE PLANT SPECIES OCCURRENCE POTENTIAL TABLE

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COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Chaparral Sand-Verbena *Abronia villosa* var. *aurita*	CRPR: 1B.1	Jan-Sep	Occurs within sandy soils and is associated with chaparral and sage scrub plant communities. 80 - 1600 meters. ***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to level of disturbance and lack of suitable habitat. Plant was not observed.* ***VIG 11:*** *Does not occur within proposed staging area. Drainage feature within 500-foot buffer may provide suitable habitat, however it is unlikely to occur as it was not observed.* ***VIG 12:*** *Unlikely to occur due to the lack of suitable habitat and not observed on-site.* ***VIG 13:*** *Does not occur due to level of disturbance.* ***VIG 14:*** *Does not occur.*
Munz's Onion *Allium munzii*	FE ST CRPR: 1B.1 MSHCP: NEPS	March-May	Occurs in clay soils (Within Western Riverside County unit Bosanko clay soils and Las Posas gravelly loam) within mesic sites in grassy openings within scrublands or woodlands. 297 - 1070 meters ***This species is known to occur within 2,000 feet of proposed VIG 11 project site, and suitable habitat occurs on this site and within the 500-foot buffer. This species is only likely to occur within proposed VIG 11 staging area.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
San Diego Ambrosia *Ambrosia pumila*	FE CRPR: 1B.1 MSHCP: NEPS	April-Oct	Occurs in upland areas on clay slopes or dry margins of vernal pools. Often associated with open, gently-sloped grasslands, and generally found in alkaline soils. 20 - 415 meters ***ASP 8:*** *Unlikely to occur due to the presence of seasonally ponded features and clay/alkaline soils; however, site assessment was conducted during the known blooming season for this species. This species was not observed.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to level of disturbance.* ***VIG 14:*** *Unlikely to occur due to the presence of seasonally ponded features and alkaline soils; however, site assessment was conducted during the known blooming season for this species and the species was not observed.*
Rainbow Manzanita *Arctostaphylos rainbowensis*	CRPR: 1B.1	Dec-March	Most often occurs in Gabbro soils within chaparral in Riverside and San Diego Counties. 225 - 670 meters *The proposed staging areas are outside the known range of this species, therefore it does not occur. Additionally, this shrub was not observed on-site.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Jaeger's Milkvetch *Astragalus pachypus* var. *jaegeri*	CRPR: 1B.1	Dec-June	Occurs in a variety of habitats including chaparral, cismontane woodland, coastal scrub and valley/foothill grassland habitats. 365 - 915 meters ***ASP 8:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 10:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 11:*** *Unlikely to occur as this plant has no reported occurrences in the area.* ***VIG 12:*** *Unlikely to occur due to presence of suitable plant communities; however, the proposed staging area's level of disturbance and lack of other populations in area likely preclude presence.* ***VIG 13:*** *Does not occur.* ***VIG 14:*** *Unlikely to occur due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
San Jacinto Valley Crownscale *Atriplex coronata* var. *notatior*	FE CRPR: 1B.1 MSHCP: CAPS	April-Aug	Occurs primarily in floodplains dominated by alkali scrub, alkali playas, vernal pools, and to a lesser extent alkali grasslands. Restricted to highly alkaline, silty-clay soils in association with Travers-Domino-Willows soil association. 139 - 500 meters ***ASP 8: Likely to occur due to presence of suitable habitat and known observations in area.*** ***VIG 10:*** *Does not occur due to the lack of suitable soils.* ***VIG 11:*** *Does not occur due to the lack of suitable soils.* ***VIG 12:*** *Does not occur due to the lack of suitable soils.* ***VIG 13:*** *Does not occur due to high levels of disturbance.* ***VIG 14: Likely to occur due to presence of suitable habitat and known observations in area.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Parish's Brittlescale *Atriplex parishii*	CRPR: 1B.1 MSHCP: CAPS	June-Oct	Occurs within alkaline soils and is most often associated with vernal pool and playa habitat types. 25 - 1900 meters ***ASP 8: Likely to occur due to the presence of seasonally ponded features; however, the proposed staging area's assessment was conducted during the known blooming season for this species and it was not observed.*** ***VIG 10:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 11:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 12:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 13:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur due to the presence of seasonally ponded features; however, the site assessment was conducted during the known blooming season for this species but it was not observed.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Davidson's Saltscale *Atriplex serenana var. davidsonii*	CRPR: 1B.2 MSHCP: CAPS	April-Oct	Occurs in gentle hillsides, valleys, and floodplains in semi alkaline mudflats, vernal pools, mesic southern needlegrass grassland, mixed native/non-native grassland and alkaline grassland plant communities in association with clay, loamy sand, or alkaline silty-clay soils. 10 - 200 meters ***ASP 8: Likely to occur due to the presence of seasonally ponded features and sandy clay/alkaline soils; however, the proposed staging area's assessment was conducted during the known blooming season for this species and it was not observed.*** ***VIG10:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 11:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 12:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 13:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur due to the presence of seasonally ponded features; however, the site assessment was conducted during the known blooming season for this species but it was not observed.***
California ayenia *Ayenia compacta*	CRPR: 2B.3	March - April	Occurs in desert wash, Mojavean desert scrub and Sonoran desert scrub in sandy and gravelly washes in the desert; dry desert canyons. 60-1830 m. *This species is unlikely to occur within the proposed staging areas, or within the buffer areas due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Thread-Leaved Brodiaea *Brodiaea filifolia*	FT SE CRPR: 1B.1 MSHCP: CAPS	March-June	Occurs on gentle hillsides and floodplain in semi-alkaline mudflats, vernal pools, mesic needle grass, grassland, non-native grassland and alkali grassland Requires mesic, clay habitats; sometimes serpentine. 25 - 1219 meters ***ASP 8: Likely to occur due to the presence of suitable habitats.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur due to the presence of suitable habitats.***
Santa Rosa Basalt brodiaea *Brodiaea santarosae*	CRPR: 1B.2	May - June	Occurs in valley & foothill grassland in Santa Rosa Basalt soils. 585-1045 m. *Does not occur within the proposed staging areas due to the lack of suitable soils.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Tecate Cypress *Hesperocyparis forbesii*	CRPR: 1B.1	-	Occurs within closed cone coniferous forest and chaparral habitat. Usually associated with clay, gabbroic or metavolcanic soils. 250 and 1490 metes *Does not occur within the proposed staging areas (not observed).*
Plummer's Mariposa Lily *Calochortus plummerae*	CRPR: 1B.2	May-July	Occurs on rocky or sandy sites, usually of granitic or alluvial material within sage scrub, Chaparral, valley foothill grassland, cismontane woodland and lower montane coniferous forest. Can be very common after a fire. 100 - 1700 meters *Does not occur within the proposed staging areas due to the lack of suitable conditions.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Intermediate Mariposa Lily *Calochortus weedii* var. *intermedius*	CRPR: 1B.2	May-July	Occurs on rocky or sandy sites within sage scrub, chaparral, and valley/foothill grassland habitats. 105 - 855 meters ***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11: Likely occurs due to presence of suitable habitat.*** ***VIG 12:*** *Unlikely to occur due to presence of suitable plant communities and soils; however, disturbance may preclude presence.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Payson's Jewel Flower *Caulanthus simulans*	CRPR: 4.2	Feb-June	Occurs in frequently burned areas or in other disturbed sites such as streambeds within chaparral and coastal scrub habitats. ***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11: Likely to occur in streambed adjacent to site.*** ***VIG 12: Likely to occur in streambed adjacent to site.*** ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Smooth Tarplant *Centromadia pungens* ssp. *laevis*	CRPR: 1B.1 MSHCP: CAPS	April-Sept	Occurs in alkali meadow or alkali scrub within valley and foothill grasslands, meadows, playas or riparian woodland. 0 - 480 meters ***ASP 8: Occurs on-site.*** ***VIG 10:*** *Does not occur due to lack of suitable conditions.* ***VIG 11:*** *Does not occur due to lack of suitable conditions.* ***VIG 12:*** *Does not occur due to lack of suitable conditions.* ***VIG 13:*** *Does not occur due to lack of suitable conditions.* ***VIG 14: Occurs on-site.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Parry's Spineflower *Chorizanthe parryi* var. *parryi*	CRPR: 1B.1	April-June	Occurs in coastal sage scrub and chaparral. Found on dry slopes and flats within dry sandy soils. 275 - 1220 meters ***ASP 8: Likely to occur due to suitable habitat and proximity to known populations.*** ***VIG 10:*** *Does not occur due to lack of suitable habitat.* ***VIG 11: Likely to occur due to suitable habitat and proximity to known populations.*** ***VIG 12: Likely to occur due to suitable habitat and proximity to known populations.*** ***VIG 13:*** *Does not occur due to lack of suitable habitat.* ***VIG 14:*** *Does not occur due to lack of suitable habitat.*
Long-Spined Spineflower *Chorizanthe polygonoides var. longispina*	CRPR: 1B.2	April-July	Occurs in Gabbroic clay soils within chaparral, coastal scrub, meadows, valley/foothill grasslands. 30 - 1530 meters. *This species is unlikely to occur within the proposed staging areas due to lack of suitable conditions.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Summer Holly *Comarostaphylis diversifolia* ssp. *diversifolia*	CRPR: 1B.2	April-June	Occurs within chaparral and Cismontane woodland habitat. 30 - 550 meters. *This species does not occur within the proposed staging areas.*
Wiggins' cryptantha *Cryptantha wigginsii*	CRPR: 1B.2	February - June	Occurs in coastal scrub often in clay soils. *This species is unlikely to occur within the proposed staging areas due to lack of suitable soils as well as distance from known populations.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Slender-horned Spineflower *Dodecahema leptoceras*	FE SE CRPR: 1B.1 MSHCP: NEPS	April-June	Occurs within chaparral, sage scrub habitats. Flood deposited terraces and washes. Associations include *Encelia*, *Dalea*, *Lepidospartum*. 200 - 760 meters. ***ASP 8: Likely to occur within 500-foot buffer area.*** ***VIG 10:*** *Does not occur due to lack of suitable habitat.* ***VIG 11:*** *Does not occur within staging area due to lack of suitable habitat. Unlikely to occur within sandy wash in 500-foot buffer area.* ***VIG 12:*** *Unlikely to occur due to lack of suitable habitat.* ***VIG 13:*** *Does not occur due to lack of suitable habitat.* ***VIG 14: Likely to occur within 500-foot buffer area.***
Many-Stemmed Dudleya *Dudleya multicaulis*	CRPR: 1B.2 MSHCP: NEPS	April-July	Occurs in heavy clay soils or grassy slopes in barrens, rocky places, and ridgelines chaparral, sage scrub and, valley/foothill grasslands. 15 - 790 meters *Only proposed staging area VIG 11 provides suitable habitat for this species however due to distance to known locations it is unlikely to occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Sticky Dudleya *Dudleya viscida*	CRPR: 1B.2	May-June	Occurs within **c**haparral, cismontane woodland sage scrub habitat. Usually associated with rock outcrops. 10 - 550 meters *Only proposed staging area VIG 11 provides suitable habitat for this species however due to distance to known locations it is unlikely to occur.*
Round-Leaved Filaree *California macrophylla*	CRPR: 1B.2 MSHCP: CAPS	March-May	Occurs in grasslands with relatively low cover of annual grasses on friable/clay soils. 15 - 1200 meters *This species is unlikely to occur within the proposed staging areas due to lack of suitable habitats.*
San Diego Button Celery *Eryngium aristulatum* var. *parishii*	FE SE CRPR: 1B.1	April-June	Occurs within vernal pool, sage scrub and valley/foothill grasslands. Almost always under natural conditions in wetlands. 20 – 620 meters *This species is unlikely to occur within the proposed staging areas due to lack of suitable habitats.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Campbell's Liverwort *Geothallus tuberosus*	CRPR: 1B.1	-	Occurs within mesic areas of sage scrub habitat and vernal pools often associated with clay soils. 10 - 600 meters *Only proposed staging areas ASP 8 and VIG 14 provide suitable habitat for this species, however it was not observed during the assessment. It is unlikely to occur.*
Palmer's Grapplinghook *Harpagonella palmeri*	CRPR: 4.2	March-May	Occurs within openings in chaparral, sage scrub, and valley/foothill grassland habitats. Often associated with clay soils. 20 - 955 meters *Only proposed staging area VIG 11 provides suitable habitat for this species; however, due to distance to known locations, it is unlikely to occur.*
Mesa Horkelia *Horkelia cuneata var. puberula*	CRPR: 1B.1	Feb-Jul	Occurs in chaparral, cismontane woodland, and coastal scrub. Requires sandy or gravelly sites. 70 - 810 meters *Required habitat for this species does not occur within any of the proposed staging areas; therefore, this species does not occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Santa Lucia dwarf rush *Juncus luciensis*	CRPR: 1B.2	April - July	Occurs in vernal pools, meadows and seeps, ephemeral drainages, streamsides, lower montane coniferous forest, chaparral and Great Basin scrub in Santa Rosa Basalt soils. 585-1045 m. *Suitable habitat for this species is present within ASP 8 and VIG 14; however, this species is known from only a few occurrences in Riverside County, associated with the Santa Rosa Plateau, therefore this species is unlikely to occur.*
Coulter's Goldfields *Lasthenia glabrata* ssp. *coulteri*	CRPR: 1B.1 MSHCP: CAPS	Feb-June	Occurs primarily in highly alkaline, silty-clay soils. Travers-Domino-Willows soil association within alkali vernal plains community. 1 - 1220 meters ***This species is likely to occur within proposed staging areas ASP 8 and VIG 14 due to presence of suitable soils and hydrology. Populations known in vicinity.***
Heart-leaved Pitcher Sage *Lepechinia cardiophylla*	CRPR: 1B.2 MSHCP: CAPS	April-July	Occurs in closed-cone coniferous forest, chaparral, and cismontane woodland. 520 - 1370 meters *The proposed staging areas are outside of the elevation range of this species; therefore, it does not occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Robinson's Pepper Grass *Lepidium virginicum* var. *robinsonii*	CRPR: 4.3	Jan-July	Occurs within chaparral, coastal scrub. Often associated with dry soils. 1 - 885 meters ***Only VIG 11 has the potential to support this species. It is considered likely to occur due to presence of suitable habitat and proximity to known populations.***
Lemon Lily *Lilium parryi*	CRPR: 1B.2	July-Aug	Occurs within lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest. Prefers wet, mountainous terrain; generally in forested areas, on shady edges of streams, in open boggy meadows and seeps. 1220 - 2745 meters *The proposed staging areas are outside of the elevation range of this species; therefore, it does not occur.*
Parish's Meadowfoam *Limnanthes alba ssp. parishii*	SE CRPR: 1B.2	April-June	Occurs within lower montane coniferous forest, meadows, seeps, and vernal pool habitats**.** Almost always under natural conditions in wetlands. 600 - 2000 meters. *The proposed staging areas are outside of the elevation range of this species; therefore, it does not occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
intermediate monardella *Monardella hypoleuca ssp. intermedia*	CRPR: 1B.3	April - September	Occurs in chaparral, cismontane woodland, lower montane coniferous forest, often in steep, brushy areas. 400-1250 m. *Suitable habitat for this species does not occur within the proposed staging areas; therefore, this species does not occur.*
Hall's Monardella *Monardella macrantha* ssp. *hallii*	CRPR: 1B.3	June-Oct	Occurs within broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, and valley and foothill grassland habitats. Often associated with dry slopes and ridges in openings within the above communities. 730 - 2195 meters *The proposed staging areas are outside of the elevation range of this species; therefore, it does not occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Little Mousetail *Myosurus minimus* ssp. *apus*	CRPR: 3.1 MSHCP: CAPS	March-June	Occurs in valley/foothill grasslands with alkaline soils and vernal pools. 20 - 640 meters ***ASP 8: Likely to occur and has been observed on-site in the past.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur due to presence of suitable habitat and proximity to know known populations.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Mud Nama *Nama stenocarpa*	CRPR: 2B.2 MSHCP: CAPS	Jan-July	Occurs within marshes and along the margins of lakes. 5 - 500 meters ***ASP 8: Likely to occur in 500-buffer near margin of lake Elsinore.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Unlikely to occur due to disturbance and marginal suitable habitat.* ***VIG 13:*** *Does not occur due to lack of suitable habitat.* ***VIG 14: Likely to occur within the proposed staging area and possibly within the 500-foot buffer due to presence of suitable wetland habitat.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Spreading Navarretia *Navarretia fossalis*	FT CRPR: 1B.1 MSHCP: NEPS	April-June	Primarily associated with vernal pools, depressions, and ditches in areas that once supported vernal pools. Often associated with a larger vernal floodplain(s) dominated by annual alkali grasslands and alkali playa. 30 - 1300 meters ***ASP 8:*** *Habitat is present; however, there are no known populations in the area; therefore, it is unlikely to occur.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable soils.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Habitat is present; however, there are no known populations in the area; therefore, it is unlikely to occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Prostrate Vernal Pool Navarretia *Navarretia prostrata*	CRPR: 1B.1 MSHCP: CAPS	April-July	Occurs within wetlands and mesic sites found within habitat types including: sage scrub, meadows and seeps alkali valley/foothill grassland. Also associated with Vernal pools. 15 - 700 meters ***ASP 8: Habitat is present; however, there are no known populations in the area; therefore, it is unlikely to occur.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13*****:** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Habitat is present; however, there are no known populations in the area; therefore, it is unlikely to occur.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Chaparral nolina *Nolina cismontana*	CRPR: 1B.2	May-July	Occurs within chaparral and sage scrub habitats. Often associated with sandstone or gabbro soils. 140 - 1275 meters ***ASP 8:*** *Unlikely to occur due to the lack of suitable habitat and distance to known populations.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Unlikely to occur due to marginal habitat and distance to known populations.* ***VIG 12:*** *Unlikely to occur due to marginal habitat and distance to known populations.* ***VIG 13:*** *Does not occur due to lack of suitable habitat.* ***VIG 14:*** *Does not occur due to lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
California Orcutt Grass *Orcuttia californica*	FE SE CRPR: 1B.1 MSHCP: NEPS	April-Aug	All known localities are associated with vernal pools. Specifically, southern basaltic clay pan and alkaline vernal pools. 15 - 660 meters ***ASP 8: Likely to occur. Species documented in vicinity of site.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Unlikely to occur. Few habitat components met.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur. Species documented in vicinity of site.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
White Rabbit-Tobacco *Pseudognaphaliu m leucocephalum*	CRPR: 2B.2	July-Dec	Occurs within chaparral, cismontane woodland, sage scrub, and riparian woodlands. Usually associated with sandy or gravelly substrates. 0 - 2100 meters ***ASP 8: Likely to occur within 500-foot buffer due to presence of alluvial habitat.*** ***VIG 10:*** *Does not occur due to heavy disturbance.* ***VIG 11:*** *Does not occur within the proposed staging area. Unlikely to occur within the sandy wash within the 500-foot buffer which provides marginal habitat.* ***VIG 12:*** *Does not occur within the proposed staging area. Unlikely to occur within the drainage feature located in the 500-foot buffer which provides marginal habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur within the proposed staging area. Unlikely to occur within the 500-foot buffer due to marginal habitat within Temescal Wash.*
San Miguel Savory *Clinopodium chandleri*	CRPR: 1B.2 MSHCP: NEPS	March-July	Occurs in chaparral, cismontane woodland, coastal scrub, riparian woodland, valley/foothill grasslands. Requires rocky, gabbroic or metavolcanic substrate. Often found within these plant communities after burns. 20 - 1200 meters *Suitable soils for this species are not found within the proposed staging areas; therefore, it is unlikely to occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Southern Mountain Skullcap *Scutellaria bolanderi* ssp. *austromontana*	CRPR: 1B.2	June-Aug.	Occurs within chaparral, cismontane woodland, and lower montane coniferous forests. Found in gravelly soils on streambeds or in mesic sites in oak or pine woodland. 425 - 2000 meters *Unlikely to occur within the proposed staging areas due to the lack of suitable habitat.*
Hammitt's Clay-Cress *Sibaropsis hammittii*	CRPR: 1B.2 MSHCP: NEPS	March-April	Occurs within openings in chaparral and valley/foothill grasslands. Often associated with clay soils. 720 - 1065 meters *The proposed staging areas are outside of the elevation range of this species; therefore, it does not occur.*
Salt Spring Checkerbloom *Sidalcea neomexicana*	CRPR: 2B.2	March-June	Usually occurs in wetlands, but occasionally found in non-wetland environs. Occurs within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and alkaline playas. 15 - 1530 meters *Suitable habitat for this species is found only in proposed staging areas ASP 8 and VIG 14; however, there are no known occurrences in the area; therefore, it is unlikely to occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Bottle Liverwort *Sphaerocarpos drewei*	CRPR: 1B.1	-	Occurs within openings on soil in chaparral and sage scrub habitats. 90 - 600 meters *Unlikely to occur within the proposed staging areas due to the lack of suitable habitat.*
San Bernardino Aster *Symphyotrichum defoliatum*	CRPR: 1B.2	July-Nov	Occurs within meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland habitat. Found in vernally mesic grasslands or near ditches, streams, springs, and disturbed areas within 2-2040 meters ***ASP 8:*** *Suitable habitat present; however, no known occurrences in area; therefore, it is unlikely to occur.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Suitable habitat present; however, no known occurrences in area; therefore, it is unlikely to occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Parry's Tetracoccus *Tetracoccus dioicus*	CRPR: 1B.2	April-May	Occurs in stony and gabbroic soil within chaparral and coastal scrub. 165 - 1000 meters *Marginal habitat occurs only within proposed staging area VIG 11. This species is unlikely to occur.*
woven-spored lichen *Texosporium sancti-jacobi*	CRPR: 3	-	Occurs in chaparral and open sites; in California with *Adenostoma fasciculatum, Eriogonum, and Selaginella* at pinnacles, on small mammal pellets. 290-660 m. *Marginal habitat occurs only within proposed staging area VIG 11. This species is unlikely to occur.*
California Screw moss *Tortula californica*	CRPR: 1B.2	-	Occurs within chenopod scrub and valley/foothill grassland. Usually associated with sandy, soil. 10 - 1460 meters ***Suitable habitat for this species occurs only within proposed staging area VIG 14. Although there are no reported occurrences in the area, this is an inconspicuous plant and may be easily over-looked. This species is likely to occur.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	BLOOMING PERIOD	PREFERRED HABITAT, AND POTENTIAL FOR OCCURRENCE
Wright's Trichocoronis *Trichocoronis wrightii* var. *wrightii*	CRPR: 2B.1 MSHCP: NEPS	May-Sept	Occurs within meadows and seeps, marshes and swamps, riparian forest and Vernal pool habitat. Usually associated with alkaline soils. 5 - 435 meters ***ASP 8: Marginal habitat occurs within the proposed staging area and suitable habitat occurs within the 500-foot buffer; however, a lack of known occurrences in the area makes this species unlikely to occur.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Suitable habitat occurs within the proposed staging area and within the 500-foot buffer. There are no known occurrences in the area; therefore, it is unlikely to occur.***
La Purisima Viguiera *Viguiera purisimae*	CRPR: 2B.3	April-Sept.	Occurs within coastal bluff scrub and chaparral. CNPS maps this species range within Orange and San Diego Counties only. 365 - 425 meters *The proposed staging areas are outside the known range of this species; therefore, it does not occur.*

APPENDIX B

SENSITIVE WILDLIFE SPECIES OCCURRENCE POTENTIAL TABLE

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COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
INVERTEBRATES		
Vernal Pool Fairy Shrimp* *Branchinecta lynchi*	FT	Found at scattered locations throughout southern California, although only known from Riverside and San Diego Counties in southern California. Restricted to cool-water vernal pools, often early in the rainy season. ***ASP 8: Suitable habitat within the proposed staging area. Likely to occur.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Marginal habitat within the proposed staging area. Unlikely to occur.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Suitable habitat within the proposed staging area. Likely to occur.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
senile tiger beetle *Cicindela senilis frosti*	-	Occurs on mud shore/flats and wetlands. Inhabits marine shoreline, from Central California coast south to salt marshes of San Diego. Also found at Lake Elsinore. ***ASP 8: Known to occur in the immediate area. Likely to occur.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Known to occur in the immediate area. Likely to occur.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Quino Checkerspot Butterfly* *Euphydryas editha quino*	FE	Range restricted to limited areas of southern California and northern Baja California; currently only known in southern California from relatively small populations within Riverside and San Diego counties. Inhabits openings within Riversidean sage scrub and chaparral; also found in grasslands, and vernal pool and lake margins. ***ASP 8:*** *Unlikely to occur due to the lack of larval host plants.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Suitable habitat occurs within the proposed staging area. Known populations are in the area; however, observations are more than 10 years old. Unlikely to occur.* ***VIG 12:*** *Unlikely to occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*
Santa Rosa Plateau fairy shrimp *Linderiella santarosae*	-	Restricted to vernal pools found on the Santa Rosa Plateau in Riverside County. *Suitable habitat for this species occurs within proposed staging areas ASP 8 and VIG 14; however, the staging areas are outside of the species known range. Therefore, it is unlikely to occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Icenogle's socalchemmis spider *Socalchemmis icenoglei*	-	Found in coastal scrub. Known only from the type locality in the vicinity of Winchester, Riverside County. *Not enough is known about this species to make a determination; however, the habitat within the staging areas is marginal; therefore, it is assumed that this species is unlikely to occur.*
Riverside Fairy Shrimp* *Streptocephalus woottoni*	FE	Endemic to western Riverside County, as well as southern California coastal counties from Ventura to San Diego. Restricted to relatively deep vernal pools in grasslands, or in openings within coastal sage scrub and chaparral. Hatch in warm water later in season. ***ASP 8: Suitable habitat is present and the species is known to occur in area; therefore, it is likely to occur.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12: Marginal habitat is present and the species is known to occur in area; therefore, it is likely to occur****.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Suitable habitat is present and the species is known to occur in area; therefore, it is likely to occur****.*
FISH		

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Arroyo Chub* *Gila orcuttii*	SSC	The Arroyo chub is native to the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers and to Malibu and San Juan creeks. They prefer slow moving mud or sand bottomed sections of streams and are only abundant in portions of the Santa Margarita River and Trabuco, San Juan, and Malibu Creeks. *Suitable habitat for this species occurs within the 500-foot buffer of both the proposed staging areas ASP 8 and VIG 14; however, it is not known to occur within these drainage features; therefore, it is unlikely to occur.*
Steelhead (Southern California DPS) *Oncorhynchus mykiss irideus*	FE SSC	Range is from the Santa Maria River, San Luis Obispo County, south to the larger remaining streams in San Diego County. Southern Steelhead currently occurs within only four large river systems in their range: the Santa Maria, Santa Ynez, Ventura, and Santa Clara rivers. Adults migrate from the ocean into freshwater streams to spawn between December and April. Juveniles remain in freshwater streams for two to three years before migrating to the ocean. *The proposed staging areas are outside of this species' range.*
AMPHIBIANS		
Arroyo Toad* *Anaxyrus californicus*	FE SSC	Uncommon and local in primarily cismontane southern California from Santa Barbara County south into Baja California. Inhabits washes, streams, arroyos and adjacent uplands, generally where riparian woodlands (willow, cottonwood, sycamore and/or coast live oak) are present. Typically requires shallow gravelly pools adjacent to sandy terraces, with little or no emergent vegetation. *The proposed staging areas are outside of this species' known range.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
California Red-legged Frog* *Rana draytonii*	FT SSC	Usually occurs in or near permanent water of low gradient streams, marshes, ponds, lakes and other quiet bodies of water. Breeding occurs in permanent or seasonal pools. The only known location for this species to still occur in Riverside County is the Santa Rosa Plateau. *Unlikely to occur within the proposed staging areas due to distance from known populations and presence of only marginal, disturbed habitat.*
Western Spadefoot Toad* *Spea hammondii*	SSC	Occurs in a variety of habitats, from lowlands to foothills, in grasslands, open chaparral and sage scrub, and open woodland. Most often prefers short-grass plains, with sandy or gravelly soils (e.g., alkali flats, washes, alluvial fans). Known to breed in stock tanks and other artificial water bodies. In upland habitats to avoid desiccation, becomes inactive and burrows underground. Active again in late winter and spring, after the first rains. ***There is suitable habitat for this species within proposed staging areas ASP 8, VIG 12 and VIG 14 and it has been reported in the area. Therefore, this species is likely to occur.***
Coast Range Newt* *Taricha torosa*	SSC	Occurs along the coast and coast ranges of California from Mendocino County to San Diego County. Breeding occurs in ponds, reservoirs, and streams. Outside breeding season found in terrestrial habitats (e.g., grasslands, moist oak woodlands and chaparral); can migrate over 0.5 miles to find breeding ponds or slow moving streams. Will spend drier periods burrowing in soil, or under fallen logs and debris. *The habitat within the proposed staging areas is marginal and this species is unlikely to occur.*
REPTILES		

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Western Pond Turtle* *Emys marmorata*	SSC	Occurs along the coastal slope of southern California, from the San Francisco Bay area south into Baja California, from sea level to over 5,900' elevation. Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms. Generally requires permanent (or nearly permanent) water. Can also be found in woodland, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. ***ASP 8: Likely to occur near creek and lake margins within the 500-foot buffer.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur near creek and lake margins within the 500-foot buffer.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Orange-throated Whiptail*	SSC	Occurs in a limited range within the coastal slope of southern California, from the Santa Ana River area portions of Orange, Riverside and San Bernardino counties, and south into Baja California. From sea level to approximately 2,000' elevation. Prefers semi-arid brushy areas typically with loose soil and rocks, including coastal sage scrub, chaparral, rocky hillsides, washes and streamsides.
Aspidoscelis hyperythra		***ASP 8: Likely to occur within the 500-foot buffer.*** ***VIG 10:*** *Does not occur due to heavy disturbance.* ***VIG 11: Likely to occur due to presence of suitable habitat.*** ***VIG 12: Likely to occur due to presence of suitable habitat.*** ***VIG 13:*** *Does not occur due to heavy disturbance.* ***VIG 14:*** *Unlikely to occur within the proposed staging area due to marginal habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
coastal whiptail *Aspidoscelis tigris stejnegeri*	-	Found in deserts & semiarid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Ground may be firm soil, sandy, or rocky. ***ASP 8: Likely to occur within the 500-foot buffer.*** ***VIG 10:*** *Does not occur due to heavy disturbance.* ***VIG 11: Likely to occur due to presence of suitable habitat.*** ***VIG 12: Likely to occur due to presence of suitable habitat.*** ***VIG 13:*** *Does not occur due to heavy disturbance.* ***VIG 14:*** *Unlikely to occur within the proposed staging area due to marginal habitat.*
San Diego banded gecko *Coleonyx variegatus abbotti*	-	Found in chaparral and coastal scrub habitats in coastal & cismontane Southern California. Found in granite or rocky outcrops in coastal scrub & chaparral habitats. ***Suitable habitat is found only within the proposed staging area VIG 11. Therefore, it is likely to occur only at this staging area.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
rosy boa *Charina trivirgata*	-	Found in chaparral, Mojavean desert scrub and Sonoran desert scrub from the coast to the Mojave & Colorado deserts. Prefers moderate to dense vegetation & rocky cover. ***Suitable habitat is found only within the proposed staging area VIG 11. Therefore, it is likely to occur only at this staging area.***
Red-diamond Rattlesnake* *Crotalus ruber*	SSC	Occurs in southern California from the Morongo Valley area of San Bernardino county west to the coast and south along the peninsular ranges to Baja California. Inhabits arid rocky brushy area, including coastal sage scrub, chaparral, as well as oak and other woodlands, and grasslands. ***Suitable habitat is found only within the proposed staging areas VIG 11 and VIG 12. Therefore, it is likely to occur only at these two staging areas.***
San Bernardino ringneck snake *Diadophis punctatus modestus*	-	Most common in open, relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams. Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous veg. ***Suitable habitat is found only within the proposed staging areas VIG 11 and VIG 12. Therefore, it is likely to occur only at these two staging areas.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Coast Horned Lizard* *Phrynosoma blainvillii*	SSC FSS	Found along the coastal slope of southern California from the San Francisco Bay area, south into Baja California. Inhabits open areas of sandy soil, sandy ridges, and low vegetation in valleys, foothills and semiarid mountains from sea level to 8,000 ft. in elevation. Found in grasslands, woodlands, sage scrub and chaparral, in openings with areas of friable soil. Frequently found near harvester ant mounds, its preferred prey. ***ASP 8: Suitable habitat and prey found within the proposed staging area. Therefore, it is likely to occur.*** ***VIG 10:*** *Does not occur due to disturbance and lack of prey.* ***VIG 11: Suitable habitat and prey found within the proposed staging area. Therefore, it is likely to occur.*** ***VIG 12: Suitable habitat and prey found within the proposed staging area. Therefore, it is likely to occur.*** ***VIG 13:*** *Does not occur due to disturbance and lack of prey.* ***VIG 14:*** *Prey not observed within the proposed staging area and habitat is marginal. Therefore, it is unlikely to occur.*
Coast Patch-nosed Snake *Salvadora hexalepis virgultea*	SSC	Occurs in southern California from the Carrizo Plains in San Luis Obispo County, south through the coastal zone, west of the deserts, into coastal northern Baja California. Inhabits semi-arid brushy areas, including sage scrub and chaparral, in canyons, rocky hillsides and mesas. ***Suitable habitat is found only within proposed staging areas VIG 11 and VIG 12. Therefore, it is likely to occur only at these two staging areas.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Two-striped Garter Snake *Thamnophis hammondii*	SSC	In southern California, ranges along the coast and east through the Transverse Ranges into limited portions of the western desert; then south through the Peninsular Ranges into northern Baja California. Can be found at elevations from sea level to 6,988 ft. Found in or near permanent freshwater, often along streams with rocky beds and riparian growth. ***Suitable habitat for this snake is found within the 500-foot buffer areas for proposed staging areas ASP 8 and VIG 14; therefore, it is likely to occur.***
BIRDS		

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Cooper's Hawk* *Accipiter cooperii*	-	An uncommon, though increasing, breeding resident species in cismontane southern California, with an influx of birds during the winter months. Forages over a broad variety of woodland and shrub communities, especially wherever concentrations of birds (their preferred prey) may be found. Nests within a variety of woodland habitats, such as riparian or oak woodlands, but in recent years has shown a tolerance for developed areas and has begun nesting in suburban and urban "woodlands." ***ASP 8: Occurs within the 500-foot buffer.*** ***VIG 10: Suitable habitat within the proposed staging area 500-foot buffer. Therefore, it is likely to occur within 500-foot buffer.*** ***VIG 11: Suitable habitat within the proposed staging area 500-foot buffer. Therefore, it is likely to occur within 500-foot buffer.*** ***VIG 12: Suitable habitat within the proposed staging area 500-foot buffer. Therefore, it is likely to occur within 500-foot buffer.*** ***VIG 13: Suitable habitat within the proposed staging area 500-foot buffer. Therefore, it is likely to occur within 500-foot buffer.*** ***VIG 14: Suitable habitat within the proposed staging area 500-foot buffer. Therefore, it is likely to occur within 500-foot buffer.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Tricolored Blackbird* *Agelaius tricolor*	SSC BCC	A resident breeder in cismontane southern California. When present, can often occur in large numbers, as a highly colonial species. However, has significantly declined in the region and is becoming somewhat rare and localized. Often more common and widespread in winter. For breeding requires open water, protected nest sites (flooded or spiny/thorny vegetation), and suitable foraging sites within a mile or two of the nesting colony. Dense beds of freshwater emergent vegetation (cattails and/or bulrush) are often used by colonies for nest placement, with foraging occurring in nearby grasslands, agricultural fields, fallow fields, dairies and feedlots. ***ASP 8: Likely to occur within the 500-foot buffer due to presence of riparian and wetland habitats.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Marginal habitat within the 500-foot buffer. Therefore, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Suitable habitat within the proposed staging area and the 500-foot buffer. Therefore, it is likely to occur.***
Southern California Rufous-Crowned Sparrow* *Aimophila ruficeps canescens*	-	A fairly common resident, and breeder, in cismontane southern California. Prefers relatively steep, often rocky hillsides, with dominant vegetation ranging from grasses and forbs, to a moderate shrub cover (including coastal sage scrub or sparse chaparral communities). ***Only proposed staging area VIG 11 provides suitable habitat for this species. Therefore, it is likely to occur within staging area VIG 11 and the 500-foot buffer.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Grasshopper Sparrow* *Ammodramus savannarum*	SSC	An uncommon, very localized summer resident (March through August), and breeder, in cismontane southern California. Declining throughout much of its former range. Nests and forages in areas of relatively expansive grasslands (both native and non-native), including grasslands interspersed with occasional shrubs (e.g., sage scrub species) or taller weeds (e.g., wild artichoke). Can occur on level or sloping terrain; generally found in lower elevations. *Suitable habitat for this species does not occur within the proposed staging areas. Therefore, it does not occur.*
Bell's Sage Sparrow* *Artemisiospiza belli belli*	BCC	An uncommon, localized resident, and breeder, in cismontane southern California. Preferred habitat includes low, dense chaparral (typically chamise dominant) in interior foothills, as well as coastal sage scrub (often with white sage). *Suitable habitat for this species does not occur within the proposed staging areas. Therefore, it does not occur.*
Golden Eagle* *Aquila chrysaetos*	FP BCC	A fairly rare resident, and breeder, in more remote regions of southern California, with generally some influx occurring into the region during winter. Forages over a variety of habitats and terrain, including grasslands, brushlands, and open woodland and savannah. This species is primarily restricted to rugged, mountainous terrain for nesting, and generally well away from human disturbance. ***No nesting habitat occurs within the proposed staging areas; however, suitable foraging habitat may be present at proposed staging areas VIG 10, VIG 11, and to a lesser extent ASP 8, VIG 12 and VIG 14.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Long-eared Owl *Asio otus*	SSC	A fairly rare resident, and very localized breeder, in cismontane southern California, although is somewhat more widespread and common as a winter visitor here. Prefers dense riparian communities (including coast live oak, willows, cottonwoods), or occasionally other types of cover (e.g., dense olive groves) for roosting and nesting. Generally, grasslands or other open habitats for foraging are adjacent to roost/nest sites. *Somewhat suitable habitat occurs within the 500-foot buffer of proposed staging area VIG 14 only. Therefore, it is unlikely to occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Burrowing Owl*	SSC BCC	Now a fairly rare, and decreasing, resident breeder in southern California, away from the Imperial Valley. A small influx of non-breeding birds often occurs during the winter. Prefers open, low-growing grasslands, fallow fields, agricultural areas, earth-lined flood control channels/ditches, and dairies. Relies on the presence of burrowing rodents (especially California ground squirrel) for roost and nest sites.
Athene cunicularia		***ASP 8:*** *Suitable burrows present within the 500-foot buffer. However, no owls were observed during the site visit; Therefore, it is unlikely to occur.* ***VIG 10: Suitable burrows present along the margins of the proposed staging area. Several occurrences documented from the area. Therefore, it is likely to occur.*** ***VIG 11: Suitable burrows present along the margins of the proposed staging area. Several occurrences documented from the area. Therefore, it is likely to occur.*** ***VIG 12:*** *No suitable burrows found within the proposed staging area. Suitable habitat within the 500-foot buffer. Therefore, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to heavy disturbance, surrounding development and lack of suitable burrows.* ***VIG 14:*** *Marginal habitat within the proposed staging area. Surveys during 2015 found no owls within the proposed staging area. Therefore, they are assumed absent.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Ferruginous Hawk* *Buteo regalis*	BCC	A rare to uncommon transient and winter visitor in southern California. Typically requires extensive grasslands, sparsely vegetated rolling hills and agricultural fields for foraging habitat. Roosts in open areas, usually in a lone tree or utility pole. *All proposed staging areas are suitable for winter foraging habitat. However, no nesting habitat is present within the proposed staging areas.*
Swainson's Hawk* *Buteo swainsoni*	ST FSS BCC	A fairly rare, though increasing, spring and fall transient in southern California. Has been extirpated for years (from most of the region as a breeder. Forages over a variety of open habitats, including grasslands, rangeland, agricultural fields, etc. *Does not nest in region. Therefore, does not occur.*
Coastal Cactus Wren *Campylorhynchus brunneicapillus sandiegensis*	SSC BCC	This population of cactus wren is an uncommon and declining, resident breeder along the coastal slope of southern California. It occurs in coastal sage scrub, although requires mature patches of tall prickly pear or cholla cactus for nesting and roosting. *The proposed staging areas are out of the range of the rarer subspecies; therefore, it does not occur.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Western snowy Plover *Charadrius alexandrinus nivosus*	FT SSC	In southern California, an uncommon, declining breeding resident along the immediate coast, and very rare, local breeder in the interior (away from the Salton Sea). In the interior, will opportunistically colonize receding lakeshores, sinks and alkaline lakes, generally where devoid of any significant vegetation. Nests on sandy shorelines, saltflats, etc. *This species is known from two historic collections near Lake Elsinore. Unlikely to occur within buffer of proposed staging areas ASP 8 or VIG 14. Does not occur within all other staging areas.*
Northern Harrier* *Circus cyaneus*	SSC	A generally uncommon winter visitor (Sept. to Apr.) to southern California, with a few non-breeders occasionally remaining through the summer. Now a rare and localized breeder in the region. Forages over a variety of open habitat (e.g., marshes, vegetated shorelines, grasslands, agricultural fields), and occasionally open coastal sage scrub and brushy fields. Nests on the ground in open areas, where patches of taller vegetation are protected from disturbance. ***ASP 8:*** *Potential to occur as a winter visitor. Does not nest on-site.* ***VIG 10:*** *Potential to occur as a winter visitor. Does not nest on-site.* ***VIG 11:*** *Potential to occur as a winter visitor. Unlikely to nest on-site due to marginal habitat, however suitable habitat can be found just north of the buffer area* ***VIG 12:*** *Potential to occur as a winter visitor. Does not nest on-site.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat, surrounding development and heavy disturbance.* ***VIG 14:*** *Potential to occur as a winter visitor. Does not nest on-site.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
White-tailed Kite* *Elanus leucurus*	FP	An uncommon, resident breeder in cismontane southern California. A cyclic species, it has undergone fairly significant population fluctuations, although currently appears to be declining in the region due to habitat loss. Winter roost site concentrations occasionally form during winter. Occurs in a variety of open habitats, foraging over valley and foothill grasslands, meadows, open marshy bottomlands, and agricultural fields; requires scattered large trees or mature riparian groves, for nesting and winter roost sites. *No suitable nesting habitat occurs within the proposed staging areas. Therefore, this species is unlikely to occur.*
California Horned Lark* *Eremophila alpestris actia*	-	In southern California, a fairly common winter visitor, and uncommon, localized summer resident/breeder. Occurs in winter, and as a breeder, in sparse grasslands, large vacant lots, fallow agricultural fields, rangeland, typically on relatively level terrain. ***ASP 8: Suitable habitat present. Therefore, it is likely to occur.*** ***VIG 10:*** *Marginal habitat is present within the proposed staging are. Therefore, it is unlikely to occur.* ***VIG 11.*** *Marginal habitat is present within the proposed staging are. Therefore, it is unlikely to occur.* ***VIG 12: Suitable habitat present. Therefore, it is likely to occur.*** ***VIG 13:*** *Marginal habitat is present within the proposed staging are. Therefore, it is unlikely to occur.* ***VIG 14: Suitable habitat present. Therefore, it is likely to occur.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Bald Eagle*	FD	Occurs primarily as a fairly rare, localized winter visitor to southern California, preferring ocean shore, estuaries, lake margins and riverine habitats. Nesting has recently been documented in southern California mountain lakes (e.g., Lake Hemet). Nests and roosts in large, old growth trees, as well as tall snags, especially where near open water or other open wetland habitats, and available sources of food.
	SE	
Haliaeetus leucocephalus	FP	
		ASP 8: *Likely a winter visitor at Lake Elsinore. Not expected to breed within the proposed staging area.*
		VIG 10: *Does not occur within the proposed staging area due to the lack of suitable habitat.*
		VIG 11: *Does not occur within the proposed staging area due to the lack of suitable habitat.*
		VIG 12: *Does not occur within the proposed staging area due to the lack of suitable habitat.*
		VIG 13: *Does not occur within the proposed staging area due to the lack of suitable habitat.*
		VIG 14: *Likely a winter visitor at Lake Elsinore. Not expected to breed within the proposed staging area.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Yellow-breasted Chat* *Icteria virens*	SSC	Summer resident in southern California (April to August), inhabiting willow riparian thickets and other brushy tangles near water courses. Typically nests in riparian-associated understory vegetation, including young willows, mule fat, blackberry, wild grape, etc. Generally forages and nests within 10ft of the ground. ***ASP 8: Likely to occur adjacent to riparian areas.*** ***VIG 10:*** *Does not occur within the proposed staging area due to the lack of suitable habitat.* ***VIG11:*** *Does not occur within the proposed staging area due to the lack of suitable habitat.* ***VIG 12: Suitable habitat within the 500-foot buffer. Therefore, it is likely to occur.*** ***VIG 13:*** *Does not occur within the proposed staging area due to the lack of suitable habitat.* ***VIG 14: Likely to occur adjacent to riparian areas.***
Loggerhead Shrike* *Lanius ludovicianus*	SSC BCC	A rare to uncommon breeding resident in southern California, with an influx into the region during winter. Prefers open terrain, with short vegetation, including rangeland, agricultural fields, open brushlands, etc. Was once more common and widely distributed in North America. ***Suitable habitat is present within proposed staging area VIG 11. Marginal habitat is found within proposed staging area VIG 10's 500-foot buffer. Therefore, this species is likely to occur only within these two areas.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
White-faced Ibis* *Plegadis chihi*	-	Generally, an uncommon, though increasing, transient and winter visitor to southern California; also occurs as a very local summer resident and breeder. Foraging birds occur in flooded agricultural fields, marshes, flood control ditches, etc.; breeders typically require fairly extensive, and undisturbed, marshes, with cattails, bullrush. ***ASP 8: Likely to occur adjacent to riparian areas.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12:*** *Does not occur due to the lack of suitable habitat.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur adjacent to riparian areas.***
Coastal California Gnatcatcher* *Polioptila californica californica*	FT SSC	An uncommon resident species, and breeder, in cismontane southern California from southeastern Ventura County to western San Diego County. Restricted to Riversidean, Diegan and Venturan sage scrub communities, in arid washes, mesas, and on mild to moderate slopes. Habitat typically dominated or co-dominated by California sagebrush, California buckwheat, and brittlebush. Most populations occur below 1,500' elevation. Breeding typically occurs between March and August. ***Only the proposed staging area VIG 11 provides suitable habitat for this species. The species has been observed in the area; therefore, it is likely to occur.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Least Bell's Vireo *Vireo bellii pusillus*	FE SE BCC	A fairly rare to locally uncommon summer resident (late March to early Sept.), and breeder, in southern California in relatively low elevation riparian floodplain habitat. Prefers willow riparian communities, which may be in the vicinity of water or along dry river bottoms. Nesting habitat generally includes a well-developed understory, which is necessary for nest concealment. Nests usually placed in *Baccharis* or young willows adjacent to, or in openings within, the riparian community. ***ASP 8: Likely to occur within the 500-foot buffer. This species has been documented in the area.*** ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11:*** *Does not occur due to the lack of suitable habitat.* ***VIG 12: Likely to occur within the 500-foot buffer. This species has been documented in the area.*** ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14: Likely to occur within the 500-foot buffer. This species has been documented in the area.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
MAMMALS		
Dulzura Pocket Mouse *Chaetodipus californicus femoralis*	SSC	Only known to occur from extreme southwestern Riverside County south through western and central San Diego County, and into Baja California. Found from sea level to 4,600' elevation. Preferred habitat includes chaparral, coastal sage scrub and, especially, shrub/grassland ecotones. ***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11: Suitable habitat present. Therefore, it is likely to occur.*** ***VIG 12:*** *Marginal habitat present. However, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Northwestern San Diego Pocket Mouse* *Chaetodipus fallax fallax*	SSC	Occurs on the coast slope of southern California from Los Angeles and San Bernardino counties south to San Diego County. It inhabits coastal sage scrub, scrub/grassland ecotones and chaparral communities, often in rocky area. ***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11: Suitable habitat present. Therefore, it is likely to occur.*** ***VIG 12:*** *Marginal habitat present. However, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Stephen's Kangaroo Rat*	FE	This species has a small range limited to western Riverside County and north-western and north-central San Diego County. Restricted to annual grassland and open Riversidean sage scrub with a shrub cover of less than 30%. Prefers loose, friable, well-drained soil (generally at least 1.5' deep) and flat or gently rolling terrain. This species may recolonize abandoned agricultural land. It is most abundant where stands of native vegetation remain.
	ST	
Dipodomys stephensi		***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11: Suitable habitat present. Therefore, it is likely to occur.*** ***VIG 12:*** *Marginal habitat present. However, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Western Mastiff Bat *Eumops perotis californicus*	SSC	An uncommon bat that inhabits arid and semi-arid lowlands in southern California, including deciduous and coniferous woodlands, coastal sage scrub, chaparral, grasslands. Is known to be active year-round. They primarily roost in crevices in vertical cliffs and rock faces; occasionally found roosting in high buildings, trees and tunnels, though needs vertical faces to drop from in order to take flight. ***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11: Suitable roosting habitat present. Therefore, it is likely to occur.*** ***VIG 12:*** *Marginal habitat present. However, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*
Western Yellow Bat *Lasiurus xanthinus*	SSC	An uncommon species in California restricted primarily to the southern counties of Riverside, San Diego and Imperial. It has been recorded in valley foothill riparian, desert riparian, and palm oasis communities. Considered to be migratory, and is only known to be present in California during spring, summer and fall. Roosts in trees, and appears to especially favor palms. ***Suitable roosting habitat found only in the 500-foot buffer of proposed staging area VIG 14. Therefore, it is likely to occur only in this area.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
San Diego Black-tailed Jackrabbit* *Lepus californicus bennettii*	SSC	Occurs west of the mountains in southern California, from Ventura to San Diego counties. A generalist that prefers a variety of open and semi-open habitats including grasslands, agricultural fields, sparse coastal sage scrub, open alluvial washes. Typically avoids dense chaparral and woodland habitats. ***ASP 8:*** *Does not occur due to the lack of suitable habitat.* ***VIG 10:*** *Does not occur due to the lack of suitable habitat.* ***VIG 11: Suitable habitat present. Therefore, it is likely to occur.*** ***VIG 12:*** *Marginal habitat present. However, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to the lack of suitable habitat.* ***VIG 14:*** *Does not occur due to the lack of suitable habitat.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
Yuma myotis *Myotis yumanensis*	-	Found in lower montane coniferous forest, riparian forest, riparian woodland and upper montane coniferous forest. Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices. ***ASP 8: Suitable habitat within the 500-foot buffer. Therefore, it is likely to occur.*** ***VIG 10:*** *Does not occur due to the lack of suitable foraging and roosting habitat.* ***VIG 11: No foraging habitat; however, suitable roosting sites available within the proposed staging area. Therefore, it is likely to occur.*** ***VIG 12:*** *Does not occur due to marginal foraging habitat and lack of roost sites.* ***VIG 13:*** *Does not occur due to the lack of suitable foraging and roosting habitat.* ***VIG 14: Suitable habitat within the 500-foot buffer. Therefore, it is likely to occur.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
San Diego Desert Woodrat* *Neotoma lepida intermedia*	SSC	Occurs in coastal California from San Luis Obispo County south through the Transverse and Peninsular ranges into Baja California. Occurs in a variety of habitats and elevations. Prefers pinyon juniper woodland, chaparral and sage scrub communities, and most desert habitats. Most abundant in rocky outcrops and on rocky slopes, building their stick nests typically in cracks within boulder piles. ***ASP 8:*** *Suitable habitat within the 500-foot buffer, but not observed. Therefore, it is unlikely to occur.* ***VIG 10:*** *Does not occur due to lack of suitable habitat.* ***VIG 11: Suitable habitat within the proposed staging area. Therefore, it is likely to occur.*** ***VIG 12:*** *Suitable habitat within the 500-foot buffer, but not observed. Therefore, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to lack of suitable habitat.* ***VIG 14:*** *Suitable habitat within the 500-foot buffer, but not observed. Therefore, it is unlikely to occur.*
Pocketed Free Tail Bat *Nyctinomops femorosaccus*	SSC	Has been found in southern California in Riverside, San Diego and Imperial counties, though records are few. Occurs in a variety of arid habitats, mostly in desert regions, such as pinyon juniper woodland, desert scrub, palm oasis, desert washes and riparian. Prefers rocky areas with high cliffs. ***Although all of the proposed staging areas may be used occasionally for foraging, only proposed staging area VIG 11 provides somewhat suitable habitat for roosting. Therefore, it is likely to occur within proposed staging area VIG 11.***

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION *POTENTIAL FOR OCCURRENCE*
southern grasshopper mouse *Onychomys torridus ramona*	SSC	Chenopod scrub. Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions & orthopteran insects. ***ASP 8:*** *Marginal habitat within the proposed staging area. However, it is unlikely to occur.* ***VIG 10:*** *Does not occur due to lack of suitable habitat.* ***VIG 11:*** *Marginal habitat within the proposed staging area. However, it is unlikely to occur.* ***VIG 12:*** *Marginal habitat within the proposed staging area. However, it is unlikely to occur.* ***VIG 13:*** *Does not occur due to lack of suitable habitat.* ***VIG 14:*** *Suitable habitat within the proposed staging area; however, there are no reported occurrences in this area. Therefore, it is unlikely to occur.*
Los Angeles Pocket Mouse* *Perognathus longimembris brevinasus*	SSC	Ranges, historically, from Los Angeles and San Bernardino counties south to portions of western Riverside County. Occurs in relatively arid, lower elevations with fine, sandy soils, typically in grassland or coastal sage scrub habitats. ***Somewhat suitable habitat for this species occurs within the 500-foot buffer of proposed staging area VIG 11. Therefore, it is likely to occur.*** *It is unlikely to occur within any other staging area.*

COMMON AND SCIENTIFIC NAMES	SENSITIVITY STATUS	PREFERRED HABITAT, SEASONAL STATUS AND DISTRIBUTION ***POTENTIAL FOR OCCURRENCE***
Jacumba pocket mouse *Perognathus longimembris internationalis*	SSC	Found in desert riparian, desert scrub, desert wash, coastal scrub & sagebrush. Rarely found on rocky sites, uses all canopy coverage. *This species has not been reported within the region of the proposed staging areas and is unlikely to occur.*
American Badger *Taxidea taxus*	SSC	Badgers are an uncommon throughout southern California. They are generally associated with dry, open, treeless regions, including grasslands, rangeland and high deserts. In southern California they have been found in grassy openings within coastal sage scrub. The badger's altitudinal range extends from below sea level to over 12,000 feet. ***ASP 8:*** *Does not occur due to the lack of habitat and adjacent development.* ***VIG 10:*** *Unlikely to occur due to disturbance.* ***VIG 11:*** *Suitable habitat on-site. Few recorded occurrences. However, it is unlikely to occur within the proposed staging area due to nearby development pressure.* ***VIG 12:*** *Does not occur due to the lack of habitat and adjacent development.* ***VIG 13:*** *Does not occur due to the lack of habitat and adjacent development.* ***VIG 14:*** *Does not occur due to the lack of habitat and adjacent development.*

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APPENDIX C

PLANT AND WILDLIFE COMPENDIUM

C1 Plant Compendium

C2 Wildlife Compendium

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Appendix C1
Plant Compendium

The following is a list of plant species detected during the Habitat and Resource Assessment Survey for the Alberhill System and Valley-Ivyglen Phase 2 additional proposed staging areas.

Family and Common Name	Scientific Name
Azollaceae	**Mosquito Fern Family**
Duckweed fern	*Azolla filiculoides*
Pinaceae	**Pine Family**
Aleppo pine	**Pinus halepensis*
Amaranthaceae	**Amaranth Family**
Tumbling pigweed	**Amaranthus albus*
Anacardiaceae	**Sumac or Cashew Family**
Peruvian pepper tree	**Schinus molle*
Apocynaceae	**Dogbane Family**
Oleander	**Nerium oleander*
Asteraceae	**Sunflower Family**
Western ragweed	*Ambrosia psilostachya*
California sagebrush	*Artemisia californica*
Mulefat	*Baccharis salicifolia*
Tocalote	**Centaurea melitensis*
Smooth tarplant	*§Centromadia pungens var. laevis*
White pincushion	*Chaenactis sp.*
California aster	*Corethrogyne filaginifolia*
Australian brass-buttons	**Cotula australis*
Brittlebush	*Encelia farinosa*
Canadian horseweed	*Erigeron canadesis*
Palmer's goldenbush	*Ericameria palmeri*
Common sunflower	*Helianthus annuus*
Tarweed	*Deinandra sp.*
San Diego tarweed	*Deinandra paniculata*
Telegraph weed	*Heterotheca grandiflora*
Prickly lettuce	**Lactuca serriola*
Scale-broom	*Lepidospartum squamatum*
California fluffweed	*Logfia filaginoides*
Malcothrix	*Malacothrix sp.*
Woolly marbles	*Psilocarphus brevissimus*
Small wreathplant	*Stephanomeria exigua*
Cocklebur	*Xanthium strumarium*
Boraginaceae	**Borage Family**
Saltmarsh heliotrope	*Heliotropum curassivicum*
Slender pectocarya	*Pectocarya linearis ssp. ferocula*
Popcorn flower	*Plagiobothrys sp.*

Family and Common Name	Scientific Name
Brassicaceae	**Mustard Family**
Mustard	*Brassica sp.*
Black mustard	**Brassica nigra*
Shining peppergrass	*Lepidium nitidum*
London rocket	**Sisymbrium irio*
Oriental mustard	**Sisymbrium orientale*
Cactaceae	**Cactus Family**
Valley cholla	*Cylindrpuntia parryi*
Chenopodiaceae	**Goosefoot Family**
Serenana saltbush	*Atriplex serenana var. serenana*
Five-hooked bassia	**Bassia hyssopifolia*
Russian thistle	**Salsola tragus*
Convolvulaceae	**Morning-Glory Family**
Alkali weed	*Cressa truxillensis*
Euphorbiaceae	**Spurge Family**
Rattlesnake weed	*Chamaesyce albomarginata*
Spotted spurge	**Chamaesyce maculata*
Dove weed	*Eremocarpus setigerus*
Fabaceae	**Legume Family**
Deerweed	*Acmipson glaber*
White sweetclover	**Melilotus alba*
Mesquite	*Prosopis glandulosa*
Geraniaceae	**Geranium Family**
Filaree	*Erodium sp.*
Lamiaceae	**Mint Family**
Horehound	**Marrubium vulgare*
White sage	*Salvia apiana*
Vinegar weed	*Trichostema lanceolatum*
Malvaceae	**Mallow Family**
Bushmallow	*Malacothamnus sp.*
Cheeseweed	**Malva parviflora*
Alkali-mallow	*Malvella leprosa*
Myrtaceae	**Myrtle Family**
Gum tree	**Eucalyptus sp.*
Nyctaginaceae	**Four O'Clock Family**
California wishbone bush	*Mirabilis californica*
Plantaginaceae	**Plantain Family**
English plantain	**Plantago lanceolata*
Polygonaceae	**Buckwheat Family**

Family and Common Name	Scientific Name
Turkish rugging	*Chorizanthe staticoides*
California buckwheat	*Eriogonum fasciculatum*
Thurber buckwheat	*Eriogonum thurberi*
Prostrate knotweed	**Polygonum aviculare*
Curly dock	**Rumex crispus*
Portulacaceae	**Purslane Family**
Common purslane	**Portulaca oleracea*
Salicaceae	**Willow Family**
Willow species	*Salix sp.*
Arroyo willow	*Salix lasiolepis*
Solanaceae	**Nightshade Family**
Jimson weed	*Datura wrightii*
Coyote tobacco	*Nicotiana attenuata*
Tamaricaceae	**Tamarisk Family**
Tamarisk	**Tamarix sp.*
Zygophyllaceae	**Caltrop Family**
Puncture vine	**Tribulus terrestris*
Angiosperms (Monocotyledons)	
Cyperaceae	**Sedge Family**
Sedge	*Carex sp.*
Hard-stemmed bulrush	*Schoenoplectus acutus var. occidentalis*
Poaceae	**Grass Family**
Unknown brome	*Bromus sp.*
Bermuda grass	**Cynodon dactylon*
Saltgrass	*Distichlis spicata*
Glaucous foxtail barley	**Hordeum murinum*
Mediterranean schismus	**Schismus barbatus*
Typhaceae	**Cattail Family**
Cattail	*Typha sp.*

* Indicates non-native species

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Appendix C2
SPECIES LIST

The following is a list of wildlife species detected during the Habitat and Resource Assessment Survey for the Alberhill System and Valley-Ivyglen Phase 2 additional proposed staging areas.

Family and Common Name	Scientific Name
MAMMALS	
Canidae (Wolves and Foxes)	
Domestic dog Coyote	**Canis familiaris* *Canis latrans*
Geomyidae (Gophers)	
Botta's pocket gopher	*Thomomys bottae*
Leporidae (Rabbits and Hares)	
Audubon's cottontail	*Sylvilagus audubonii*
Sciuridae (Squirrels, Chipmunks and allies)	
California ground squirrel	*Spermophilus beecheyi*
BIRDS	
Accipitridae (Hawks, Kites, Eagles and allies)	
Cooper's hawk Red-tailed hawk	*§ Accipiter cooperii* *Buteo jamaicensis*
Anatidae (Swans, Geese and Ducks)	
Mallard	*Anas platyrhynchos*
Ardeidae (Herons and Bitterns)	
Great blue heron Snowy egret	*Ardea herodias* *Egretta thula*
Cathartidae (New World Vultures)	
Turkey vulture	*Cathartes aura*
Charadriidae (Plovers)	
Killdeer	*Charadrius vociferus*
Columbidae (Pigeons and Doves)	
Rock pigeon Eurasian collared dove Mourning dove	**Columba livia* **Streptopelia decaotor* *Zenaida macroura*
Corvidae (Ravens, Crows, Jays and allies)	
American crow Common raven	*Corvus brachyrhynchos* *Corvus corax*
Emberizidae (Sparrows and allies)	
California towhee	*Melozone crissalis*

Family and Common Name	Scientific Name
Falconidae (Caracaras and Falcons)	
American kestrel	*Falco sparverius*
Fringillidae (Finches)	
House finch Lesser goldfinch	*Haemorphous mexicanus* *Spinus psaltria*
Icteridae (Blackbirds, Orioles and Allies)	
Red-winged blackbird Brewer's blackbird	*Agelaius phoeniceus* *Euphagus cyanocephalus*
Laridae (Gulls, Terns and Skimmers)	
Ring-billed gull	*Larus delawarensis*
Mimidae (Mockingbirds and Thrashers)	
Northern mockingbird California thrasher	*Mimus polyglottos* *Toxostoma redivivum*
Sturnidae (Starlings)	
European starling	**Sturnus vulgaris*
Trochilidae (Hummingbirds)	
Anna's hummingbird	*Calypte anna*
Tyrannidae (Tyrant Flycatchers)	
Black phoebe	*Sayornis nigricans*

Family and Common Name	Scientific Name
REPTILES	
Iguanidae (Iguanids)	
Western fence lizard Side-blotched lizard	*Sceloporus occidentalis* *Uta stansburiana*
INVERTEBRATES	
Acrididae (Short-horned Grasshoppers)	
Yellow pallid band-wing	*Trimerrotropis rebellis*
Apidae (Honey Bees and Bumble Bees)	
Honey bee	*Apis mellifera*
Asilidae (Robber Flies)	
Robber fly	*Efferia albibarbis*
Coenagrionidae (Common Damselflies)	
Blue dancer	*Argia sp.*
Formicidae (Ants)	
Harvester ant	*Pogonomyrmex californicus*
Hesperiidae (Skippers)	
Fiery skipper	*Hylephila phyleus*
Libellulidae (Skimmers)	
Meadowhawk	*Sympetrum sp.*
Lycaenidae (Blues and Hairstreaks)	
Pygmy blue Gray hairstreak	*Brephidium exilis* *Strymon melinus*
Nymphalidae (Brush-Footed Butterflies)	
Painted lady	*Vanessa cardui*
Pieridae (Whites, Sulphurs, and Orangetips)	
Alfalfa butterfly	*Colias eurytheme*
Riodinidae (Metalmarks)	
Behr's metalmark	*Apodemia mormo virgulti*
Tenebrionidae (Darkling Beetles)	
Stink beetle	*Eleodes acuticauda*

§ Indicates Sensitive Species
*Indicates non-native species

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APPENDIX D

VEGETATION/LAND COVER, POTENTIAL JURISDICTIONAL/WETLAND FEATURES, INCIDENTAL PLANT AND WILDLIFE OBSERVATIONS, AND PHOTO COMPENDIUM

D1 Vegetation/Land Cover Figures D-1 Through D-5

D2 Rapid Assessment Forms

D3 Potential Jurisdictional/Wetland Features, Incidental Plant and Wildlife Observations Figures D-6 Through D-10

D4 Photo Compendium

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Appendix D1
Vegetation/Land Cover Figures D-1 Through D-5

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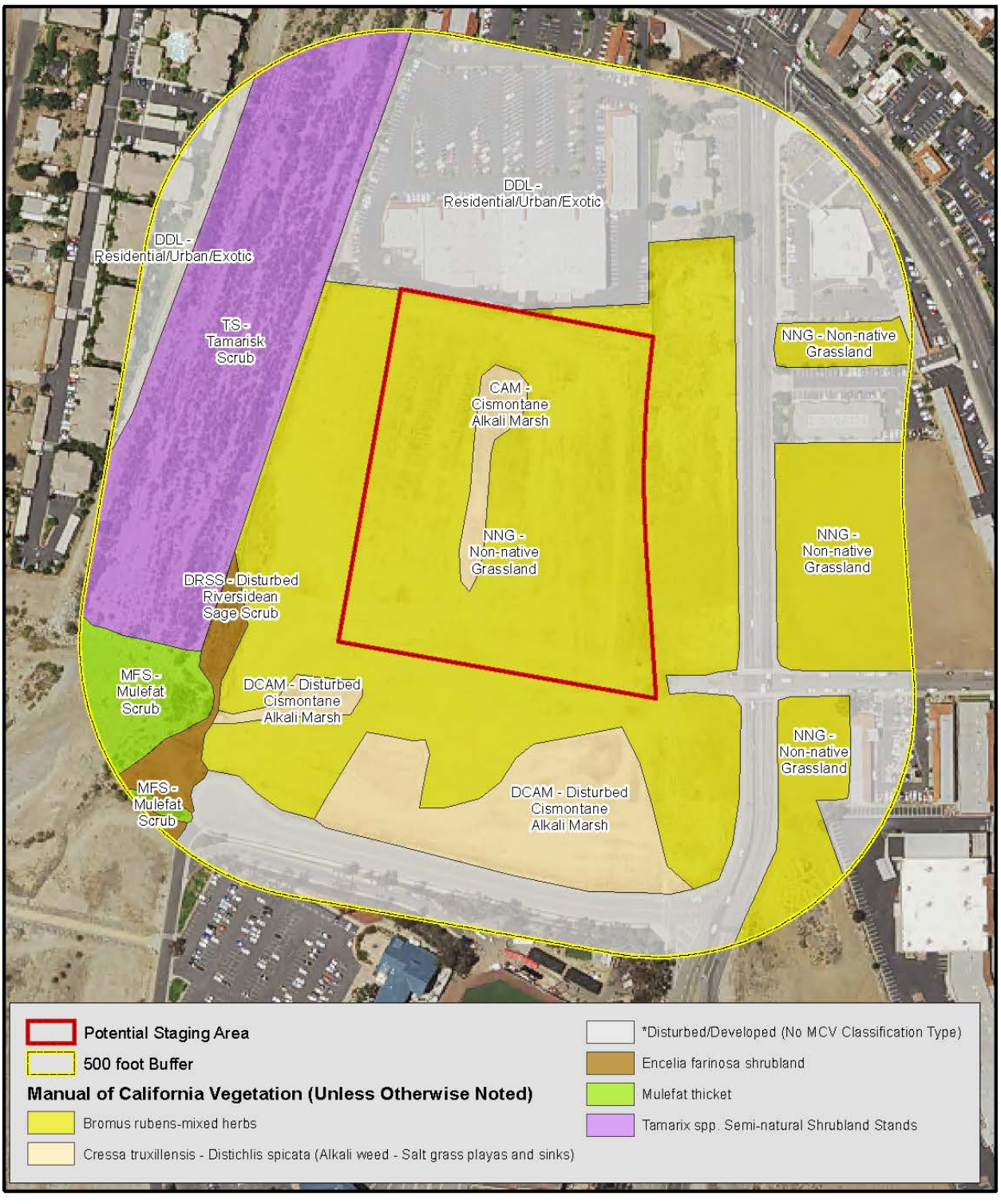
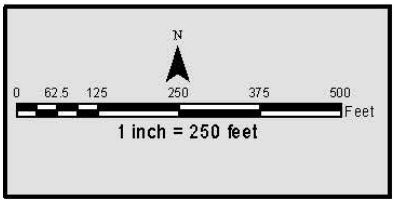


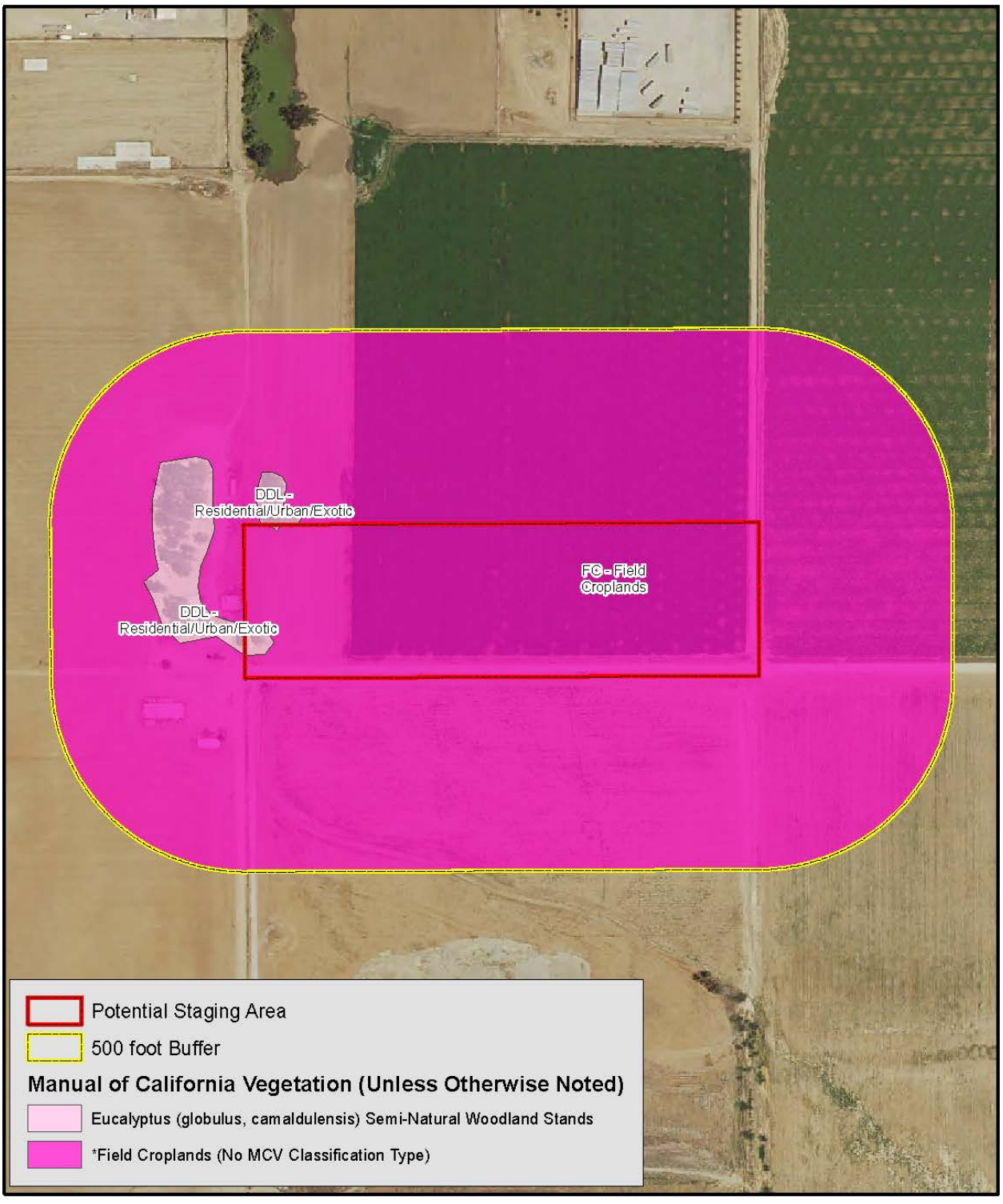


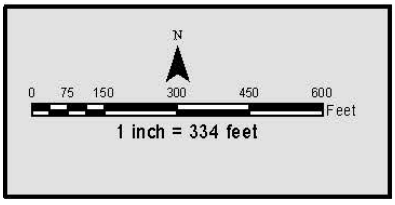
DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Yards

HOLLAND/MSHCP VEGETATION CLASSIFICATIONS ARE LABELED ON THE FIGURE

FIGURE D-1
ASP Site 8
Vegetation/Land Covers Map

Kidd BIOLOGICAL INC.



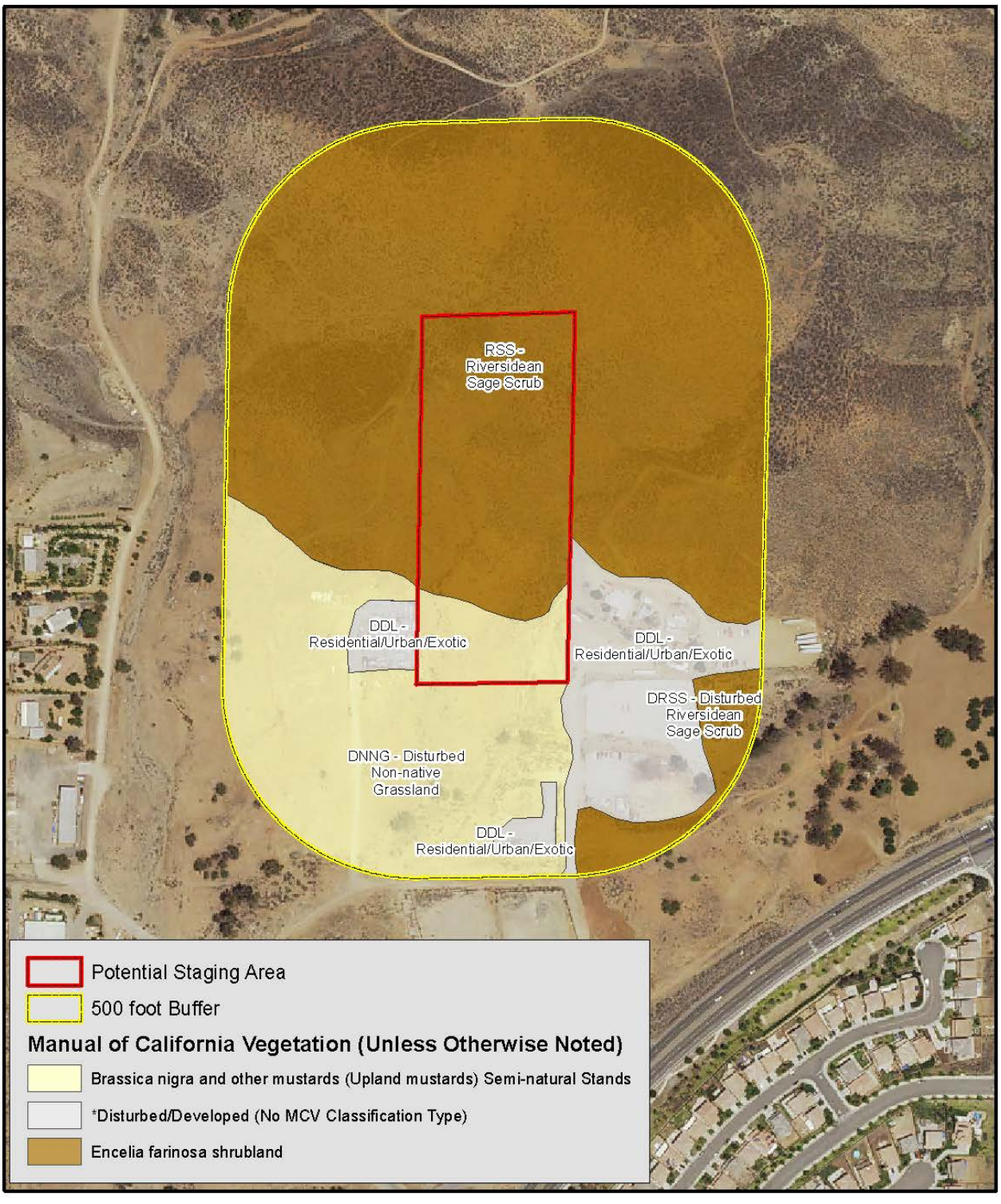


DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas

HOLLAND/MSHCP VEGETATION CLASSIFICATIONS ARE LABELED ON THE FIGURE

FIGURE D-2
VIG Site 10
Vegetation/Land Covers Map

Kidd BIOLOGICAL INC.



N

0 75 150 300 450 600 Feet

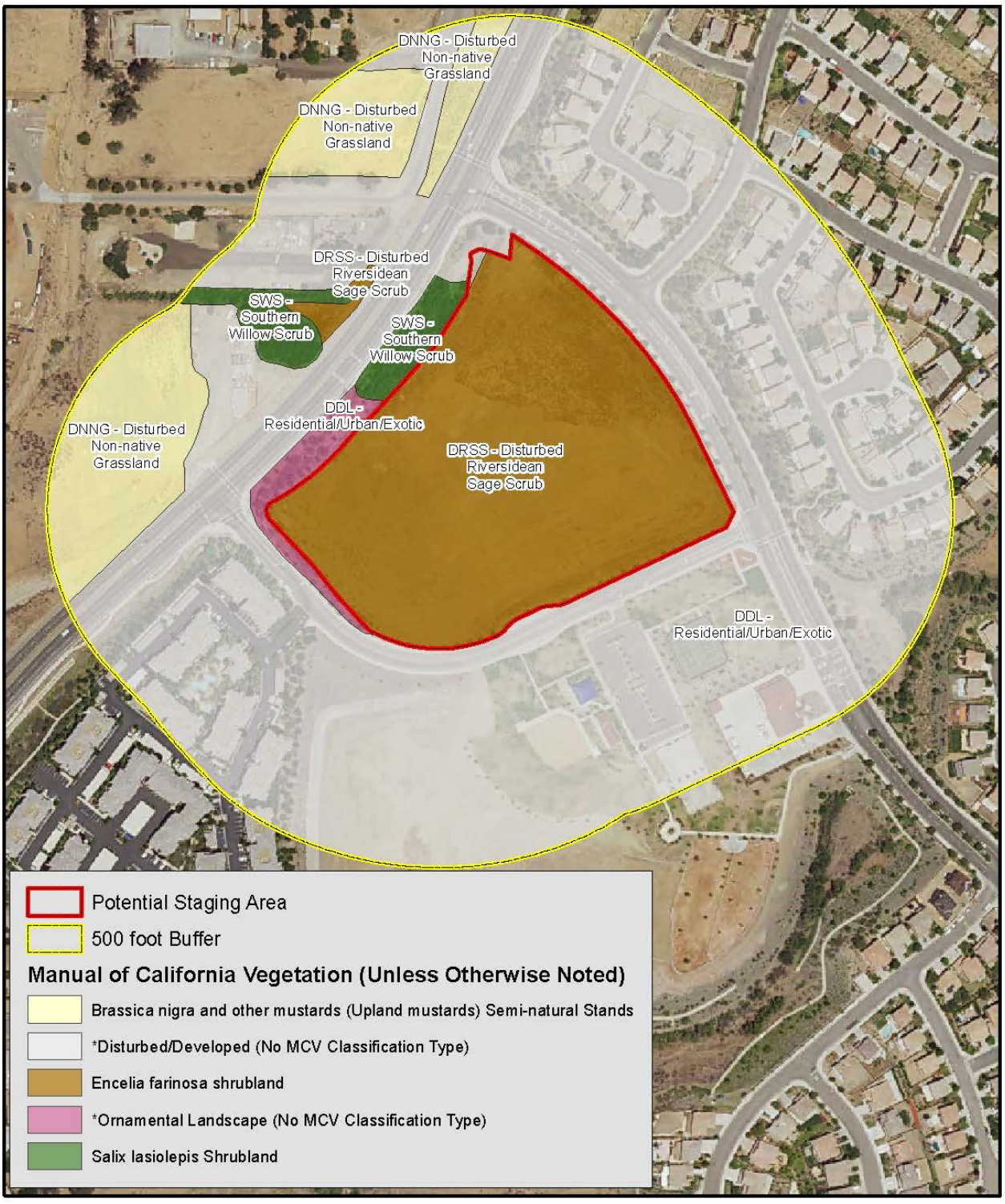
1 inch = 333 feet

DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas

HOLLAND/MSHCP VEGETATION CLASSIFICATIONS ARE LABELED ON THE FIGURE

FIGURE D-3
VIG Site 11
Vegetation/Land Covers Map

Kidd BIOLOGICAL INC.



N

0 75 150 300 450 600 Feet

1 inch = 296 feet

DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Area

HOLLAND/MSHCP VEGETATION CLASSIFICATIONS ARE LABELED ON THE FIGURE

FIGURE D-4
VIG Site 12
Vegetation/Land Covers Map

Kidd BIOLOGICAL INC.

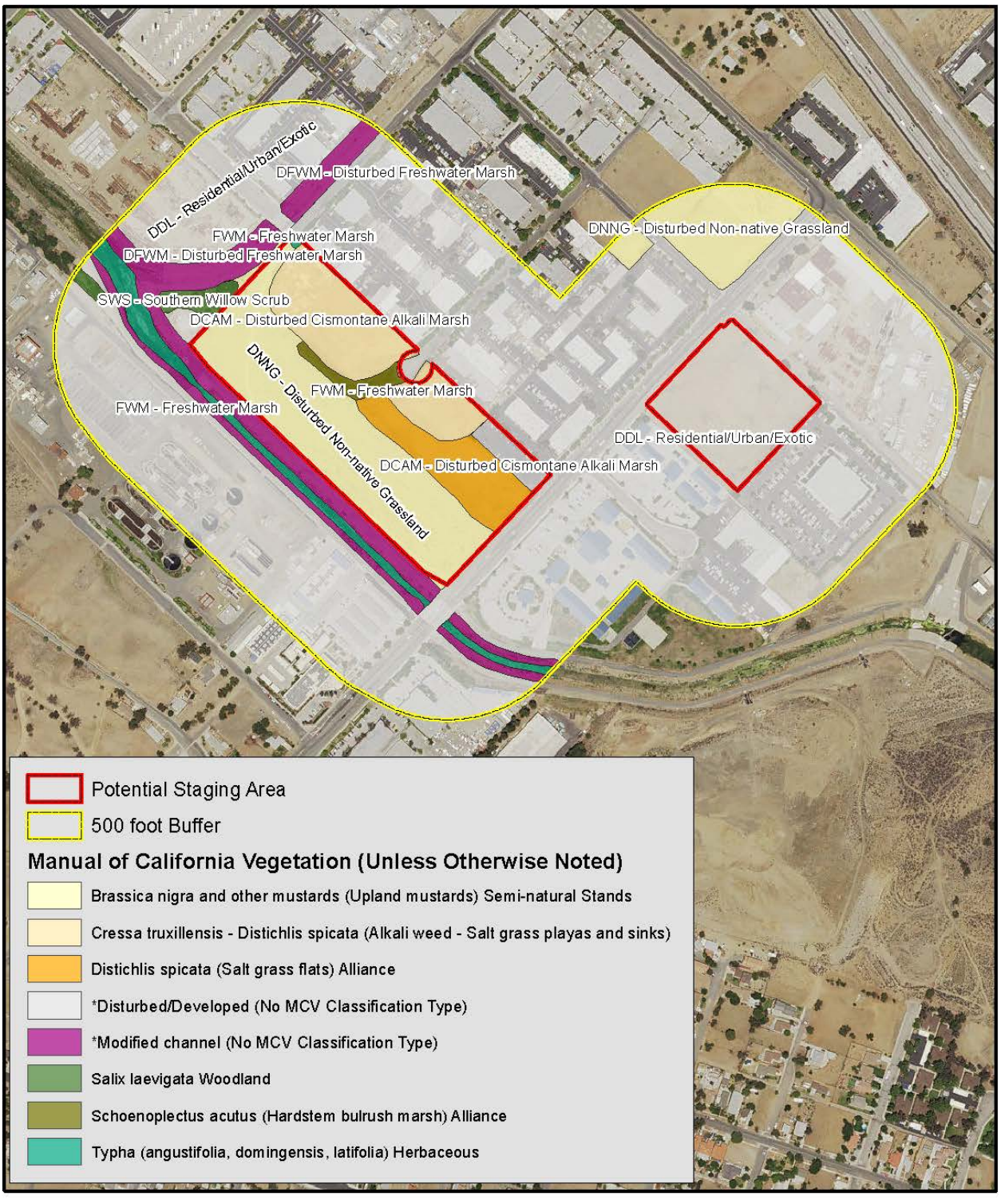


FIGURE D-5
VIG Sites 13 & 14
Vegetation/Land Covers Map

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Appendix D2
Rapid Assessment Forms

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CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #: VGLE7

Final vegetation type: **Alliance** _____
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VGLE7 **Date:** 9/10/15 **Name of recorder:** N. Ladd

Other surveyors: C. Jackson

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 479755 **UTMN** 3704268 **Zone: 10 / 11** (circle one) **Error: ±** 4 **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 125 ft / m **Camera Name/Photograph #'s:** 2100-2106

Stand Size (acres): **<1, 1-5, >5** | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x___ ft / m **or Circle Radius**____ft / m

Exposure, Actual °: _____ **NE NW SE SW Flat Variable All** | **Steepness, Actual °:** _____ **0° 1-5° 5-25° > 25**

Topography: Macro: top upper mid lower bottom | **Micro: convex flat concave undulating**

Geology code: _____ **Soil Texture code:** _____ | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 2 **Litter:** 20 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 0 **Fines:** 78 **=100%**

% Current year bioturbation <1% **Past bioturbation present? Yes / No** | **% Hoof punch** _____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbance code / Intensity (L,M,H): ____/___ ____/___ ____/___ ____/___ ____/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 3 **% Vasc Veg cover:** 25

% Cover: Conifer tree / Hardwood tree: ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** 25

Height Class: Conifer tree / Hardwood tree: ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
	✓Salsola	20			Chase weed	+	
	✓Erodium *	5			Helianthus		
	✓Lepidium N.	+			Heliotrope		
	✓Rattlesnake weed	T			Ambrosia	+	
	✓Dove weed	T			Arundo	+	
	✓Tamarix	T			✓Vinegar weed		

Unusual species:

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: _____

Field-assessed association name (optional): Red Brome - Med grassland.

Adjacent alliances/direction: _____/_____, 42.024.00 /_____

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): **Herb Shrub Tree** **Other identification or mapping information:**

V168

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

V16 E6

For Office Use Final database #:	Final vegetation type: Alliance Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID:	Date: 9	Name of recorder: Other surveyors:

GPS name: _____ Datum: NAD83 or _____ For Relevé: Bearing°, left axis at SW point_____ of Long / Short side

UTME 4 T2 013 UTMN 3 72 928 5 Zone: 10 / 11 (circle one) Error: ± 100 ft / m / pdop

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____

and record projected UTMs: UTME _____ UTMN _____

Elevation: 130 ft / m Camera Name/Photograph #'s: Canon 259-262 TN

Stand Size (acres): <1, 1-5, >5 | Plot Size (m^2): 10 / 100 / 400 / 1000 | Plot Shape ___ x ___ ft / m or Circle Radius ____ ft / m

Exposure, Actual °: 0 NE NW SE SW Flat Variable All | Steepness, Actual °: 0 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating

Geology code: _____ Soil Texture code: MFSA | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 7 BA Stems: 2 Litter: 10 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 0 Gravel: 2 Fines: 79 =100%

% Current year bioturbation 1 Past bioturbation present? Yes / No | % Hoof punch _____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbance code / Intensity (L,M,H): ___/___ ___/___ ___/___ ___/___ ___/___ "Other" _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:**_____

% Cover: **Conifer tree / Hardwood tree:** _____/_____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____

Height Class: **Conifer tree / Hardwood tree:** _____/_____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Salsola tragus	20		H	Bromus sp.	T	
H	Crassula	20	✓		Vinegar Weed	T	
H	Woolly Marbles	7			Devil's-thorn	1	
H	Amaranthus / Chenop.	5	✓				
H	Paniculate Tarplant	T			Bare Ground		
H	Centromadia pungens	1					
	Other herb (Wire mtn Plagiobothrys)		✓		crassula solitari pygmyweed.		

Unusual species:

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Alkaliweed Saltgrass Playa & Sink

Field-assessed association name (optional): 46.100.00

Adjacent alliances/direction: we classified b/c presence _____/_____

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb Shrub Tree Other identification or mapping information:

Vernal pool

Cressa Photo 267

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association _____

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: ASP8(C) **Date:** 9/17 **Name of recorder:** N. Kido

Other surveyors:

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 471807 **UTMN** 3724148 **Zone: 10 / 11** (circle one) **Error: ±** 3 **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1252 ft / m **Camera Name/Photograph #'s:** Nina's iPhone

Stand Size (acres): <1, 1-5, >5 **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius**____ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: GRAL **Soil Texture code:** COSA | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 2 **Litter:** 5 **Bedrock:** 0 **Boulder:** 10 **Stone:** 10 **Cobble:** 5 **Gravel:** 10 **Fines:** 58 =100%

% Current year bioturbation 0 **Past bioturbation present? Yes / No** | **% Hoof punch** _____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbance code / Intensity (L,M,H): 5/H ___/___ 32/H ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 40

% Cover: Conifer tree / Hardwood tree: 0/0 **Regenerating Tree:** 20 **Shrub:** 15 **Herbaceous:** 55

Height Class: Conifer tree / Hardwood tree: ___/___ **Regenerating Tree:** 4 **Shrub:** 2 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
A	Tamarix	20					
S	Mulefat	10					
A	Salix lavigata	+					
H	Artemisia douglasiana	5					
T	Tree tobacco	+					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Tamarisk stand

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M H **Explain:** 10 tamarisk

Phenology (E,P,L): **Herb** L **Shrub** L **Tree** E **Other identification or mapping information:**

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: ASP 8 (d) **Date:** 9/17

Name of recorder: N. Kidd

Other surveyors:

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 4 7 1 8 0 4 **UTMN** 3 7 2 4 1 2 8 **Zone: 10 / 11** (circle one) **Error: ±** 1 (0) **ft / m / pdop**

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1245 ft / m **Camera Name/Photograph #'s:** iPhone

Stand Size (acres): (<1,) 1-5, >5 | **Plot Size** (m^2)**:** 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ____ ft / m

Exposure, Actual °: _____ NE NW SE (SW) Flat Variable All | **Steepness, Actual °:** _____ 0° (1-5°) 5-25° > 25

Topography: Macro: top upper mid lower (bottom) | **Micro:** convex flat (concave) undulating

Geology code: Grad **Soil Texture code:** Cosa | **Upland** or (**Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 2 **Litter:** 5 **Bedrock:** 0 **Boulder:** 20 **Stone:** 10 **Cobble:** 10 **Gravel:** 10 **Fines:** 43 **=100%**

% Current year bioturbation 0 **Past bioturbation present?** Yes / (No) | **% Hoof punch** 0

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Rip rap

Disturbance code / Intensity (L,M,H): 32/H ___/___ 2/M ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), (**S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 15

% Cover: Conifer tree / Hardwood tree: ____/0 **Regenerating Tree:** 0 **Shrub:** 10 **Herbaceous:** 5

Height Class: Conifer tree / Hardwood tree: ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** ____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Mulefat	10					
S	Ericameria parryi	+					
H	Smooth tar plant	+					
H	Mustard	+					
H	Russian thistle	+					
H	Tocolote	+					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Mulefat Scrub

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M (H) **Explain:** _____

Phenology (E,P,L): **Herb** L **Shrub** L **Tree** N/A **Other identification or mapping information:**

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: **Alliance** _____
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: ASP 8 (e) **Date:** 9/17 **Name of recorder:** N Kidd
Other surveyors:

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME ___ ___ ___ ___ ___ ___ **UTMN** ___ ___ ___ ___ ___ ___ ___ **Zone: 10 / 11** (circle one) **Error: ±**_____ **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME ___ ___ ___ ___ ___ ___ UTMN ___ ___ ___ ___ ___ ___

Elevation: 1218 ft / m **Camera Name/Photograph #'s:** iPhone

Stand Size (acres): <1, 1-5, >5 | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius**____ft / m

Exposure, Actual °: _____ **NE NW SE SW Flat Variable All** | **Steepness, Actual °:** _____ **0° 1-5° 5-25° > 25**

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating
Geology code: _____ **Soil Texture code:** _____ | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H20: 0 **BA Stems:** 2 **Litter:** 10 **Bedrock:** 0 **Boulder:** 20 **Stone:** 10 **Cobble:** 5 **Gravel:** 10 **Fines:** 43 **=100%**

% Current year bioturbation 1 **Past bioturbation present? Yes / No** | **% Hoof punch** 0
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbance code / Intensity (L,M,H): 2/M ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)
Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)
Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 2 **% Vasc Veg cover:** 20
% Cover: Conifer tree / Hardwood tree: ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____
Height Class: Conifer tree / Hardwood tree: ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____
Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Encelia	7		N	unknown cryptogram	2	
S	Ericameria parryi	5					
S	Mulefat	1					
H	Smooth tarplant	1					
H	Cotton Rose	+					
S	buckwheat	3					
H	Brassica nigra	2					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: ~~Encelia~~ Encelia farinosa
Field-assessed association name (optional): _____
Adjacent alliances/direction: _____/_____, _____/_____
Confidence in alliance identification: L M H Explain: 1° Encelia
Phenology (E,P,L): **Herb Shrub Tree** **Other identification or mapping information:**

VIG 10

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 10, 2014)

For Office Use
Final database #:

Final vegetation type: **Alliance** _____
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIGLE10 **Date:** 9/16/15

Name of recorder: C DICKSON
Other surveyors: N. KICK

GPS name: NINA **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side

UTME 485002 **UTMN** 3732100 **Zone: 10 / 11** (circle one) **Error: ±** 2 **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1446 ft / m **Camera Name/Photograph #'s:** Cannon (N) 284-287

Stand Size (acres): <1, 1-5, >5 **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ____ ft / m

Exposure, Actual °: ____ NE NW SE SW Flat Variable | **Steepness, Actual °:** _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: _____ **Soil Texture code:** _____ | Upland or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** <1 **Litter:** | **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 0 **Fines:** 99 =100%

% Current year bioturbation 21 **Past bioturbation present?** Yes / No | **% Hoof punch** 0

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Fallow agriculture - regularly disked

Burrows in qu# 172-

Disturbance code / Intensity (L,M,H): 03 / H ___/___ ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 2

% Cover: **Conifer tree / Hardwood tree:** 0 / 100 **Regenerating Tree:** 0 **Shrub:** 0 **Herbaceous:** 1

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** 6 **Shrub:** 0 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	✓Nasturtium	T					
H	✓Salsola tragus	T					
H	✓Amaranthus albas	T	✓				
H	✓Brass buttons	T					
H	✓Barley	T					
H	✓Brassica nigra	T					
T	✓Eucalyptus	T					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Agriculture

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M H **Explain:** _____

Phenology (E,P,L): **Herb** **Shrub** **Tree** **Other identification or mapping information:**

EL TORO

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: **Alliance** Encelia farinosa shrubland
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIG11 **Date:** 7/16

Name of recorder: N. Kidd

Other surveyors: C. Dickson

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 410081 **UTMN** 3732021 **Zone: 10 / 11** (circle one) **Error: ±** 40 **ft / m / pdop**

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1480 ft / m **Camera Name/Photograph #'s:** Canon 264-271 1N

Stand Size (acres): **<1, 1-5, >5** | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ? ft / m

Exposure, Actual °: _____ **NE NW SE SW Flat Variable All** | **Steepness, Actual °:** _____ **0° 1-5° 5-25° > 25**

Topography: Macro: top upper (mid) lower bottom | **Micro:** (convex) flat concave undulating

Geology code: Metv? **Soil Texture code:** CoLS | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 2 **Litter:** 3 **Bedrock:** 5 **Boulder:** 5 **Stone:** 10 **Cobble:** 15 **Gravel:** 10 **Fines:** 55 **=100%**

% Current year bioturbation _____ **Past bioturbation present? Yes / No** | **% Hoof punch** _____

Fire evidence: (Yes) / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Historical fire ~75 yrs

Highly eroded soils

Disturbance code / Intensity (L,M,H): 20 / L ___/___ ___/___ 19 / M ___/___ ___/___ **"Other"** _____ / ___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 15 **% Vasc Veg cover:** 22

% Cover: **Conifer tree / Hardwood tree:** 0 / 0 **Regenerating Tree:** 0 **Shrub:** 20 **Herbaceous:** 20

Height Class: **Conifer tree / Hardwood tree:** ___/___ **Regenerating Tree:** ___ **Shrub:** 1 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Encelia	15		H	Rattlesnake weed	+	
S	Eriogonum fasciculatum	3		H	dove weed	+	
S	Ericameria sp.	2		H	erodium	+	
S	Wishbone bush	+					
S	Challa	2					
H	mustard	+					
H	brome	+					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: RSS Encelia farinosa

Field-assessed association name (optional): _____

Adjacent alliances/direction: Disturbed RSS / S, RSS / N

Confidence in alliance identification: L M (H) **Explain:** dominant shrub = Enc.

Phenology (E,P,L): **Herb** **Shrub** **Tree** **Other identification or mapping information:**

harvester ants

167 burrows

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance Brassica upland
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIGil **Date:** 9/16 **Name of recorder:** N Kidd
Other surveyors:

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side
UTME 470038 **UTMN** 3730142 **Zone: 10 / (11)** (circle one) **Error: ±**_____ **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME ___ ___ ___ ___ ___ ___ UTMN ___ ___ ___ ___ ___ ___

Elevation: 1400 (ft) m **Camera Name/Photograph #'s:**

Stand Size (acres): <1, 1-5, (>5) **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m
Exposure, Actual °: _____ NE NW (SE) SW Flat (Variable) All | **Steepness, Actual °:** _____ 0° (1-5°) (5-25°) > 25

Topography: Macro: top upper (mid) lower bottom | **Micro:** convex flat concave (undulating)
Geology code: GRAN **Soil Texture code:** COSA | (Upland) or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H20: 0 **BA Stems:** 2 **Litter:** 10 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 10 **Fines:** 78 **=100%**

% Current year bioturbation _____ **Past bioturbation present? Yes / No** | **% Hoof punch** _____
Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbance code / Intensity (L,M,H): 2/M 1/M 19/L 5/H ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), (**T2**) (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)
Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), (**S4** decadent (>25% dead))
Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 40
% Cover: **Conifer tree / Hardwood tree:** ___/+ **Regenerating Tree:** 0 **Shrub:** 6 **Herbaceous:** 34
Height Class: **Conifer tree / Hardwood tree:** ___/5 **Regenerating Tree:** N/A **Shrub:** 2 **Herbaceous:** 1
Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Brassica nigra	20		S	encelia (1)	+	
H	[illegible]	10		T	Eucalyptus (3)	+	
H	tocolote	3		T	Palo Verde (1)	+	
S	coarse buckwheat	3					
H	Horseweed	T					
H	Telegraph weed	+					
S	deerweed	3					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Upland mustards
Field-assessed association name (optional): _____
Adjacent alliances/direction: RSS / N, Disturbed / W
Confidence in alliance identification: L M (H) Explain: Very sparse cover. P = Brassica
Phenology (E,P,L): **Herb** L **Shrub** L **Tree** L **Other identification or mapping information:**

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 10, 2014)

For Office Use Final database #:	Final vegetation type: Alliance Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID:	Date: 9/16/15	Name of recorder: C. Dickson Other surveyors: N. Kidd

GPS name: Nina Datum: NAD83 or _____ For Relevé: Bearing°, left axis at SW point____ of Long / Short side

UTME 469486 UTMN 3729168 Zone: 10 / 11 (circle one) Error: ± 1 ft / m / pdop

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record projected UTMs: UTME _____ UTMN _____

Elevation: 1400 ft / m Camera Name/Photograph #'s: Canon 277-281 (N)

Stand Size (acres): <1, 1-5, >5 | Plot Size (m^2): 10 / 100 / 400 / 1000 | Plot Shape ___ x___ ft / m or Circle Radius____ft / m

Exposure, Actual °: 0 NE NW SE SW Flat Variable | Steepness, Actual °: _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating

Geology code: _____ Soil Texture code: _____ | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 BA Stems: 1 Litter: 5 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 1 Gravel: 60 Fines: 34 =100%

% Current year bioturbation 0 Past bioturbation present? Yes / No | % Hoof punch _____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

graded - possible pasu - 2 flood control risers - at drainage crops

Disturbance code / Intensity (L,M,H): 1 / H 5 / H ___/___ ___/___ ___/___ ___/___ "Other" _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 20

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** 10 **Herbaceous:** 10

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** 2 **Herbaceous:** 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
S	Eucelia farinosa	8					
H	Salsola tragus	8					
S	Eriogonum fasciculatum	2					
H	Turpinia virgata	T					
H	Helianthus annuus	T					
H	Tocolote	T					
H	Brassica nigra	T					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Eucelia Dense Scrub. 33.030.00

Field-assessed association name (optional): _____

Adjacent alliances/direction: HDM - willow riparian area / _____

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): Herb Shrub Tree Other identification or mapping information:

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance Arroyo willow thicket
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIG 12 **Date:** 9/16

Name of recorder: N. Kidd
Other surveyors: C. Dickson

GPS name: Garmin **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 469870 **UTMN** 3729262 **Zone: 10 / 11** (circle one) **Error: ±** 3 **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1403 ft / m **Camera Name/Photograph #'s:**

Stand Size (acres): <1, 1-5, >5 | **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: _____ **Soil Texture code:** _____ | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 2 **Litter:** 5 **Bedrock:** 0 **Boulder:** 0 **Stone:** 5 **Cobble:** 5 **Gravel:** 10 **Fines:** 73 **=100%**

% Current year bioturbation _____ **Past bioturbation present?** Yes / No | **% Hoof punch** _____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: New Riparian area from developement Runoff & Channelization.

Disturbance code / Intensity (L,M,H): 33/H ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 60

% Cover: Conifer tree / Hardwood tree: 10 / 40 **Regenerating Tree:** _____ **Shrub:** 10 **Herbaceous:** _____

Height Class: Conifer tree / Hardwood tree: 5 / 4 **Regenerating Tree:** _____ **Shrub:** 3 **Herbaceous:** _____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
T	Pine sp (C Fallepa)	10					
T	Arroyo willow	25					
S	Mule fat	10					
T	Peruvian Pepper	10					
T	other ornamentals	5					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Arroyo willow thicket

Field-assessed association name (optional): _____

Adjacent alliances/direction: Disturbed RSS / SE, Developed / N/S

Confidence in alliance identification: L M H **Explain:** _____

Phenology (E,P,L): **Herb** L **Shrub** P **Tree** P **Other identification or mapping information:**

This is prob. the same as buffer in VIG14 (not accessable)

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: **Alliance** _____
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIG12

Date: 9/16

Name of recorder: N. Kidd

Other surveyors:

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 469709 **UTMN** 3729234 **Zone: 10 / (11)** (circle one) **Error: ±**_____ **ft / m / pdop**

GPS within stand? Yes (No) If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1387 ft / m **Camera Name/Photograph #'s:**

Stand Size (acres): <1, (1-5), >5 | **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ___ x___ ft / m **or Circle Radius**___ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** _____ 0° (1-5°) 5-25° > 25

Topography: Macro: top upper (mid) lower bottom | **Micro:** convex flat (concave) undulating

Geology code: Gran **Soil Texture code:** _____ | (Upland) or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 **BA Stems:** 2 **Litter:** 10 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 2 **Gravel:** 10 **Fines:** 76 =100%

% Current year bioturbation 2 **Past bioturbation present?** (Yes) / No | **% Hoof punch** 0

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbance code / Intensity (L,M,H): 2 / M 1 / M 19 / L 5 / H ___ / ___ **"Other"** _____ / ___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 15

% Cover: **Conifer tree / Hardwood tree:** ___ / 0 **Regenerating Tree:** 0 **Shrub:** 2 **Herbaceous:** 13

Height Class: **Conifer tree / Hardwood tree:** ___ / ___ **Regenerating Tree:** ___ **Shrub:** 1 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
	Brassica Niagra	3			Helianthus	1	
	Sysymbrium	3			Prickly lettuce	1	
	Tocolote	3					
	Buckwheat	+			(Eucs)		
	Telegraph weed	+					
	Encelia	1					
	Bromus sp.	5					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Brassica upland

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____ / _____, _____ / _____

Confidence in alliance identification: L (M) H **Explain:** Presence of Encelia & Lotus Scoparius

Phenology (E,P,L): **Herb** **Shrub** **Tree** **Other identification or mapping information:** Makes sense

Possibly Disturbed KCS - Very sparse & disturbed

waypt 1418 VIG13

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance _____
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIGLE5 **Date:** 9/15/15

Name of recorder: N KIDD
Other surveyors: C. DICKSON

GPS name: NINA **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point _____ of **Long / Short** side

UTME 0469047 **UTMN** 3727143 **Zone: 10 / 11** (circle one) **Error: ±** 10 **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1270 ft / m **Camera Name/Photograph #'s:** Canon #5

Stand Size (acres): <1, 1-5, >5 | **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ____ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: _____ **Soil Texture code:** Cols | Upland or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: **BA Stems:** <1 **Litter:** 0 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 1 **Gravel:** 75 **Fines:** 24 **=100%**

% Current year bioturbation <1 **Past bioturbation present?** Yes / No | **% Hoof punch** 0

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Regularly disced vacant lot in commercial area.

Disturbance code / Intensity (L,M,H): 1 / H ___/___ 19 / H ___/___ ___/___ **"Other"** DISKING / H

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:** Trace

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** Trace

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H1	Salsola tragus	T					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Disturbed / Developed

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M H **Explain:** _____

Phenology (E,P,L): **Herb** L **Shrub** **Tree** **Other identification or mapping information:**

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance Brassica Alliance
Association semi-naturalized stand

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: V1G 13 (Buffer) **Date:** 9/16

Name of recorder: N. Kidd

Other surveyors:

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 468954 **UTMN** 3772765 **Zone: 10 / (11)** (circle one) **Error: ±** 2 **(ft) m / pdop**

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: ft / m **Camera Name/Photograph #'s:**

Stand Size (acres): (<1,) 1-5, >5 | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** _____ (0°) 1-5° 5-25° > 25

Topography: Macro: top upper (mid) lower bottom | **Micro:** convex (flat) concave undulating

Geology code: Unk. **Soil Texture code:** MeLS | (Upland) or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: (0) **BA Stems:** 2 **Litter:** 5 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 0 **Gravel:** 10 **Fines:** 83 **=100%**

% Current year bioturbation 2 **Past bioturbation present?** (Yes) No | **% Hoof punch** 0

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbed

Disturbance code / Intensity (L,M,H): ___/___ ___/___ ___/___ ___/___ ___/___ **"Other"** disk/mow/H

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: (H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:** 35

% Cover: **Conifer tree / Hardwood tree:** 0 / 0 **Regenerating Tree:** 0 **Shrub:** 0 **Herbaceous:** 1

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** ____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Brassica Nigra	10					
H	Avena sp.	5					
H	Tocolote	5					
H	Sysimbrium sp.	5					
H	Salsola	10					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: NNG – Mustard upland

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L (M) H **Explain:** Avena & Salsola ?

Phenology (E,P,L): Herb L **Shrub** **Tree** **Other identification or mapping information:**

Heavily disturbed

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #: V1G14

Final vegetation type: **Alliance** Cattail Marsh
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: V1G14 **Date:** 9/17

Name of recorder: N. Kidd

Other surveyors:

GPS name: Garmin **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME _____ **UTMN** _____ **Zone: 10 / 11** (circle one) **Error: ±**_____ **ft / m / pdop**

GPS within stand? **Yes / No** If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME 468371 UTMN 3772738

Elevation: 1260 ft / m **Camera Name/Photograph #'s:** iPhone

Stand Size (acres): **<1, 1-5, >5** | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ **NE NW SE SW Flat Variable All** | **Steepness, Actual °:** _____ **0° 1-5° 5-25° > 25**

Topography: Macro: **top upper mid lower bottom** | **Micro:** **convex flat concave undulating**

Geology code: _____ **Soil Texture code:** _____ | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H20: 15 **BA Stems:** 2 **Litter:** 10 **Bedrock:** 0 **Boulder:** 5 **Stone:** 10 **Cobble:** 2 **Gravel:** 15 **Fines:** 41 **=100%**

% Current year bioturbation ?0 **Past bioturbation present? Yes / No** | **% Hoof punch** 0
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Channelized Temescal wash. Cattails probably cleared out every year.

Disturbance code / Intensity (L,M,H): 32 H / 33 M / 17 M **"Other"** _____ / ___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 40

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** 10 **Shrub:** ____ **Herbaceous:** 30

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** ____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
A	Salix sp.	10					
H	Typha latifolia	30					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Cattail marsh

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M H Explain: _____

Phenology (E,P,L): **Herb Shrub Tree** **Other identification or mapping information:**

Could not access. Had to assess from fence line.
1° Cattails w/ some emerging willows.

VIG14

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use Final database #:	Final vegetation type: Alliance Alkali Weed – Saltgrass Playa Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID:	Date:	Name of recorder:
VIGLE1	9/15/15	N. Kidd, C. Dickson
		Other surveyors:

GPS name: Nims camera Datum: NAD83 or _____ For Relevé: Bearing°, left axis at SW point_____ of Long / Short side

UTME 469604 UTMN 3772132 Zone: 10 / 11 (circle one) Error: ± 8 ft / m / pdop

GPS within stand? (Yes) No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____

and record projected UTMs: UTME _____ UTMN _____

Elevation: 261 ft / m Camera Name/Photograph #'s: Canon sd30, Vol-165 (JN)

Stand Size (acres): <1, (1-5), >5 | Plot Size (m^2): 10 / 100 / 400 / 1000 | Plot Shape ___ x ___ ft / m or Circle Radius ____ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | Steepness, Actual °: _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower (bottom) | Micro: convex (flat) concave undulating

Geology code: Setu Soil Texture code: Mesa | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 0 BA Stems: 2 Litter: 0 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 1% Gravel: 50 Fines: 49 =100%

% Current year bioturbation 10 Past bioturbation present? (Yes) / No | % Hoof punch 0

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Regularly disked. All veg is from current year.

Disturbance code / Intensity (L,M,H): 3/H 13/H ___/___ ___/___ ___/___ "Other" Disking / H

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:** 100

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** _____ **Shrub:** 80 **Herbaceous:** 20

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** _____ **Shrub:** 2 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.

% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species (Relative Cover)	% cover	C	Strata	Species	% cover	C
S2	Atriplex serenana	50	✓	H1	Cressa truxillensis	5	
S2	Bassia hyssopifolia	30	✓	H1	Distichlis spicata	10	
			✓				
H1	Malvella leprosa	2					
H1	Heliotrope	5					
H2	Brassica Nigra	3					
H1	Purslane	1					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Alkali sink, Atriplex scrub

Field-assessed association name (optional): _____

Adjacent alliances/direction: Upland mustard / marsh / _____

Confidence in alliance identification: (L) M H **Explain:** Bassia, Distichlus & Cressula

Phenology (E,P,L): **Herb** P **Shrub** P **Tree** **Other identification or mapping information:** No Alliance for Atriplex serenana

add Wetland Hwd

Alkali

Re: VIG14 VP/wetland

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: **Alliance** Schoenoplectus acutus herb.
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIGLE3 **Date:** 9/15

Name of recorder: N. KIDD

Other surveyors: C. DICKSON

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point_____ of **Long / Short** side

UTME 4 6 8 5 4 8 **UTMN** 3 7 7 1 2 2 **Zone: 10 / 11** (circle one) **Error: ±** 7 **ft / m / pdop**

GPS within stand? **Yes** / **No** If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____
and record projected UTMs: UTME _____ UTMN _____

Elevation: 1250 ft / m **Camera Name/Photograph #'s:** Canon ND

Stand Size (acres): **<1, 1-5, >5** | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ **NE NW SE SW Flat Variable All** | **Steepness, Actual °:** _____ **0° 1-5° 5-25° > 25**

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: Setu **Soil Texture code:** Muck | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: 5 **BA Stems:** 2 **Litter:** 10 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 2 **Gravel:** 20 **Fines:** 60 **=100%**

% Current year bioturbation <1 % **Past bioturbation present?** **Yes** / **No** | **% Hoof punch** 0

Fire evidence: **Yes** / **No** (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Disturbance code / Intensity (L,M,H): ____/___ ____/___ ____/___ ____/___ ____/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 85

% Cover: **Conifer tree / Hardwood tree:** 0 / 0 **Regenerating Tree:** 0 **Shrub:** 0 **Herbaceous:** 85

Height Class: **Conifer tree / Hardwood tree:** _____/_____ **Regenerating Tree:** _____ **Shrub:** _____ **Herbaceous:** _____

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Helianthus annuus	20			Alkalia mallow	1%	
H	Schoenoplectus acutus	15			purslane	5%	
H	Xanthium strumarium	5			hyloroge	+	
H	Distichlis	10			Potamogeton M. Pectinatus	1%	
H	nut sedge Cyperus	20			Juncus	1%	
H	Rumex Crispis	10%					
H	Grass sp.	2%					

Unusual species: mesquite

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Fresh water marsh ~ Bullrush

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L **M** H **Explain:** Lots of Distichlis & Rumex.

Phenology (E,P,L): **Herb** **Shrub** **Tree** **Other identification or mapping information:**

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: **Alliance** Salt grass flats
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIG 19 **Date:** 9/15

Name of recorder: N Kidd
Other surveyors: C Dickson

GPS name: Garmin **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side

UTME 468698 **UTMN** 3726999 **Zone: 10 / 11** (circle one) **Error: ±** 3 **ft / m / pdop**

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME ____ UTMN ____

Elevation: 1266 ft / m **Camera Name/Photograph #'s:** Canon

Stand Size (acres): **<1, 1-5, >5** | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ **NE NW SE SW Flat Variable All** | **Steepness, Actual °:** _____ **0° 1-5° 5-25° > 25**

Topography: Macro: top upper mid (lower) bottom | **Micro: convex flat (concave) undulating**

Geology code: _____ **Soil Texture code:** _____ | **Upland** or **(Wetland/Riparian)** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H20: 0 **BA Stems:** 2 **Litter:** 5 **Bedrock:** 0 **Boulder:** 0 **Stone:** 0 **Cobble:** 1 **Gravel:** 5 **Fines:** 87 **=100%**

% Current year bioturbation 0 **Past bioturbation present? Yes / (No) | % Hoof punch** 0

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Regularly mowed or disked

Disturbance code / Intensity (L,M,H): ___/___ ___/___ ___/___ ___/___ ___/___ **"Other"** disked / H

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:**____

% Cover: Conifer tree / Hardwood tree: 0 / + **Regenerating Tree:** 0 **Shrub:** 0 **Herbaceous:** 50

Height Class: Conifer tree / Hardwood tree: ___/ 2 **Regenerating Tree:** 0 **Shrub:** 0 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
+	Palo Verde (1)	+					
H	Helianthus annuus	5					
H	Distichlis spicata	25					
H	Cressula	10					
H	Cocklebur	5					
H	Alkali Mallow	5					
H	Purslane	+					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Salt grass marsh ?

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L M (H) Explain: Salt Grass dominant forming thick mats

Phenology (E,P,L): **Herb Shrub Tree** **Other identification or mapping information:**

NWG 3rd/Pascadero

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance Brassica upland mustard
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIG14 2 **Date:** 9/15

Name of recorder: N. Kidd

Other surveyors: C. Dickson

GPS name: Ning's **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side

UTME 408476 **UTMN** 3721740 **Zone: 10 / 11** (circle one) **Error: ±** 20 **ft / m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME ____ UTMN ____

Elevation: 260 ft / m **Camera Name/Photograph #'s:** Cannon

Stand Size (acres): <1, 1-5, >5 | **Plot Size** (m^2): 10 / 100 / 400 / 1000 | **Plot Shape** ___ x ___ ft / m **or Circle Radius** ___ ft / m

Exposure, Actual °: _____ NE NW SE SW Flat Variable All | **Steepness, Actual °:** _____ 0° 1-5° 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating

Geology code: SeTu **Soil Texture code:** MCSL | Upland or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: ○ **BA Stems:** 1% **Litter:** 1% **Bedrock:** ○ **Boulder:** ○ **Stone:** 1% **Cobble:** 50% **Gravel:** 47% **Fines:** 1% **=100%**

% Current year bioturbation 0 **Past bioturbation present?** Yes / No | **% Hoof punch** 0

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments: Regularly disked

Disturbance code / Intensity (L,M,H): 2 / H 5 / H 3 / H ___/___ ___/___ **"Other"** Disking / H

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:**____ **% Vasc Veg cover:**____

% Cover: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** ____ **Herbaceous:** ____

Height Class: **Conifer tree / Hardwood tree:** ____/____ **Regenerating Tree:** ____ **Shrub:** 1-2 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
H	Brassica nigra	2					
H	Atriplex semibaccata	+	√				
S	Purslane	+					
H	Brassica hirsuta	+					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Mustards? Chenopod?

Field-assessed association name (optional): _____

Adjacent alliances/direction: Alkali marsh / NE, Channel / W

Confidence in alliance identification: L M H **Explain:** Heavily disturbed. Might be part of alkali playa

Phenology (E,P,L): **Herb** E **Shrub** **Tree** **Other identification or mapping information:**

CNPS and CDFW Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised February 27, 2014)

For Office Use
Final database #:

Final vegetation type: Alliance Red willow thicket
Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Stand ID: VIG 14 **Date:** 9/17

Name of recorder: N. Kidd

Other surveyors:

GPS name: _____ **Datum: NAD83 or** _____ For Relevé: **Bearing°**, left axis at SW point____ of **Long / Short** side

UTME 468431 **UTMN** 3727181 **Zone: 10** (11) (circle one) **Error: ±** 3 (ft) **m / pdop**

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record projected UTMs: UTME _____ UTMN _____

Elevation: ft / m **Camera Name/Photograph #'s:**

Stand Size (acres): (<1,) 1-5, >5 | **Plot Size** (m^2): **10 / 100 / 400 / 1000** | **Plot Shape** ___ x___ ft / m **or Circle Radius**___ft / m

Exposure, Actual °: _____ **NE NW SE SW Flat Variable All** | **Steepness, Actual °:** _____ **0° 1-5° 5-25° > 25**

Topography: Macro: top upper mid lower bottom | **Micro: convex flat concave undulating**

Geology code: _____ **Soil Texture code:** _____ | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H20: BA Stems: Litter: Bedrock: Boulder: Stone: Cobble: Gravel: Fines: =100%

% Current year bioturbation _____ **Past bioturbation present? Yes / No** | **% Hoof punch** _____

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

This includes small area on east side of Temescal & small patch on west side.
West side patch was assessed from east side only.

Disturbance code / Intensity (L,M,H): ___/___ ___/___ ___/___ ___/___ ___/___ **"Other"** _____/___

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)

Herb: H1 (<12" plant ht.), **H2** (>12" ht.) **Desert Riparian Tree/Shrub: 1** (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.) **% NonVasc cover:** 0 **% Vasc Veg cover:** 30

% Cover: Conifer tree / Hardwood tree: ___/30 **Regenerating Tree:** ____ **Shrub:** 8 **Herbaceous:** 2

Height Class: Conifer tree / Hardwood tree: ___/5 **Regenerating Tree:** ____ **Shrub:** 2 **Herbaceous:** 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species, Stratum, and % cover. Stratum categories: T=Tree, S = Shrub, H= Herb, E = SEedling, A = SApling, N= Non-vascular.
% cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, 75%.

Strata	Species	% cover	C	Strata	Species	% cover	C
T	Salix laevigata	10					
S	S. exigua?	2					
S	Mule fat	5					
S	Atriplex sclerania	2					
H	Smooth tarplant	1					
T	S. lasiolepis	5					

Unusual species: _____

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: either Red willow or Arroyo willow thicket

Field-assessed association name (optional): _____

Adjacent alliances/direction: _____/_____, _____/_____

Confidence in alliance identification: L (M) H **Explain:** Can not see sp. in shrub stage

Phenology (E,P,L): **Herb Shrub Tree** **Other identification or mapping information:** Dry wash.

Red willow Required >30% Relative Cover
w/ S. lasiolepis in Sub Canopy.

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Appendix D3
Potential Jurisdictional/Wetland Features, Incidental Plant and Wildlife Observations Figures D-6 Through D-10

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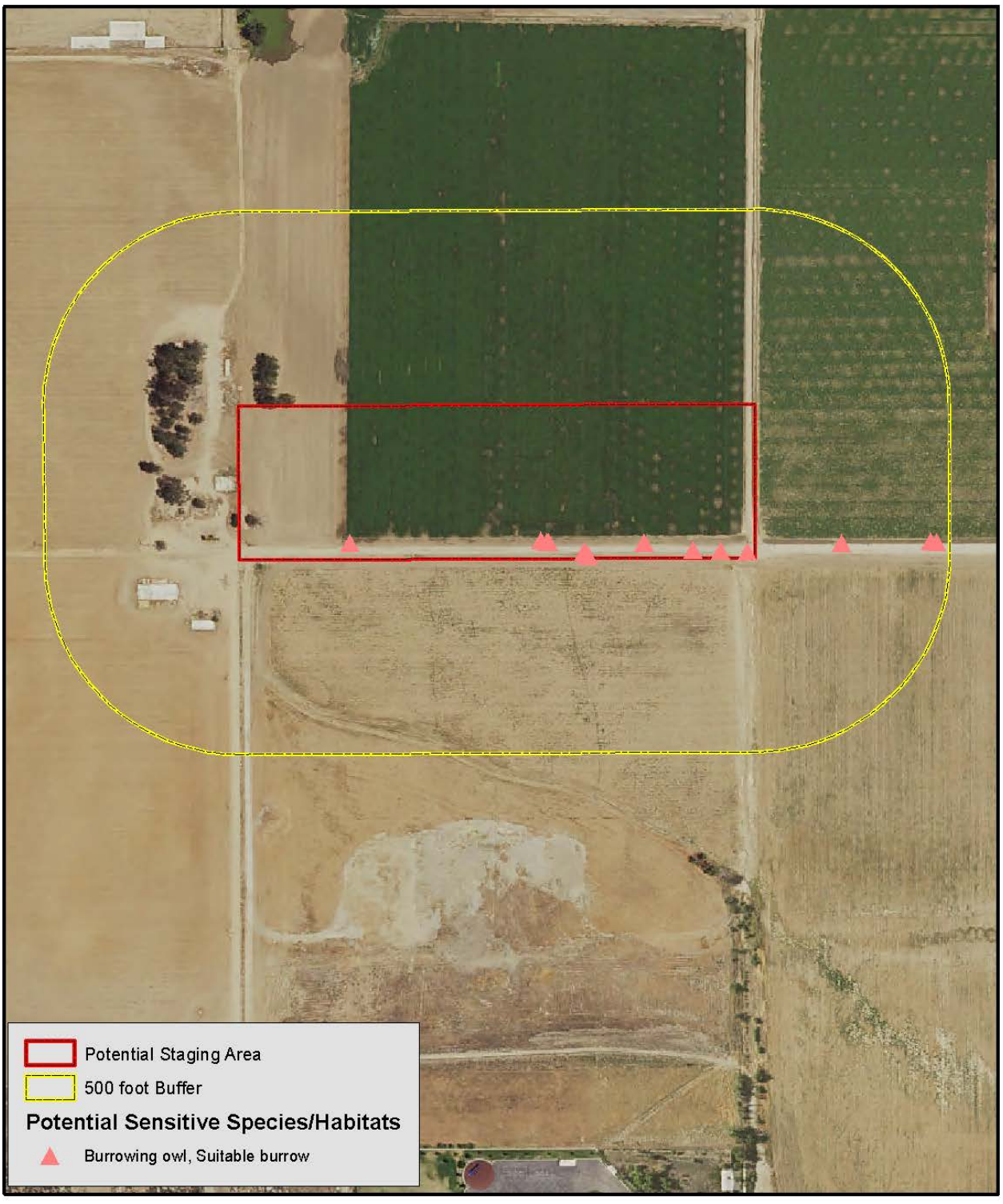
Potential Staging Area
500 foot Buffer
Potential Jurisdictional Area
Potential Sensitive Species/Habitats (polygons)
Fairy Shrimp, Potential Habitat
Paniculate Tarplant, Present
Smooth tarplant, Present
Potential Sensitive Species/Habitats
Burrowing owl, Suitable burrow
Cooper's hawk, Present
Fairy shrimp, Potential habitat
N
0 62.5 125 250 375 500
Feet
1 inch = 250 feet
DATE: 9/21/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas
FIGURE D-6
ASP Site 8
Potential Sensitive Species/Habitats
Kidd
BIOLOGICAL INC.



N

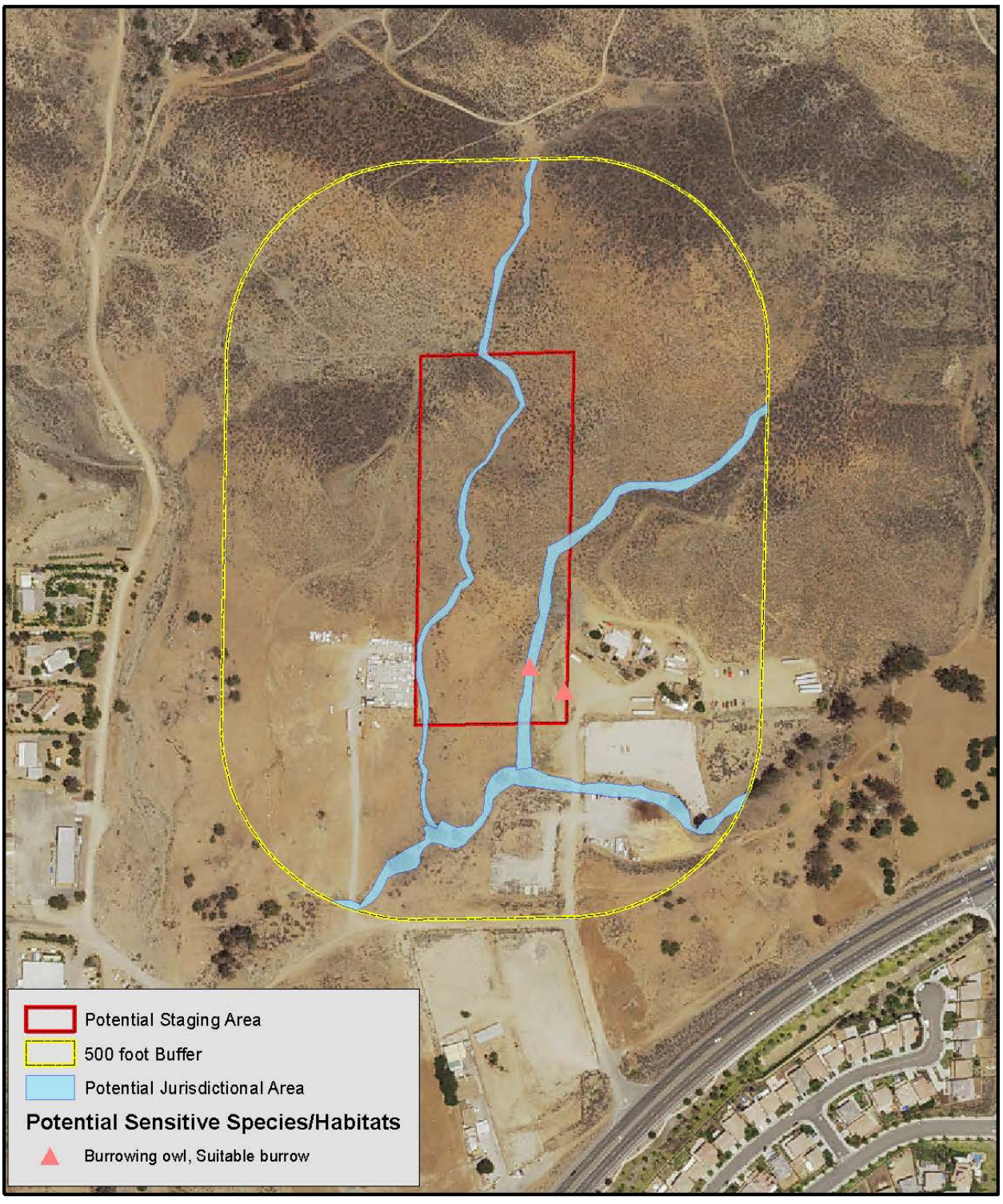
0 75 150 300 450 600 Feet

1 inch = 333 feet

DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas

FIGURE D-7
VIG Site 10
Potential Sensitive Species/Habitats

Kidd BIOLOGICAL INC.


Potential Staging Area
500 foot Buffer
Potential Jurisdictional Area
Potential Sensitive Species/Habitats
Burrowing owl, Suitable burrow
N
0 75 150 300 450 600
Feet
1 inch = 333 feet
DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas
FIGURE D-8
VIG Site 11
Potential Sensitive Species/Habitats
Kidd
BIOLOGICAL INC.

N

0 75 150 300 450 600 Feet

1 inch = 333 feet

DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas

FIGURE D-9
VIG Site 12
Potential Sensitive Species/Habitats

Kidd BIOLOGICAL INC.


Potential Staging Area
500 foot Buffer
Potential Jurisdictional Area
Potential Sensitive Species/Habitats (polygons)
Fairy Shrimp, Potential Habitat
Smooth tarplant, Present
Potential Sensitive Species/Habitats
Fairy shrimp and vernal pool plants, Suitable habitat
Fairy shrimp, Potential habitat (road ruts)
N
0 100 200 400 600 800
Feet
1 inch = 471 feet
DATE: 9/20/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: 2014 NAIP Imagery, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas
FIGURE D-10
VIG Site 13 & 14
Potential Sensitive Species/Habitats
Kidd
BIOLOGICAL INC.

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Appendix D4
Photo Compendium

VIG Laydown Area Photos

Photo 1. Proposed staging area ASP 8, Facing south within NNG habitat

Photo 2. Proposed staging area ASP 8, Facing southwest at Alkali Playa Habitat

Photo 3. Proposed staging area ASP 8, Facing northwest at Tamarisk Thicket Habitat in San Jacinto River.

Photo 4. Proposed staging area ASP 8, Facing west at disturbed mulefat scrub with senesced smooth Tarplant.

Photo 5. Proposed staging area VIG 10, Facing north within Agricultural Field

Photo 6. Proposed staging area VIG 10, Facing south at eucalyptus grove within buffer.

Photo 7. Proposed staging area VIG 11, Facing north at Brittle bush Scrub habitat

Photo 8. Proposed staging area VIG 11, Facing south at brittle bush scrub and disturbed drainage feature

Photo 9. Proposed staging area VIG 11, facing north at eastern upland drainage feature.

Photo 10. Proposed staging area VIG 11, facing northwest at western upland drainage feature.

Photo 11. Proposed staging area VIG 12, facing north at disturbed brittlebush scrub

Photo 12. Proposed staging area VIG 12, Representative photo of ephemeral pond.

Photo 13. Proposed staging area VIG 12, Risers located near northwestern boundary of Staging Area VIG 12.

Photo 14. Southern Willow Scrub along northwestern of proposed staging area VIG 12.

Photo 15. Facing south within disturbed/developed habitat within proposed staging srea VIG 13.

Photo 16. Facing southeast at Freshwater marsh habitat in proposed staging area VIG 14.

Photo 17. Facing northwest at ponded feature within freshwater marsh in proposed staging area VIG 14.

Photo 18. Facing southeast where freshwater marsh transitions to salt grass flats in Proposed staging area VIG 14.

Photo 19. Facing east from disturbed area within proposed staging area VIG 14.

Photo 20. Facing northwest at Channelized Temescal Wash within 500-foot buffer of proposed staging area VIG 14.

Photo 21. Facing north at Southern Willow Scrub habitat within 500-foot buffer of proposed staging area VIG 14.

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APPENDIX E

WRCMSHCP LAYER FIGURES

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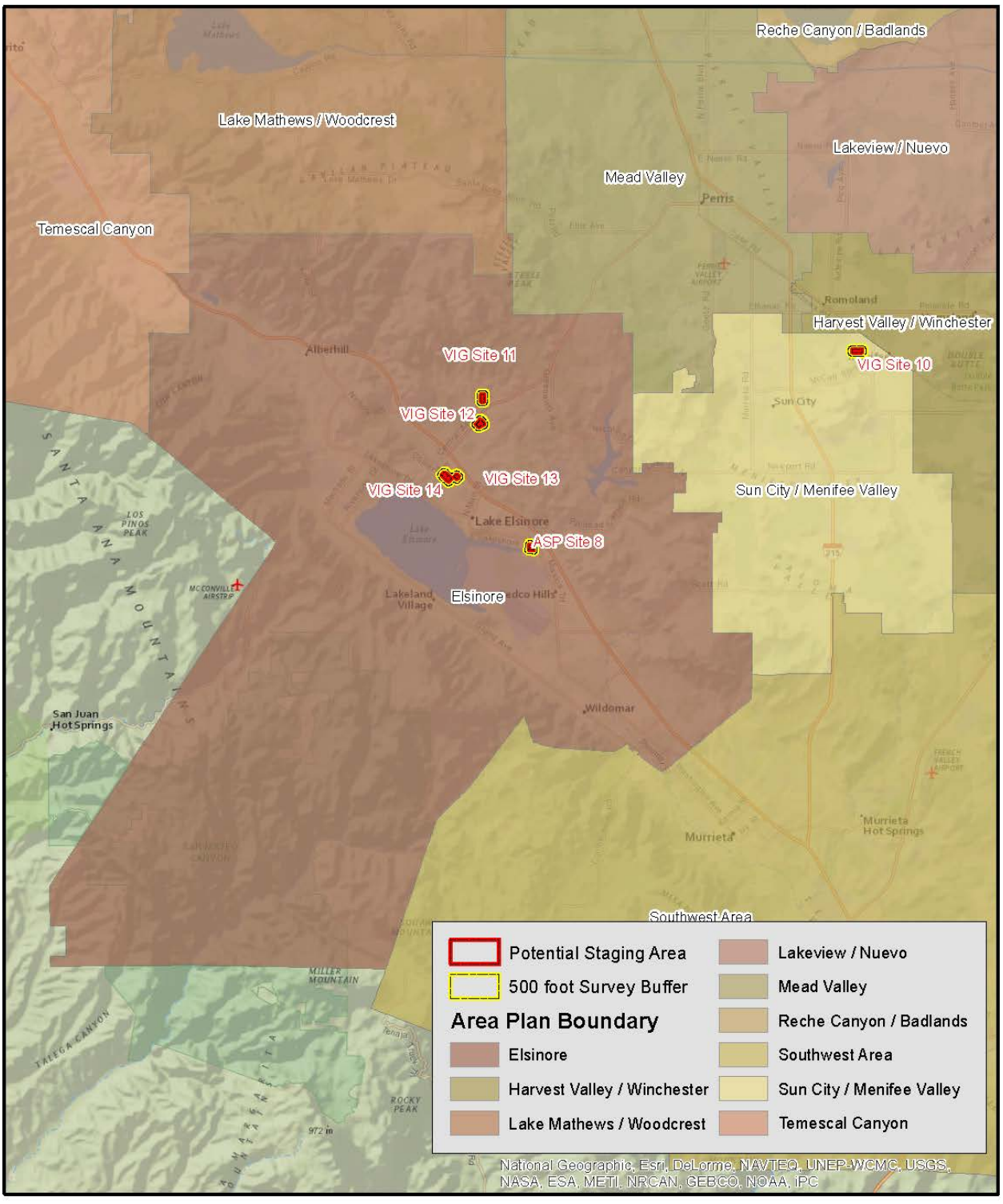


FIGURE E-1
Riverside County
Area Plan Map

Kidd BIOLOGICAL INC.

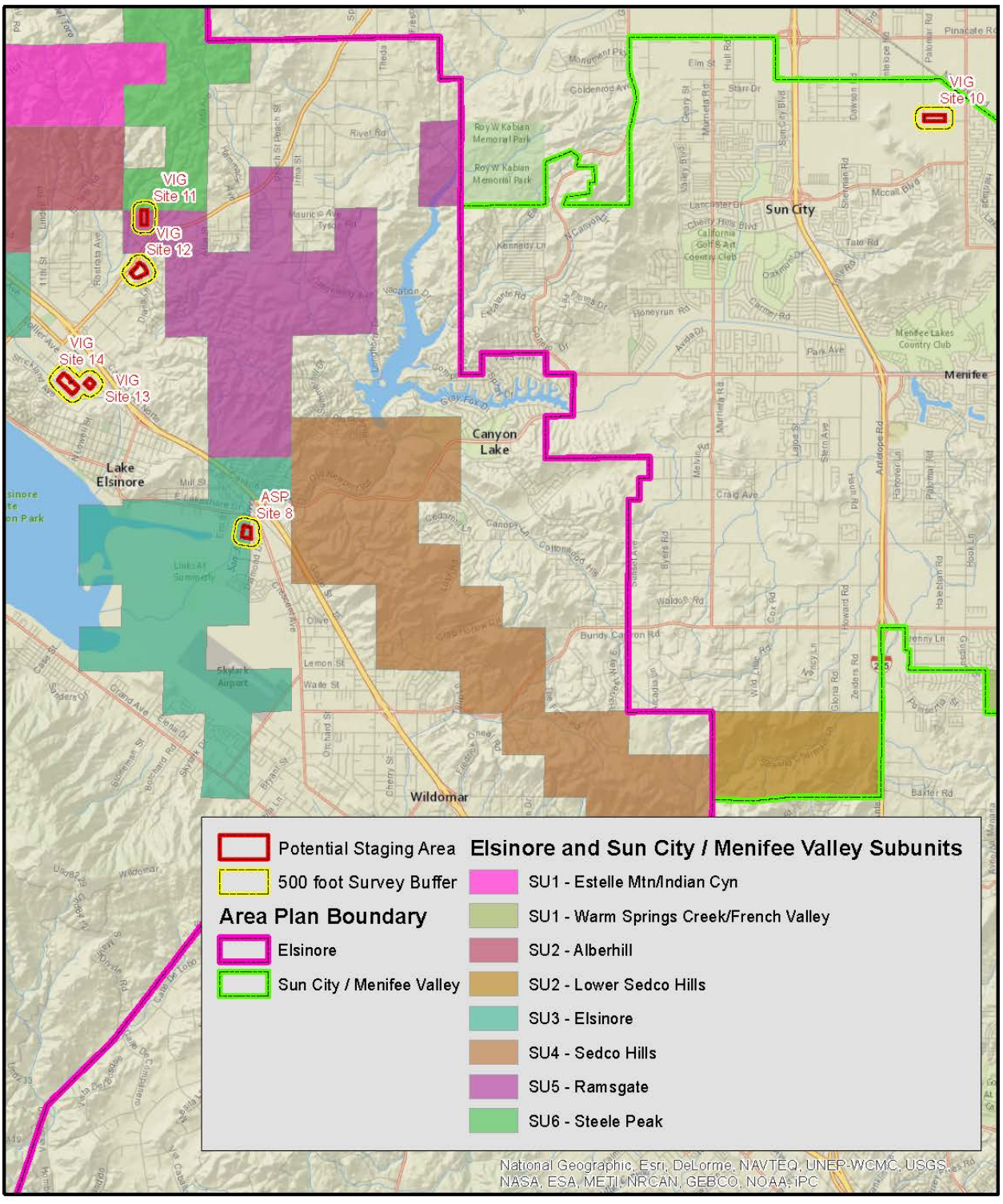
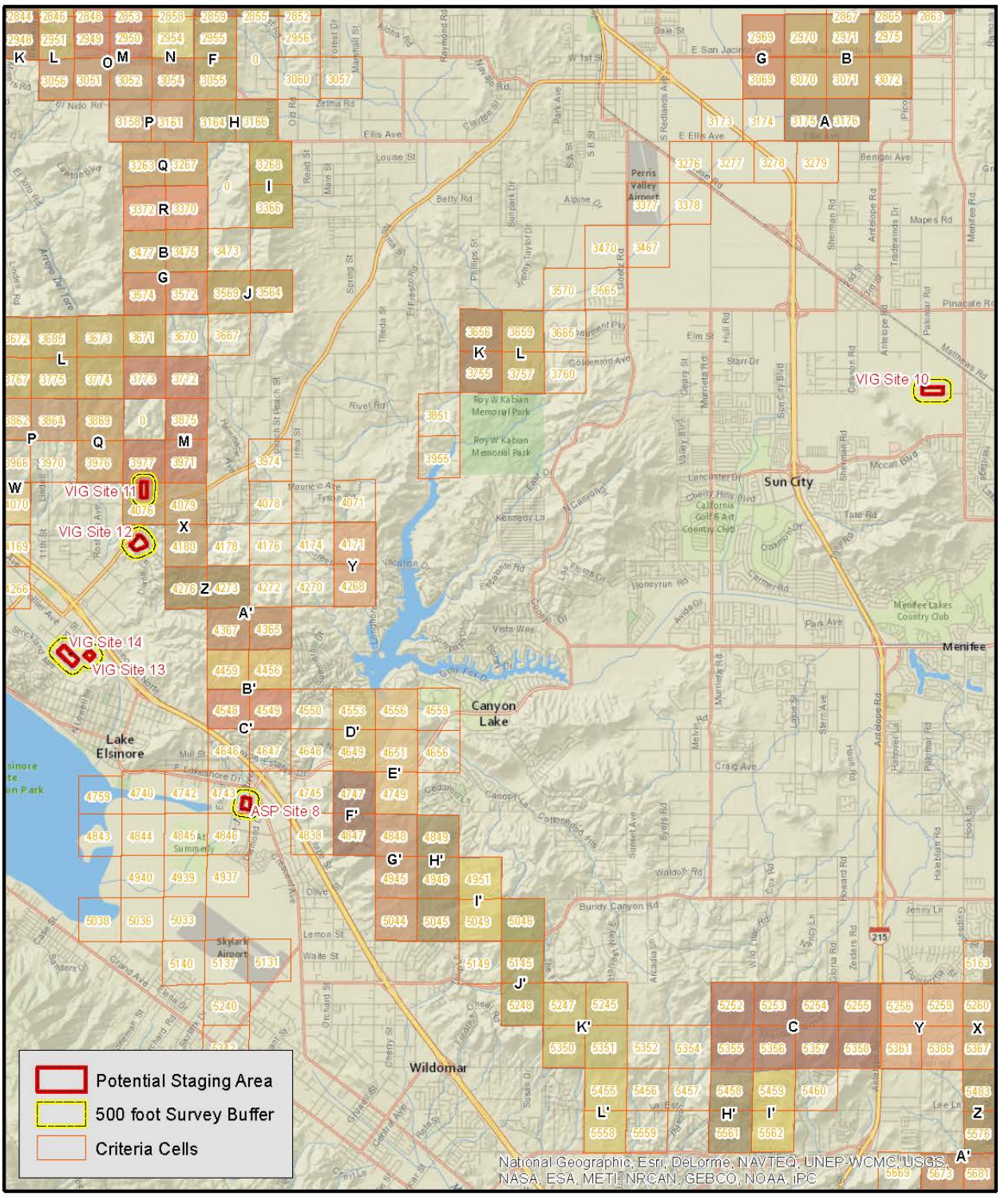


FIGURE E-2
Riverside County
Elsinore & Sun City/Menifee Valley Area Plan
Subunit Map

Kidd BIOLOGICAL INC.



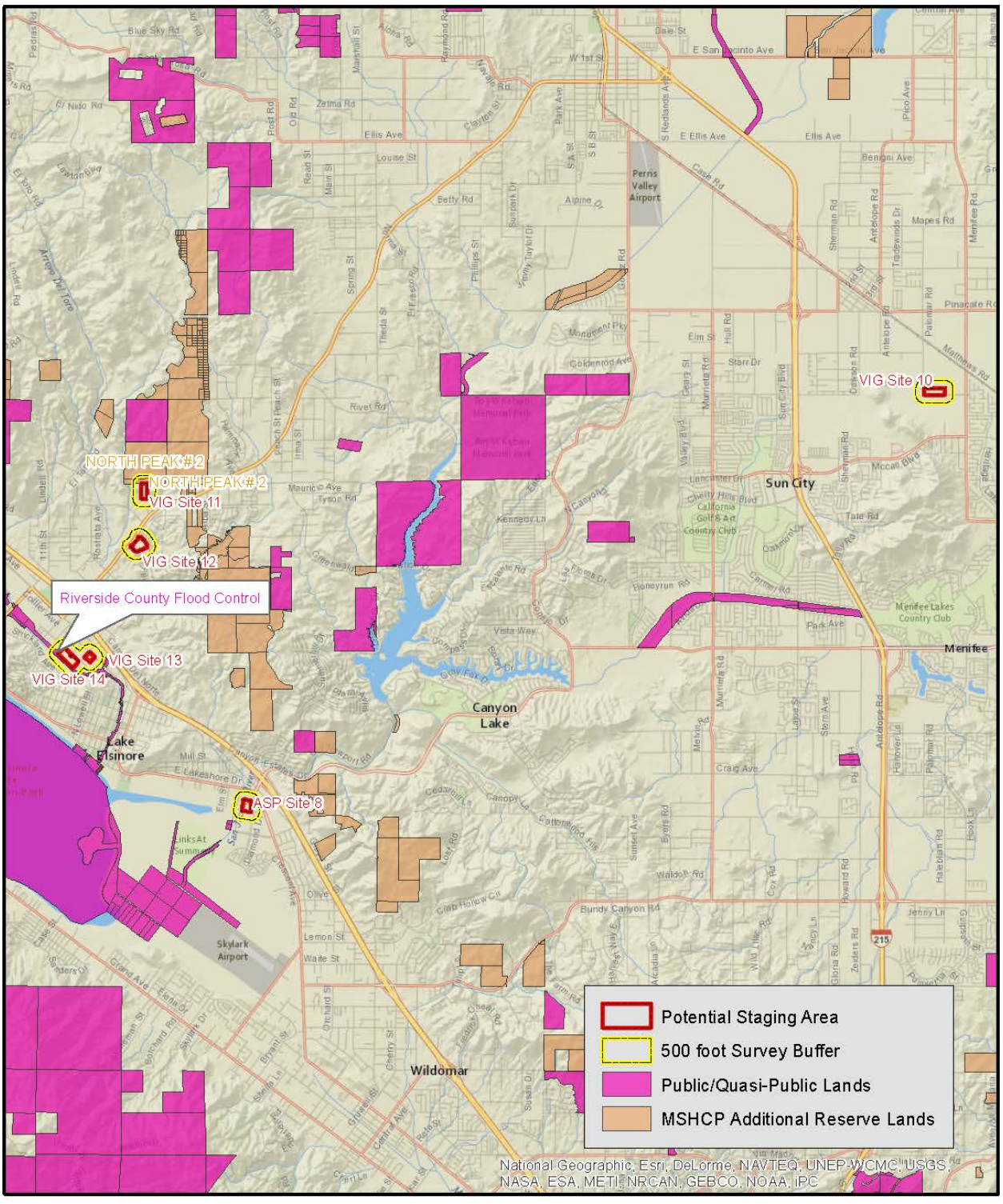
N
3
Miles

DATE: 9/17/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: ESRI National Geographic Basemap, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas

CELL GROUPS ARE DISPLAYED AS SHADED AREAS AND LABELED WITH A BLACK LETTER

FIGURE E-3
Riverside County MSHCP
Criteria Cell and Cell Group Map

Kidd BIOLOGICAL INC.

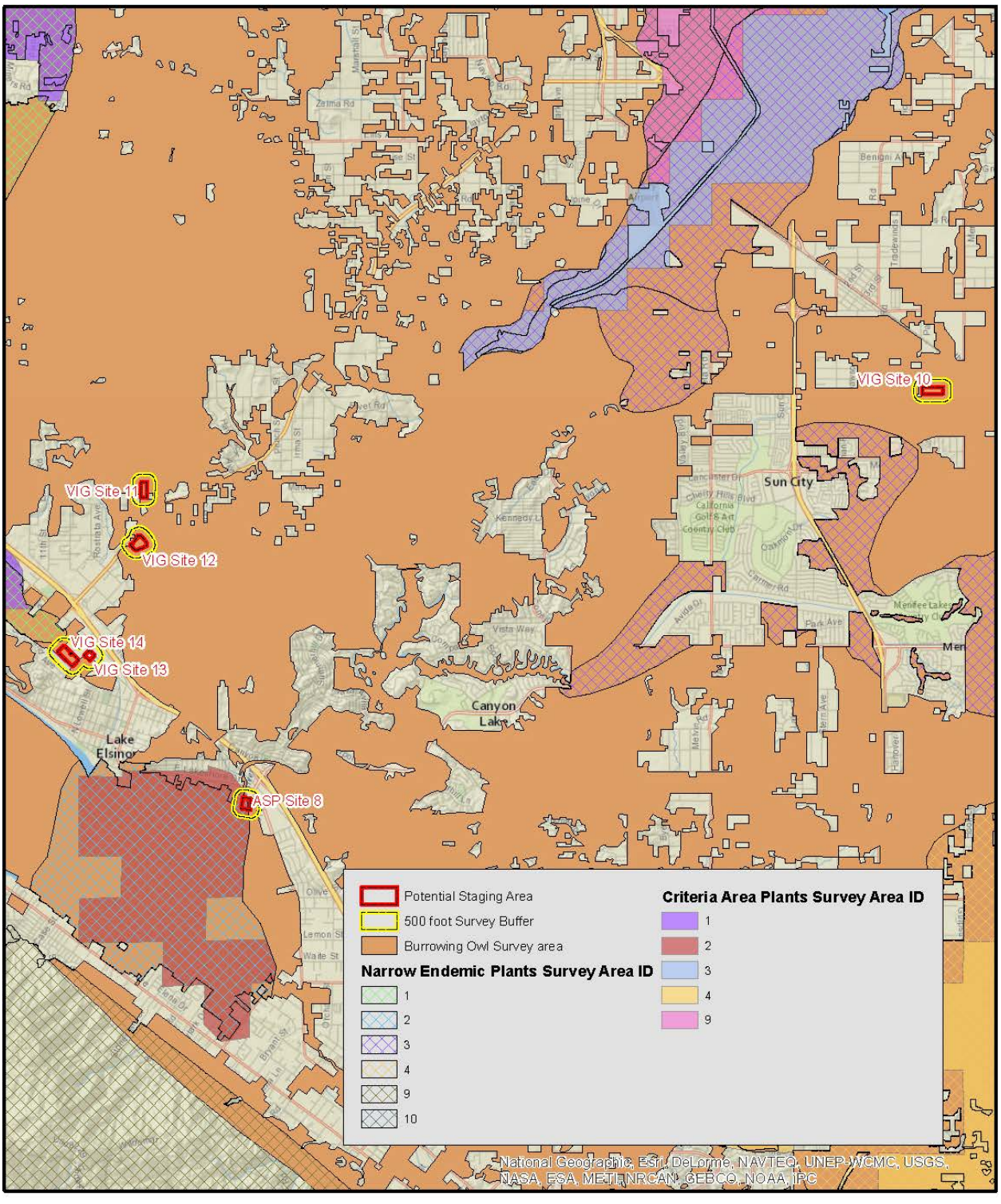


N
3
Miles

DATE: 9/17/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: ESRI National Geographic Basemap, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas

FIGURE E-4
Riverside County MSHCP Conserved Lands

Kidd BIOLOGICAL INC.


VIG Site 10
VIG Site 11
VIG Site 12
VIG Site 14
VIG Site 13
ASP Site 8
Sun City
Canyon Lake
Lake Elsinore
Potential Staging Area
500 foot Survey Buffer
Burrowing Owl Survey area
Narrow Endemic Plants Survey Area ID
1
2
3
4
9
10
Criteria Area Plants Survey Area ID
1
2
3
4
9
National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iPC
N
3
Miles
DATE: 9/17/2015
COORDINATE SYSTEM: NAD 1983 UTM Zone 11N
SOURCE: ESRI National Geographic Basemap, AECOM
PROJECT: Valley-Ivy Glen/Alberhill - Staging Areas
FIGURE E-5
Riverside County MSHCP
Required Surveys
Kidd
BIOLOGICAL INC.

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Black, Kristi

From: Jennifer Wolf <Jennifer.Wolf@sce.com>
Sent: Friday, December 11, 2015 3:23 PM
To: Black, Kristi
Cc: Alisa Krizek; Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov); Ladd, Karen; Thomas Burhenn; Geetha Shanmugasundaram; Bernice Goldsmith
Subject: RE: (External):VIG/ASP follow up questions

Kristi,
Here are our responses to the questions regarding the Alberhill access roads:

1. **SCE Response to Q4:** Note e states that temporary disturbance areas can be as wide as 200 feet; however, the temporary disturbance area is not included in the disturbance table. So the temporary access road disturbance acreage was calculated using a geometry calculation in GIS.

   Follow up: The new values included in SCE's response indicate that about 41 acres would be temporarily disturbed and about 19 acres would be permanently disturbed during construction for access roads. This acreage is equivalent to about 6.1 miles of roadway that is about 82 feet wide.
   Given this amount of disturbance in this location, and given the hilly terrain where access roads would be located, it is likely that this level of disturbance could result in significant impacts related to visual resources, biological resources, and geology and soils. To analyze these impacts, we request SCE explain why this large amount of temporary disturbance is anticipated to be needed. For example, as compared with similar projects (e.g., West of Devers), the amount of planned temporary disturbance seems disproportionate. Clarify where the temporary disturbance may take place. Describe what the temporary disturbance would entail (e.g., grading to level, vegetation removal).

SCE's Response: *Typical construction activities associated with rehabilitation of existing dirt access roads include vegetation clearing, blade-grading and recompacting to remove potholes, ruts, and other surface irregularities in order to provide a smooth dense riding surface capable of supporting heavy construction and maintenance equipment. Existing unpaved roads may also require additional upgrades such as protection (e.g., soil cover, steel plates, etc.) for existing underground utilities.*

Typical construction activities associated with temporary access could include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting.

Typical construction activities associated with new roads generally include activities similar to those described for the rehabilitation of existing dirt roads, but may also include the following additional construction requirements that depend upon the existing land terrain.

- *Existing relatively flat terrain approximately 0 to 4 percent grade: Construction activities are generally similar to rehabilitation activities to existing dirt roads, and in addition may require activities such as clearing, grubbing, and constructing drainage improvements (e.g., wet crossings, water bars, and/or culverts). Detailed information regarding locations requiring drainage improvements would be provided during final engineering.*

- *Existing rolling terrain approximately 5 to 12 percent grade: Construction activities generally include activities typical to flat terrain and in addition may require activities such as cut and fill in excess of 2-feet depth, benched grading, drainage improvements (e.g., v-ditches, down drains, and energy dissipaters), retaining walls and slope stability improvements such as geogrid reinforcement. Other slope stability systems considered include*

mechanically stabilized systems, along with drainage improvements (i.e., v-ditches, downdrains, energy dissipaters, etc.). Blasting or fracturing may also be required in some locations. The extent of retaining walls and slope stability improvements would be determined during final engineering. Detailed information regarding locations requiring cut and fill, benched grading and/or drainage improvements would be provided during final engineering.

- *Existing mountainous terrain over 12 percent grade: Construction activities would include similar activities as rolling terrain construction activities and, in addition, may likely require significant cut and fill depths, benched grading, drainage improvements, and slope stability improvements. Detailed information regarding locations requiring cut and fill, benched grading and/or drainage improvements would be provided during final engineering.*

Retaining walls and slope stability improvements may also be required for access road and/or transmission line components, such as during the new access road construction, repairing earthen slopes damaged by erosion, grading with significant cut and fill depths, and benched grading activities. It is typically preferable to use cut-and-fill slopes that are configured at slope ratios that are stable without using reinforcement. However, due to ROW limitations, sensitive resource avoidance, and existing topography, the Proposed Project may require the need for reinforced earthen slopes, permanent erosion control or an earth retaining system. Construction of the retaining wall and wet crossings would commence with the mobilization of equipment and materials to the project site. Rehabilitation of existing road surfaces with a motor grader to improve travel conditions to a specific construction site would occur as necessary throughout the Proposed Project's duration. Any existing retaining walls may remain in place to protect the integrity of the access road or tower during construction per the engineering design.

The permanent disturbance area is estimated to be approximately 19.2 acres and includes drivable area of the proposed access roads, retaining walls and/or mechanically stabilized earth walls, and drainage improvements. The temporary disturbance area is estimated to be approximately 60.59 acres and includes BMP installation, clearing, grubbing, and cut and fill slopes that will be revegetated after construction is complete. Furthermore, due to the mountainous steep terrain and unknown detailed mapping of geological and geotechnical soil conditions at this time, the access road temporary disturbance area also accounts for an approximation of how far deep the Construction Contractor may have to go to find competent material to build the graded slopes.

2. **SCE Response to Q7:** The table [of disturbances] has been corrected [to exclude "with access roads"]. See the attached description in track changes.

   Follow up: Confirm that there would be no access roads needed to be constructed or improved to get to the four towers that are currently planned to be constructed conventionally. In addition, if it turns out that conventional construction is used instead at any of the eight towers that are currently planned to be constructed with helicopters, state whether roads would be constructed to facilitate access. If access roads may be needed at any of these eight towers, specify the sizes and locations of permanent and temporary disturbance that could be required.

SCE's Response: *For the four conventional towers, no access roads will be constructed.*

For the eight towers, the towers would either be constructed using helicopters or access roads.

Please let me know you if you have any questions or additional comments.
Thanks,
Jennifer

Jennifer Wolf
Jennifer.wolf@sce.com

O: 714-987-5225 (PAX: 56225)
C: 626-407-1256

From: Black, Kristi [mailto:KBlack@ene.com]
Sent: Thursday, December 03, 2015 11:09 AM
To: Alisa Krizek <Alisa.Krizek@sce.com>; Jennifer Wolf <Jennifer.Wolf@sce.com>
Cc: Uchida, Jensen <jensen.uchida@cpuc.ca.gov> (jensen.uchida@cpuc.ca.gov) <jensen.uchida@cpuc.ca.gov>; Ladd, Karen <KLadd@ene.com>; Thomas Burhenn <Thomas.Burhenn@sce.com>; Geetha Shanmugasundaram <geetha.shanmugasundaram@sce.com>; Bernice Goldsmith <Bernice.Goldsmith@sce.com>
Subject: (External):VIG/ASP follow up questions

Alisa and Jennifer,

We've reviewed the info SCE sent earlier this week and have a couple of follow up questions, again related to access road disturbance. I'm sending them over now in hopes that we can discuss on our call today so you can get a good idea of our line of thinking and what we're looking for.

Best,
Kristi

1. **SCE Response to Q4:** Note e states that temporary disturbance areas can be as wide as 200 feet; however, the temporary disturbance area is not included in the disturbance table. So the temporary access road disturbance acreage was calculated using a geometry calculation in GIS.

   Follow up: The new values included in SCE's response indicate that about 41 acres would be temporarily disturbed and about 19 acres would be permanently disturbed during construction for access roads. This acreage is equivalent to about 6.1 miles of roadway that is about 82 feet wide.
   Given this amount of disturbance in this location, and given the hilly terrain where access roads would be located, it is likely that this level of disturbance could result in significant impacts related to visual resources, biological resources, and geology and soils. To analyze these impacts, we request SCE explain why this large amount of temporary disturbance is anticipated to be needed. For example, as compared with similar projects (e.g., West of Devers), the amount of planned temporary disturbance seems disproportionate. Clarify where the temporary disturbance may take place. Describe what the temporary disturbance would entail (e.g., grading to level, vegetation removal).

2. **SCE Response to Q7:** The table [of disturbances] has been corrected [to exclude "with access roads"]. See the attached description in track changes.

   Follow up: Confirm that there would be no access roads needed to be constructed or improved to get to the four towers that are currently planned to be constructed conventionally. In addition, if it turns out that conventional construction is used instead at any of the eight towers that are currently planned to be constructed with helicopters, state whether roads would be constructed to facilitate access. If access roads may be needed at any of these eight towers, specify the sizes and locations of permanent and temporary disturbance that could be required.

ecology and environment, inc.

Kristi Black, *Planner*
505 Sansome Street, Suite 300, San Francisco, California 94111
Phone: 415-398-5326
kblack@ene.com • www.ene.com

Black, Kristi

From: Jennifer Wolf <Jennifer.Wolf@sce.com>
Sent: Monday, December 14, 2015 4:29 PM
To: Black, Kristi
Cc: Alisa Krizek; Geetha Shanmugasundaram; Bernice Goldsmith
Subject: RE: (External):SCE protocols for herbicide application?

Kristi,

Here is a narrative describing vegetation management activities and use of herbicides during O&M activities:

Vegetation management activities around poles is performed in compliance with existing state and federal laws, rules, and regulations. Only the minimum clearance required around the pole will be cleared. Brush and weeds typically are hand-cleared with power brush cutters (weed whackers). Brush and tree trimmings will usually be reduced using a mechanical chipper and scattered at site locations. Trimmings that cannot be chipped would be removed to a permitted disposal location or slashed and scattered. Debris would not be placed on sensitive resources, such as sensitive plant populations, or streams. If herbicides are used, then licensed herbicide applicators follow industry standard Best Management Practices (including product specifications) during application.

Please let us know if you have any additional questions.

Thanks,
Jennifer

Jennifer Wolf
Jennifer.wolf@sce.com
O: 714-987-5225 (PAX: 56225)
C: 626-407-1256

From: Black, Kristi [mailto:KBlack@ene.com]
Sent: Thursday, December 10, 2015 9:30 AM
To: Jennifer Wolf <Jennifer.Wolf@sce.com>; Alisa Krizek <Alisa.Krizek@sce.com>
Subject: (External):SCE protocols for herbicide application?

Hi Jennifer and Alisa,
Does SCE have its own protocols for herbicide application and vegetation management around poles and utility structures, which would be followed for VIG and ASP? If so, is that something you could email to me?
Thanks,
Kristi

ecology and environment, inc.

Kristi Black, *Planner*
505 Sansome Street, Suite 300, San Francisco, California 94111
Phone: 415-398-5326
kblack@ene.com • www.ene.com

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029 Supplemental

To: ENERGY DIVISION
Prepared by: Wendy Worthey
Title: Biologist
Dated: 03/01/2013

Question Q.01:

1.16.2.1.1 - As indicated in Data Request 1.16.2.1, the impact analyses completed for the pending Draft EIR assume that all work along the proposed 115-kV alignments would occur within the existing 115-kV ROWs and/or work areas no wider than 50 feet on each side of the centerlines of the existing 115-kV ROWs. The biological surveys submitted by SCE were reviewed to ensure that the areas surveyed for each species were large enough to include 100-foot-wide areas along the entire length of each 115-kV route. E & E prepared a draft table (attached) that identifies areas surveyed by species, vegetation, and habitat type and survey date. A number of the survey reports, however, do not specify or do not clearly specify the survey distance from the 115-kV alignments. For these surveys, E & E confirmed that the ROW of each 115-kV alignment was surveyed but could not confirm that additional areas were surveyed outside the ROWs.

The CPUC requests the following:

1. Provide the maximum distance that work activities could occur from the centerline of each 115-kV alignment;
2. Complete the table drafted by E & E (with additional documentation provided as needed) to confirm where survey distances were adequate or deficient given the maximum distance from 115-kV centerline specified (see item 1); and

3. For areas where surveys are determined to be deficient (if identified), discuss SCE's preferred path forward:
   (A) assuming presence;
   (B) providing additional survey data for all surveys found to be insufficient;
   (C) identifying all areas were work may be conducted farther than 50 feet from centerline and only supplementing surveys for those areas; or
   (D) other, e.g., limiting work to within 50 feet from centerline along each 115-kV alignment.

A0909022_Alberhill-Energy Division-SCE-029 Supplemental_Q.01_Attachment - Draft 115 kV Survey Extents Table 030113.docx

Response to Question Q.01:

1. The maximum distance work activities are anticipated to occur from the centerline of the 115 kV subtransmission line is 200 feet.

2. SCE completed and made corrections (see highlighted portions) to the attached Table *Draft 115 kV Survey Extents Table 031013_SCE-additions.docx.*

3. Based on information provided in the attached table, all biological surveys generally cover a 200-foot buffer on either side of the 115 kV centerline and were all conducted based on State and/or Federally-approved survey protocols.

1 attachment

Draft 115 kV Survey Extents Table 031013_SCE-additions.docx

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/25/2013

Question 01:

Question: **1.16.2.1**

1. The final SKR take agreement (Exhibit B) provided appears to include substantially larger disturbance areas for the proposed Alberhill System Project than accounted for in the data provided by SCE for the CEQA EIR. Refer to the Exhibit B pages demarked and attached as examples (Exhibit B pages 1 to 5 and 12). Explain the discrepancies.
2. Define the term *NAP* used in the legend of Exhibit B.
3. Explain why page 8 of 12 is included with Exhibit B. There are no project components identified in the EIR in this area.
4. Confirm that the disturbance area along the proposed 500-kV ROWs would be no more than 300-feet wide. The CPUC assumed a 300-foot disturbance width along the proposed 500-kV ROWs during construction to ensure space required for crane pads, as needed.
5. Confirm that the disturbance area along each of the 115-kV routes would be no more than 100-feet wide. In Exhibit B areas where the disturbance exceeds 100 feet along the 115-kV routes, confirm whether the disturbance would be outside the existing ROW for the proposed 115-kV subtransmission line routes. It is the CPUC's understanding that land would not be disturbed outside existing 115-kV ROWs. Impact analyses for the EIR were written with the assumption, for example, that pull sites could occur anywhere within the existing 115-kV ROWs. No assumptions were made that would allow for pull sites or other types of work sites to be set up outside of existing 115-kV ROWs except at the staging areas identified by SCE and evaluated in the Traffic Impact Analysis.
6. Where the disturbance areas delineated in Exhibit B of the final take agreement include pull sites or other types of work areas, identify these locations as such for analysis in the EIR and provide GIS data with corresponding, labeled data attributes.
7. Note that the CPUC may request that SCE update the disturbance area data provided in the PEA and updated by subsequent SCE data submittals for the CEQA EIR to match the disturbance areas delineated in Exhibit B of the final take agreement or per SCE's response to this data request (1.16.2.1). The CPUC may also request that SCE provide GIS data for all of the disturbance areas identified in Exhibit B of the final take agreement..

1.16.2.1 p. 8 to 12 Executed Agreement RCHCA - Exhibit B - ALBERHILL ONLY.pdf

1.16.2.1 p. 1 to 3 Executed Agreement RCHCA - Exhibit B - ALBERHILL ONLY.pdf

1.16.2.1 p. 4 to 7 Executed Agreement RCHCA - Exhibit B - ALBERHILL ONLY.pdf

Response to Question 01:

1. The shaded area on Exhibit B provides an estimate of the maximum boundary within which the Alberhill System Project would be sited. The actual estimated impact acreage for the Alberhill System Project is substantially less than the acreage covered by the shaded area in Exhibit B. As shown in Exhibit F and the attached updated Tables 3.3 and 3.4, the temporary disturbance areas for construction of the 500 kV transmission line and 115 kV subtransmission line could be as large as 200' x 100'. Since the actual orientation of these temporary construction areas is unknown at this time, a larger disturbance area was depicted on Exhibit B to ensure that SCE captured the potential areas that would be disturbed during construction.

2. The term NAP is short for Not a Part; this is the portion of the Alberhill subtransmission line that will double-circuit the Valley-Ivyglen 115 kV subtransmission line. The fees associated with ground disturbance for installation of the Valley-Ivyglen subtransmission line will be captured under that project. Once the fees have been paid for the VIG project, take is granted for that area, therefore additional take is not needed for the Alberhill 115 kV subtransmission line for that same area.

3. Page 8 of 12 depicts the location of Tenaja Substation. Section 3.1.4.2 of the PEA identifies Tenaja Substation as one the substations that would require new telecommunications equipment within the telecommunications room.

4. Confirmed.

5. As shown in the attached Tables 3.3 and 3.4, temporary construction work areas for the 115 kV line range from 50 feet wide to 100 feet wide and as long as 200 feet. Wire stringing and pull sites may be slightly offset and/or angled to extend outside of the 115 kV right-of way. Also, at deflection points along the subtransmission line route, wire stringing and pull sites typically extend beyond the right-of-way. Additionally, although the work areas for LWS poles and TSPs are 100-feet-wide, these areas can be slightly offset from the pole line in order to avoid sensitive areas in the field. Since the location and orientation of these pole work areas, wire stringing, and pull sites are unknown at this time, a larger potential disturbance area boundary is necessary. As stated in the response to question 1, the actual estimated impact acreage for the Alberhill System Project is substantially less than the acreage covered by the shaded area in Exhibit B.

6. As stated in the response to question 5, the location and orientation of pole work areas, wire stringing, and pull sites are unknown at this time. Therefore, the shaded area on Exhibit B depicts a maximum boundary of potential disturbance. As stated above, the actual disturbance area for the construction of the subtransmission line is provided in Tables 3.3 and 3.4; the larger shaded area on Exhibit B allows for the flexibility necessary to avoid sensitive areas in the field

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 01/25/2013

Question 03:

Question: 12.1.3

For the Valley South 115-kV System, provide the recorded peak demand in megavolt amperes for 2012 and update the attached table through 2022.

12.1.3 Attachment load_table 2012-2021.pdf

Response to Question 03:

SCE is currently performing the required analysis for developing its 2013-2022 forecast and the approved forecasted values for the next 10-year planning horizon are expected to be available in the second quarter of 2013. At that time, SCE would be able to provide an updated version of the table.

However, in the interim, the recorded and adjusted 2012 values are provided below.

Valley South 115 kV System
2012 Recorded Value
928 MVA
2012 Adjusted Value
923 MVA

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Paul McCabe
Title: Senior Engineer
Dated: 01/25/2013

Question 04:

Question: 12.1.4

Confirm that the need date estimated for an operational Alberhill System Project is now June 2016.

Response to Question 04:

SCE is currently performing the required analysis for developing its 2013-2022 forecast and the approved forecasted values for the next 10-year planning horizon are expected to be available in the second quarter of 2013. At that time, SCE would be able to provide an updated Need Date for the Alberhill System Project.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Pamela Blue-Fraijo
Title: Transmission Estimator
Dated: 01/25/2013

Question 05:

Question: 14.12.2

4a. System diagrams submitted by SCE for the Alberhill System Project confirm that five 115-kV lines would exit the proposed Alberhill Substation. Two would go to Ivyglen Substation, two would go south toward Elsinore Substation and Skylark Substation, and one would head in the direction of Valley Substation. Refer to the attached figure (labeled 2-7a), which was created based on GIS data provided by SCE. Confirm that the existing (green) single-circuit 115-kV Valley–Elsinore–Ivyglen line is shown on the wrong side of the road immediately south of the proposed Alberhill Substation site.

4b. In addition to the two poles proposed on each side of the I-15 crossing located immediately southwest of the proposed Alberhill Substation site, describe reconductoring (if any) that would occur across I-15 at this location. Would a double-circuit 115-kV line be installed (i.e., reconductoring) across I-15 at this location as part of the Alberhill System Project that would replace a segment of the single-circuit 115-kV line? It is the CPUC's understanding that the two poles would be installed as part of the Alberhill System Project and not as part of Valley–Ivyglen line construction. If not, please explain. See also Alberhill PEA p. 3-11, which states that the modification of existing 115-kV facilities would include replacing two existing poles with new poles at an existing I-15 freeway crossing.

4c. Depending on the response to Data Request 4b, it may be necessary update the visual simulation provided by SCE (see attached)

4d. Confirm whether the black-and-white dashed line adjacent to the proposed Alberhill Substation's southern boundary should be listed as a double-circuit 115-kV line or whether a segment of the existing (green) single-circuit 115-kV Valley–Elsinore–Ivyglen line would be reconductored to have two circuits from Alberhill Substation southwest and across I-15

14.12.2 Attachment Visual Sim_Northbound I-15_View NW to Substation.jpg

14.12.2 Attachment Draft EIR Fig 2-7a Project Components .jpg

Response to Question 05:

4a) The existing Fogarty-Ivyglen 115 kV line (formerly the Valley-Elsinore-Ivglen 115 kV line)

is currently located on the southerly side of Temescal Canyon Rd immediately across the street from the proposed Alberhill Substation.

4b.) This location is not final engineered to date; however, this freeway crossing will result in a double circuit crossing as part of the Alberhill Project. The existing single circuit crossing at this location is 653 aluminum conductor steel reinforced (ACSR). These conductors will remain and be utilized for the Alberhill Project after the Valley-Ivyglen 115 kV has been constructed and the Valley-Ivyglen 115 kV is looped into the Alberhill substation. As part of looping the Valley-Ivyglen 115 kV into Alberhill Substation, a new 115 kV circuit crossing is proposed at this freeway crossing and will be either 653 ACSR or 954 stranded aluminum conductor (SAC) to be determined during final engineering. The existing tubular steel poles (TSP's) that support this single circuit freeway crossing are currently designed to accommodate six 653 ACSR conductors across the freeway. Three conductors currently cross the freeway at this location (Fogarty-Ivyglen 115 kV -formerly the Valley-Elsinore-Ivyglen 115 kV). If the existing conductor angles or span lengths do not change dimensions or angles as a result of final engineering on the Alberhill Project and/or any final engineering impacts on the proposed Valley-Ivyglen 115 kV Project, these TSP's would be proposed to remain in their existing locations (not replaced) and a new 653 ACSR circuit will be strung across the freeway resulting in the double circuit crossing to accommodate the Alberhill Project (thus looping in the Valley-Ivyglen 115kv). If the angles and/or span lengths do change based on final engineering and the TSP's crossing the freeway require replacement, these two TSP's would be replaced on the Alberhill Project and the existing 653 ACSR conductor would be removed, with all new installation conductors at this freeway crossing proposed as 954 SAC for the Alberhill Project.

4c.) The visual simulation is acceptable unless the CPUC feels it needs to be modified in order to define the double circuit crossing the freeway more clearly. Whether the TSP's are replaced or not, this crossing will result in a double circuit crossing for the Alberhill Project.

4d.) The segment of the existing (green) single-circuit 115 kV Fogarty-Ivyglen (formerly the Valley-Elsinore-Ivyglen 115 kV) line in question is proposed to have two circuits from Alberhill Substation southwest and across the I-15. Please see above (4b) for information on the conductors existing and proposed for the I-15 crossing.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 01/25/2013

Question 08:

Question: 14.13.1

1. Please review the initial draft project description EIR sections (attached) that describe work that would be conducted within and near the Lake Mathews/Estelle Mountain Reserve Core Reserve. For context, additional draft text was also provided. Please review this text and provide revisions as necessary. Relevant initial draft project description figures were also provided for review.

   Note that areas highlighted in green in the attached initial draft project description document indicate that the text was flagged specifically for SCE review. All revisions to the attached initial draft project description are requested in track changes.

2. Ensure that the following data, among others identified by SCE, are provided or confirmed by SCE's review of the attached documents:

   2a. Lengths of the two proposed transmission lines are 1.6 miles and 1.7 miles.

   2b. No additional towers are now planned "space reserved" for additional towers near the Alberhill Substation. The current design is for two double-circuit towers at 500-kV tower sites VA1 and SA1 (Figure 2-5, attached).

   2c. The full extents of all areas where Core Reserve and BLM land access may be require have been specified (i.e., areas near the proposed sites for 500-kV towers SA6 and VA6 and existing 500-kV tower sites M13-T4, M13-T3, and M13-T2).

   2d. Two or more Core Reserve access days would be required for grounding (and removing grounds) in addition to the two Core Reserve access days required for snubbing (one to install and one to remove snubs) depending on when the proposed 500-kV tower foundations would be constructed.

   2e. Between one and two conductor phases (bundles with two conductors per bundle) would be installed to towers M14-T2, M14-T1, M13-T3, and M13-T2 and the proposed 500-kV towers VA6 and SA6. Multiple towers would be used for snubbing to ensure that the weight of the conductors does not damage any of the towers along the 500-kV transmission line.

Conductor would also be snubbed as needed to the other proposed 500-kV towers (SA1 to SA5 and VA1 to VA5) as needed during conductor and overhead ground wire installation from the proposed substation, upslope, to the Serrano–Valley 500-kV Transmission Line.

2f. Access to the Core Reserve for snubbing would be required twice: first to snub the conductors and overhead ground wire and then to remove the snubs. Snubbing would take approximately one workday. Snub removal would also take approximately one workday. The 500-kV transmission line would be grounded for the duration of the snubbing period. Once snubbed, the conductor and overhead ground wire snubs would not be removed until conductor and overhead ground wire installation for proposed 500-kV Line SA and 500-kV Line VA is completed.

2g. The applicant estimates that the Serrano–Valley 500-kV Transmission would be de-energized for a minimum of 14 days to install the proposed 500-kV conductor and overhead ground wires. The maximum length of the electrical outage would be determined by the California Independent System Operator.

3. Describe *slack spanning* and how the technique would apply to wire stringing for the proposed 500-kV transmission line alignments. It is the CPUC's understanding that to avoid or minimize locating equipment within the Lake Mathews/Estelle Mountain Core Reserve or on land managed by the Bureau of Land Management, *slack spanning* would be required.


14.13.1 Attachment Draft Project Description.doc


14.13.1 Attachment Draft Fig 2-5.jpg


14.13.1 Attachment Draft Fig 2-6.jpg


14.13.1 Attachment Draft Figure 2-8.jpg

Response to Question 08:

1. Attached is the initial draft project description with SCE's suggested revisions.

2a. Confirmed, Line VA would be approximately 1.6 miles long and Line SA would be approximately 1.7 miles long.

2b. Confirmed.

2c. Confirmed.

2d. The tower foundations are proposed to be constructed prior to wire snubbing. Access to the tower sites could occur twice a day during the foundation installation; once to install grounds and once to remove them.

2e. Confirmed.

2f. Confirmed.

2g. Confirmed.

3. Slack spanning would be utilized to avoid or minimize locating equipment within the Core Reserve or on land managed by the Bureau of Land Management. Slack spanning is utilized only on short wire pulls in areas where stringing sites are minimal and where shorter conductor leads and lesser tensions are applied so that the tower loading specifications are not exceeded.

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-029 Supplemental

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 03/01/2013

Question Q.02:

14.12.2.1 - E & E updated Figure 2-7a for inclusion in the Draft EIR based on SCE's response to Data Request 14.12.2.1 (see attached).

1. Confirm that the updated figure is correct (see 115-kV Segment 1 and 115-kV Segment 1.5). If incorrect, provide updated GIS data for

(A) the 115-kV Fogarty–Ivyglen Subtransmission Line alignment;
(B) the route of the proposed segment of this line that would be double-circuited along the south side of Temescal Canyon Road (assumed to be about 1,350-feet long); and
(C) the route of the singlecircuit line that would extend across Temescal Canyon Road to loop-in to the proposed Alberhill Substation (assumed to be about 550-feet long). Note that the EIR will assume that the two TSPs adjacent to I-15 will be replaced to ensure that environmental review was completed if this action is required.

2. Provide the number, type, and height of each structure that would be removed and installed in addition to the two TSPs that may be replaced adjacent to I-15. The CPUC assumes that 4 to 6 wood poles would be replaced along the south side of Temescal Canyon Road between the I-15 overpass and a point near the intersection of Temescal Canyon Road and Love Lane to accommodate the proposed doublecircuiting of the existing single-circuit line.

3. Provide updated disturbance calculations.

A0909022_Alberhill-Energy Division-SCE-029 Supplemental_Q.02_Attachment - Draft Fig 2-7a Project Components 030113.jpg

Response to Question Q.02:

1. SCE has reviewed the figure and has a two comments. Segment 1 should be referred to as "Proposed double-circuit 115 kV subtransmission line" as each of the two lines exiting Alberhill Substation will be double-circuit. Additionally, it is estimated that approximately four LWS poles that will be installed along Concordia Ranch Road as part of the Valley-Ivyglen Subtransmission Line Project will be replaced with four LWS poles (approximately 1,000 feet from the intersection of Concordia Ranch Road and Temescal Ranch Road).

2. Final engineering data is not available for this location at this time. SCE estimates that approximately six wood poles would be removed and replaced with four LWS poles and two TSPs on Temescal Canyon Road between the freeway and approximately 250 feet west of Love Lane. These 2 TSP's are not the two TSPs that may need to be replaced adjacent to the freeway crossing. The pole heights for these TSPs and LWS poles will be designed within the criteria provided in the response to Data Request 7.16.

3. The disturbance tables have been updated to include the additional poles (see attached).

RCHCA

RIVERSIDE COUNTY HABITAT CONSERVATION AGENCY

A Joint Powers Authority

March 25th, 2013

Mr. Jensen Uchida
Project Manager
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102

Subject: Southern California Edsison's Alberhill Systems Project

Dear Mr. Uchida,

The Riverside County Habitat Conservation Agency (RCHCA) concurs with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife's letter dated March 20th, 2013 regarding the work activities for the proposed Alberhill Systems Project within the Lake Mathews / Estelle Mountain Reserve (LMR).

If you have any questions regarding this letter, the LMR, or the SKR HCP please feel free to contact Brian Shomo, Natural Resources Manager, 951-955-4325 or Gail Barton, Principal Planner, 951-955-6637.

Sincerely,

Carolyn Syms Luna

Carolyn Syms Luna
Executive Director
Riverside County Habitat Conservation Agency

4080 Lemon Street, 12th Floor • Riverside, California 92501 • (951) 955-6097
P.O. Box 1605 • Riverside, California 92502-1605 • Fax (951) 955-0090

Southern California Edison
Alberhill PTC & CPCN A.09-09-022

DATA REQUEST SET Alberhill-Energy Division-SCE-030

To: ENERGY DIVISION
Prepared by: Ying He
Title: Planner - Power System 4
Dated: 07/23/2013

Question Q.01-04:

The following data request was generated in response to the attached presentation by the CAISO on 7/15/13. The CAISO presented a review of electricity infrastructure issues resulting from the closure of SONGS to the CEC and CPUC at a joint workshop (see attachment) . Near term (2014 to 2017), midterm (2018 to 2020), and long term (2021-2022) options for addressing projected thermal overloading and voltage instability issues were discussed. Among the options that would add new transmission are three potential projects that would connect to Alberhill Substation (refer to slide 12 on the attached).

1. Discuss SCE's position regarding the three transmission projects identified by the CAISO that would connect to Alberhill.

2. What future lines does SCE currently plan to connect to Alberhill Substation in addition to or other than a Valley–Serrano #2 500-kV transmission line and a potential Talega–Escondido/Valley-Serrano transmission line.

3. During what CAISO transmission planning timeframe might the construction of one or both of these lines be necessary? Clearly explain the rational for this response.

4. Discuss Alberhill Substation's ultimate build out with regard to accommodating 500-kV lines. Confirm that the current design is for the accommodation of a total of five 500-kV positions (two for Valley–Serrano #1; two for Valley–Serrano #2; and one additional).

Response to Question Q.01-04:

1. **From SCE's point of view, these three projects are conceptual. The three projects are all 500 kV lines and will likely require new rights of way and lengthy licensing processes once the Project Applications enter CPUC CPCN proceeding. CAISO mentioned these alternative transmission projects at the July 15 Joint Committee presentation. CAISO has not completed their technical analysis, which is expected to be completed by March 2014.**

2. **Other than the Serrano – Valley 500 kV line #2 project and provision for the LEAPS**

Project, SCE does not have plans for additional 500 kV lines connecting to Alberhill Substation (see the response to DR question #3).

3. The Valley–Serrano #2 500 kV transmission line is identified beyond the 10-year planning horizon and currently, its operating date is still under review as to when significant generation from the East would require this delivery upgrade. The Talega–Escondido/Valley-Serrano 500 kV line is using a portion of the LEAPS project, which is in the CAISO's Generation Interconnection Queue. The project need and schedule are dictated by its sponsor, Nevada Hydro. It is a third party proposal and is independent from SCE's Alberhill Substation Project. Additional information can be found at www.interconnectproject.com.

4. The current ultimate design for Alberhill is to accommodation a total of six 500 kV lines, four transformers, and two capacitor banks.

FIGURE D-6
ASP Site 8
Potential Sensitive Species/Habitats

Kidd BIOLOGICAL INC.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG and ASP-ED-SCE-Data Request C

To: ENERGY DIVISION
Prepared by: Jennifer Wolf
Title: Project Manager
Dated: 08/05/2015

Question C1:

Review the Project Commitments in Attachment 1 and confirm their completeness, accuracy, and applicability to both proposed projects.

2015-0730 VIG_ASP Data Request C.docx

Response to Question C1:

Please see the attached.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request B

To: ENERGY DIVISION
Prepared by: Tammy Yamasaki
Title: Air Quailty Specialist
Dated: 07/21/2015

Question A2.2:

Air Quality and GHG: Valley-Ivyglen

Table 17 of the Air Quality and GHG emissions calculations for the Valley–Ivyglen Project include emission factors for Off-site Helicopter Exhaust during conductor installation. During verification of the Construction Equipment Exhaust Emission Factors table, it was noted that sources of information for the Hughes 500E Helicopter GHG emission factors are dated 2008 (California Climate Action Registry General Reporting Protocol, April 2008). The CCAR published an updated protocol in March 2013 and updated emission factors in 2015. Clarify if helicopter emission factors provided in Table 17 have been updated to reflect the new estimated construction start year (2016).

Response to Question A2.2:

The helicopter fuel emission factor for CO2 and associated reference has been updated according to the CCAR updated emission factors published in April 2015. Changes to the attached spreadsheet (VIG Complete AQ Appendix_Emission Factor Update_7-31-15.xls) are noted in purple text for ease of review. Total Project CO2e emissions have increased 0.3%, but no thresholds will be exceeded and impacts to GHGs continue to be less than significant.

Unlike heavy duty diesel equipment emission factors, the criteria pollutant helicopter emission factors are not directly dependent upon construction start year, and therefore are still considered applicable. No updates were made to criteria pollutant helicopter emission factors.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request D

To: ENERGY DIVISION
Prepared by: Greg Hasty
Title: Transmission Estimator
Dated: 08/05/2015

Question 01 (D1):

Discuss the feasibility of undergrounding the entirety of 115-kV Segment VIG2 along State Route 74. If undergrounding all of 115-kV Segment VIG2 is infeasible, please describe what portion(s) of the segment could be feasibly undergrounded.

Response to Question 01 (D1):

Attached is a PDF map showing the approximate structure types, sizes, and locations for an underground route extending along the northwest side of SR-74 between the 500 KV Transmission Lines, north of Festus Circle and Conard Street. This alternative route would begin approximately 500 feet north of Festus Circle at a new TSP riser located on the northeast side of the 500KV Line ROW. From this point the overhead line would convert to underground, cross under SR-74 to the northwest side of SR-74 in the Transmission Line ROW to a new vault and then continue underground along the northwest side of SR-74 to Conard Street. This alternative would require approximately 4.2 miles of duct bank, 20 vaults and two TSP riser poles. This alternative would be installed as described in Section 2.2.3 of the PMR.

However, while feasible, this alternative would not be preferred for the following reasons:

1: It would require encroachment permits from Caltrans.

2: Due to safety concerns during construction and maintenance activities, SCE prefers to place underground structures outside of the traffic lanes within the Caltrans ROW. However, SCE does not have base maps for this area providing detailed locations of existing underground utilities which could potentially conflict with this proposed underground alternative.

3: Caltrans easements and acquisition of property rights may be required for installation of SCE structures and conduits..

4: Constructing the entire segment underground would have greater impacts to traffic than the Proposed Project, as a greater portion of the Project would be installed underground, requiring an extended construction period and lane closures; however, impacts would remain less than significant.

5: An underground alternative would have a greater impact to air quality than the Proposed Project, as a greater portion of the Project would be installed underground, requiring increased ground disturbance and construction equipment use; however, impacts would remain significant and unavoidable.

The structure type and locations of alternative project components may change based upon the

following: the completion of final engineering, any changes to existing field conditions, the identification of yet -unknown field conditions, system outage constraints, any incremental environmental or permitting requirements, or similar factors. Features depicted on the PDF map are at the planning level accuracy, and should not be considered as engineering-level work. Distances and locations may be distorted at this scale.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request F

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 09/01/2015

Question 01 (F2):

SCE's response to Question B4.2 stated that a water source has not been identified for the 36 million gallons of water required during construction of the Valley–Ivyglen 115-kV Subtransmission Project.

Please provide more detail:
A. Identify a potential source or potential sources of water for construction and assurance that the source(s) can provide water for construction.
B. Describe how water would be delivered to the project site for construction (e.g., through existing infrastructure or through trucks). If water would be trucked, provide detail about truck trips (i.e., number of trucks, distance of
average trip).

Response to Question 01 (F2):

A. Listed below are three potential water purveyors that are located in the project area. Prior to construction, SCE will submit applications for temporary floating meters to connect to District fire hydrants to draw water for temporary construction needs.

   a. Eastern Municipal Water District (EMWD)
      i. EMWD has four existing sources of water supply: imported water from MWD, recycled water, local groundwater production and desalted groundwater. Imported water from MWD is either delivered directly as potable water, delivered to EMWD as raw water and then treated at two local filtration plants owned and operated by EMWD or delivered to EMWD as raw water for non-potable use. (http://www.emwd.org/home/showdocument?id=1506)
   b. Elsinore Valley Municipal Water District (EVMWD)
      i. EVMWD's water supply is a blend of local groundwater, surface water from Railroad Canyon Reservoir (Canyon Lake), and imported water. On average, half their supply is imported. Annual water production in the Elsinore Division is about 27,000 acre-feet. http://www.evmwd.com/depts/engineering/water_quality/water_sources.asp
   c. Temescal Valley Water District (TVWD)/ Lee Lake Water District (LLWD)

i. TVWD receives all of its water supply from the Metropolitan Water District via the Mills Pipeline. The Mills Pipeline serves other communities besides those served by Temescal Valley Water District including part of the City of Corona, Eagle Valley Area and other areas within the unincorporated Riverside County. All water delivered to Temescal Valley Water District is imported from Northern California via the State Water Project system. Once transferred to Southern California, the imported water is provided full water treatment at the Mills Water Filtration Plant located on Alessandro Boulevard.

B. Water trucks would fill up as needed along the Project route at various approved District fire hydrants by connecting a temporary floating meter.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 09/10/2015

Question 01(G1.1):

In Section 2.4.4.1, SCE revised water usage for the Valley–Ivyglen Project from 36 million gallons to 56 million gallons.

A. Clarify if the increase in water use is due to the commitments contained in Project Commitment J.

Response to Question 01(G1.1):

The original water usage computation was based on 480 acres of land disturbance. The water usage computation was revised to account for the 616 acres of land disturbance identified in Table 2-5 of the Draft Project Description.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Dave Reddecliff
Title: Planner 3 Distribution
Dated: 09/10/2015

Question 02(G2):

In Section 2.4.5.3, SCE added 600 to 2,500 feet of trenching to relocate distribution underground.

A. Provide location(s) where SCE would underground relocated distribution lines.

B. Specify whether blasting would be needed for the underground distribution work.

C. Provide air quality emissions estimates for the underground distribution work.

Response to Question 02(G2):

A. SCE anticipates two locations where existing underground distribution would need to be relocated. One location would be on Temescal Canyon Road near Indian Truck Trail. The other location would be on Temescal Canyon Road between Hostettler Road and I-15.

B. Blasting would not be required for this underground distribution work.

C. SCE has modified the VIG emissions calculation spreadsheets to include the Underground Distribution activity. Additions to the calculations are indicated in purple text. Please refer to Table 24UGD, Underground Distribution. This includes emissions from off-road equipment, on-road equipment, soil handling and soil storage piles during vault installation and trenching. Modified spreadsheets are attached as "VIG Complete AQ Appendix_Underground Distribution_09-29-15.xls.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Jennifer Wolf
Title: Project Manager
Dated: 09/10/2015

Question 03(G5):

In Table 2-3, SCE revised the schedule to state that "VIG: Telecommunication" would begin in Summer 2017 and would last for 28 months. At the earliest, SCE would finish the project in Winter/late 2019. Revised Table 2-3, however, shows VIG as being operational by Spring 2018.

A. Provide a rationale for the apparent discrepancy or revise the schedule to address the apparent discrepancy.

Response to Question 03(G5):

SCE's proposed edit to the "VIG: Telecommunication" schedule, in the draft project description, is not correct. The duration for the telecommunications work should be to 7 months, not 28 months. The telecommunications work would begin in Summer 2017 and would be completed in Winter 2018.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 09/10/2015

Question 04(G7):

In Table 2-8, SCE added several new staging areas.

A. A portion of Staging Area VIG11 is located in hilly terrain. Specify the portion of the staging area SCE would use for materials staging. Provide updated kmz file if the use area differs from the current outline of Staging Area VIG11.

B. State which, if any, of the added staging areas would be used for helicopter operations, such as landing/takeoff, refueling, and equipment delivery and pickup.

Response to Question 04(G7):

A. SCE does not plan to utilize the hilly terrain for the staging area. The attached kmz identifies the portion of the parcel that would be utilized.

B. All of the added staging areas for the Valley-Ivyglen Project, with the exception of VIG12, would be used for helicopter operations.

Southern California Edison
Valley-Ivyglen 115 kV Subtransmission Line Project A.07-01-031

DATA REQUEST SET VIG-ED-SCE-Data Request G

To: ENERGY DIVISION
Prepared by: Alisa Krizek
Title: Environmental Coordinator
Dated: 09/10/2015

Question 05(G8):

In Table 2-1, SCE added a row for new telecommunications equipment installed at Valley and Ivyglen substations as part of the Valley–Ivyglen Project. SCE did not provide details about what this equipment would be.

A. Specify what equipment would be installed at Valley and Ivyglen Substations.

B. Specify whether all the equipment would be installed within the telecommunications rooms at each substation.

Response to Question 05(G8):

A. SCE would install new equipment at both the Valley and Ivyglen Substation as described in Sections B.3.4 and B.4.4 of the 2010 DEIR.

B. SCE would also install new protective equipment inside the MEERs at both the Valley and Ivyglen Substation as described in Section B.4.2.1 of the 2010 DEIR