2.2 Topography

The subject property is located on the United States Geological Survey (USGS), Pala, 7.5-Minute Quadrangle (USGS, 2012). Overall, the subject property is located on moderately sloping terrain consisting of varying topographic relief. The subject property elevation ranges from approximately 795 feet above mean sea level (amsl) at its lowest point at its western end, to approximately 950 feet bgs at its eastern end at West Lilac Road. Based on topographic relief, surface water drainage in the site vicinity appears to be predominately to the west and southwest.

2.3 Regional and Local Geology

The subject property and vicinity lies within the Peninsular Ranges Geomorphic Province of California (CGS, 2002). The Peninsular Ranges Geomorphic Province extends from the Transverse Ranges Geomorphic Province and the Los Angeles Basin, south to Baja California. This province varies in width from about 30- to 100-miles. It is bounded on the west by the Pacific Ocean, on the south by the Gulf of California and on the east by the Colorado Desert Province. The Peninsular Ranges are essentially a series of northwest-southeast oriented fault blocks. The Transverse Ranges Geomorphic Province bounds the Peninsular Ranges on the north.

Major fault zones and subordinate fault zones found in the Peninsular Ranges Province typically trend in a northwest-southeast direction. The closest major faults to the subject property are the Julian segment of the Elsinore Fault zone; the Rose Canyon Fault zone; and the Coronado Bank Fault zone (including the San Diego Trough Fault). Other major faults in the region include the San Jacinto Fault zone and the San Andreas Fault zone. The San Andreas Fault zone is considered the most active fault zone and borders the northeasterly margin of the province.

Geologic maps indicate the general vicinity of the subject property is underlain by Mesozoic aged (Cretaceousage) granitic rocks (Tan, 2000). Specifically, the property is underlain by Tonalite of Couser Canyon, described as a Hornblende-biotite tonalite; coarse grained and massive. This Tonalite contain some granodiorite and is characterized by an abundance of pegmatite dikes.

Soils beneath the project site and vicinity have been identified by the United States Department of Agriculture – Natural Resources Conservation Service, Web Soil Survey as mainly course sandy loams of the Cieneba (CID2) soil series (USDA, 2012). The Cieneba series consists of very shallow and shallow, somewhat excessively drained soils that formed in material weathered from granitic rock. Cieneba soils are on uplands and have slopes of 9 to 85 percent. These soils are somewhat excessively drained, have low to medium runoff, and moderately rapid permeability in the soil, but much slower in the weathered granite.

2.4 Regional and Local Hydrogeology

According to the San Diego Regional Water Quality Control Board (SDRWQCB, 1994), the subject property is located within the groundwater designation of the Bonsall Subarea (HSA – 903.12), which is a part of the lower San Luis Hydrologic Area (HA – 903.10) and located within the San Luis Rey Hydrologic Unit (HU – 903.00). Groundwater beneath the San Luis HA has been identified as having existing beneficial uses for municipal, agricultural, and industrial supply processes.

EEI reviewed the California Department of Water Resources, Water Data Library website (WDL, 2012) for additional information pertaining to groundwater and water supply wells on or close to the subject property. According to the website, there no water supply wells located in the immediate site vicinity.

2.5 Hydrologic Flood Plain Information

EEI reviewed the Federal Emergency Management Agency (FEMA, 2012) Flood Insurance Rate Map (FIRM) online database to determine if the subject property was in a flood zone. According to the information reviewed on FIRM 06073C0515G Panel 515 of 2375 (revised May 2012), the subject property is situated within Zone X. Zone X is designated as being areas of 500-year flood; areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile, and areas protected by levees from 100-year flood. A copy of the FIRM is included in **Appendix B**.

3.0 SUBJECT PROPERTY BACKGROUND

3.1 Subject Property Ownership

Given that the subject property consists of vacant land associated with a proposed existing roadway expansion project, the property owner information was not readily available.

3.2 Subject Property History

EEI reviewed readily available information sources to evaluate historic land use in and around the subject property. These information sources include information from aerial photographs, USGS maps and the County of San Diego. The information sources reviewed is summarized in the following sections.

3.2.1 Aerial Photograph and Historical Map Review

Aerial photographs and historical topographical maps were reviewed to identify historical land development and any surface conditions which may have impacted the subject property. Photographs and historical topographic maps dating 1946, 1949, 1953, 1963, 1976, 1980, 1982, 1988, 1990/91, 2002, 2008, and 2012 were obtained and reviewed from Track Info Services/FirstSearch®, an environmental information/database retrieval service. A 2010 aerial photograph was obtained from Google Earth® and reviewed, a copy of which is included herein (**Figure 2**).

Table 1 summarizes the results of the historical use review. Copies of the aerial photographs and historical topographic maps provided by Track Info Services/FirstSearch® are included in **Appendix C**. According to the information reviewed, West Lilac Road and Rodriguez Road were present in the site vicinity since at least 1947. In 1953, Covey Lane was present. The subject property has mainly been bordered by a mix of undeveloped land, agricultural land and rural residential development since at least the 1940s. No significant offsite development, including commercial or residential development, was noted in the site vicinity.

TABLE 1
Summary of Historical Use Review

Year	Source and Scale	Comments
1946	Aerial Photograph 1:685	West Lilac Road was present. Rodriguez Road appeared as a narrow unimproved road. The surrounding area appeared with a mix of sparse agricultural and rural residential development.
1949/1951	Topographic Map 1:24,000	West Lilac Road was present as the major roadways in the site vicinity. Sparse rural residential development was noted adjacent to the major roads and in the surrounding area.
1953	Aerial Photograph 1:685	Covey Lane appeared as a narrow unimproved road which intersected with West Lilac Road. Increased agricultural and structural development appeared in the surrounding area.
1968	Aerial Photograph 1:685	No apparent changes were noted on the site vicinity; with the exception of increased agricultural and structural development in the surrounding area.
1976	Aerial Photograph 1:685	No apparent changes were noted on the site vicinity; with the exception of increased agricultural and structural development in the surrounding area
1980	Aerial Photograph 1:685	No apparent changes were noted on the site vicinity; with the exception of increased agricultural and structural development in the surrounding area
1982/1988	Topographic Map 1: 24,000	No apparent changes were noted on the subject property or adjacent property. Increased development of roads and structures appeared in the surrounding area.
1990/91	Aerial Photograph 1:685	No apparent changes were noted on the site vicinity; with the exception of increased development in the surrounding area.
2002/2008	Aerial Photograph 1:685	No apparent changes were noted in the site vicinity.
August 2010	Aerial Photograph Google Earth®	The subject property and adjacent and surrounding property appeared in its current configuration. A mix of agricultural land and rural residential development appeared in the site vicinity.
2012	Topographic Map 1:24,000	Covey Lane now ran east-west and intersected with West Lilac Road. Developed roads appeared in the surrounding area.

3.2.2 City/County Directory

Due to the absence of structural development on the subject property, and therefore, the lack of directory information, as well as the agricultural and rural land uses of the surrounding area, this information source was not researched as it was not deemed to be sufficiently useful.

3.2.3 Sanborn Fire Insurance Maps

Sanborn Fire Insurance maps were developed in the late 1800s and early 1900s for use as an assessment tool for fire insurance rates in urbanized areas. An on-line search was made at the Los Angeles County Public Library's collection of Sanborn Fire Insurance maps (LAPL, 2012). Sanborn map coverage was not available for the subject property and/or surrounding area; therefore, indicating little or no development prior to the 1950s.

3.2.4 County of San Diego Department of Planning and Land Use

Due to the absence of structural development on the subject property, and therefore, the lack of any associated address or building permit records, this information source was not researched as it was not deemed to be sufficiently useful.

3.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the subject property, as well as adjacent sites with known environmental concerns. Facilities were identified by county, state, or federal agencies that generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from FirstSearch®, an environmental information/database retrieval service. A copy of the FirstSearch® report is provided in **Appendix D,** along with a description of the individual databases. The subject property was not listed on any of the databases researched.

3.3.1 Federal Databases

National Priority List (NPL) – No listings were reported within one mile of the subject property.

NPL Delisted – No listings were reported within one-half mile of the subject property.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – No listings were reported within one-half mile of the subject property.

CERCLIS (NFRAP) Archive – No listings were reported within one-half mile of the subject property.

Resource Conservation and Recovery Information System (RCRA) Corrective Action Sites (COR) – No listings were reported within one mile of the subject property.

RCRA TSD Facility List (RCRA-D) – No listings were reported within one-half mile of the subject property.

RCRA Generators (RCRA-G) – No listings were reported within one-quarter mile of the subject property.

RCRA No Longer Regulated (NLR) – No listings were reported within one-eighth mile of the subject property.

Federal Brownfield – No listings were reported within one-quarter mile of the subject property.

Emergency Response Notification System (ERNS) – No listings were reported within one-eighth mile of the subject property.

The subject property was not identified on any of the above-referenced databases researched.

3.3.2 State and Regional Sources

Tribal Lands – One listing was reported within one mile of the subject property: **Bureau of Indian Affairs Contact I**. One nongeocoded site was listed as **Bureau of Indian Affairs Contact 1** (location unknown). Tribal lands listings are generally not locations or releases, but placeholders used to contact the local Bureau of Indian Affairs representative for information on tribal lands in the area.

State/Tribal Sites – No listings were reported within one mile of the subject property.

State Spills 90 – No listings were reported within one-eighth mile of the subject property.

State/Tribal Solid Waste Landfill (SWL) Sites – No listings were reported within one-half mile of the subject property.

State/Tribal California State Leaking Underground Storage Tanks (LUST) – No listings were reported within one-half mile of the subject property.

State/Tribal Permitted Underground Storage Tanks (UST)/Aboveground Storage Tanks (AST) – No listings were reported within one-quarter mile of the subject property.

State/Tribal IC/EC – No listings were reported within one-quarter mile of the subject property.

State/Tribal Voluntary Cleanup Program Properties (VCP) – No listings were reported within one-half mile of the subject property.

State/Tribal Brownfields – No listings were reported within one-half mile of the subject property.

State Permits – No listings were reported within one-quarter mile of the subject property.

State Other – No listings were reported within one-quarter mile of the subject property.

Oil and Gas Wells – No listings were reported within one-quarter mile of the subject property.

Federal IC/EC – Six listings were reported within one-quarter mile of the subject property.

Dry Cleaners – No listings were reported within one-quarter mile of the subject property.

Hazardous Waste Manifest – No listings were reported within one-quarter mile of the subject property

The subject property was not identified on any of the above-referenced databases researched.

3.4 Regulatory Agency Review

3.4.1 Deer Springs Fire Protection District

EEI contact the Deer Springs Fire Protection District (DSFPD) for information pertaining to hazardous waste releases, spills, incident, and/or inspection reports for the subject property. According to staff, the DSFPD does not hold records related to hazardous releases, spills, or UST permits and referred EEI to the County of San Diego Department of Environmental Health (see below). A search by personnel for incident or inspection reports related to the subject property revealed no records on file.

3.4.2 County of San Diego Department of Environmental Health

Due to the absence of development on the subject property, and therefore, the lack of an associated address, as well as the agricultural and rural residential land uses of the surrounding area, this information source was not researched as it was not deemed to be sufficiently useful.

3.4.3 State Water Resources Control Board

EEI reviewed the online database GeoTracker (2012), which provides records on LUSTs and Spills, Leaks, Investigation and Cleanup (SLIC) sites, which is maintained by the State Water Resources Control Board (SWRCB). Neither the subject property nor any adjacent or nearby properties were listed on any of the databases researched.

3.4.4 Department of Toxic Substances Control

EEI reviewed the online database EnviroStor (2012), which provides records on LUSTs, SLICs, Priority cleanup sites and states sites, which is maintained by the Department of Toxic Substances Control (DTSC). Neither the subject property nor any adjacent or nearby properties were listed on any of the databases researched.

3.4.5 Review of Division of Oil, Gas and Geothermal Resources Files

Oil and gas wells were not observed on the subject property during our subject property reconnaissance. A review of the California Division of Oil, Gas, and Geothermal Resources Website for oil and gas fields in California and Alaska (CDOGGR, 2012) indicated no petroleum exploration or production has occurred on or immediately adjacent to the subject property (identified as within Township 10S, Range 02W, Sections 19 and 30).

3.4.6 National Pipeline Mapping System

EEI reviewed the National Pipeline Mapping System (NPMS, 2012) public viewer website for gas transmission pipelines and hazardous liquid trunklines on or close to the subject property. According to the information reviewed, an unidentified pipeline parallels Old Highway 395 in the immediate site vicinity. No other information regarding the type of pipeline was provided. No other pipelines were noted in the site vicinity.

3.5 Interview with Current Property Owner

Based on the nature of the subject property consisting of vacant land associated with a proposed existing roadway expansion project, directive from the Client, and the fact that property owner information was not readily available, the property owner was not interviewed. Based on the information gathered from other readily available historical resources, including historic topographic maps, historic aerial photographs, and internet research, EEI does not consider the absence of this interview to effect the validity of this Phase I ESA.

3.6 User Provided Information

Pursuant to ASTM E1527-05, EEI provided a Phase I ESA User Specific Questionnaire to the "user" (the person on whose behalf the Phase I ESA is being conducted), in this case, Mr. Jon Rilling, with Accretive Investments, Inc., completed the questionnaire. The User Specific Information provided by Mr. Rilling is documented below. A copy of the user specific questions (per ASTM E1527-05) with Mr. Rilling's associated responses is included in **Appendix F**.

3.6.1 Environmental Liens or Activity and Use Limitations

Mr. Rilling stated that he is not aware of any environmental liens, land use limitations, deed restrictions or governmental notifications relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property.

3.6.2 Specialized Knowledge

Mr. Rilling did not indicate that he had any other specialized knowledge related to the subject property.

3.6.3 Valuation Reduction for Environmental Issues

Mr. Rilling stated that the subject property is road way easement property and land valuation is not applicable in this case.

3.6.4 Presence or Likely Presence of Contamination

Mr. Rilling indicated that he does not know of any specific issues related to past uses, specific chemicals, spills, releases, or cleanups which may have occurred on the property.

3.6.5 Other

Mr. Rilling noted that the Phase I ESA is required due to underwriting and county requirements related to county easement property. Mr. Rilling noted that he was not aware of any previous site investigation activities that have been conducted on the subject property.

3.7 Other Environmental Issues

3.7.1 Asbestos-Containing Materials

Asbestos, a natural fiber used in the manufacturing of a number of different building materials, has been identified as a human carcinogen. Most friable (i.e., easily broken or crushed) Asbestos-Containing Material (ACM) was banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. These materials, however, were not banned completely.

In October 1995, the Federal Occupational Safety and Health Administration (OSHA) redefined the manner by which building materials are classified in regards to asbestos and the also the way these materials are to be handled. Under this ruling, "thermal system insulation and sprayed-on or troweled on or otherwise applied surfacing materials" applied before 1980 are considered presumed asbestos containing materials (PACM). Other building materials such as "floor or ceiling tiles, siding, roofing, transite panels" (i.e., non-friable) are also considered PACM unless tested.

An ACM survey was not conducted at the subject property as part of this Phase I ESA. The subject property consists of vacant land associated with a proposed expansion of existing improved roadways. Based on this information, the presence of Asbestos-Containing Materials is not considered likely. It should be noted that field personnel observed an old, abandoned metal pipe extending from the ground in the drainage channel east of 9542 Covey Lane. The exposed pipe, situated over 30 feet from the north edge of the roadway, consisted of a white-colored wrap that appeared to contain asphalt (tar) resin and fibrous material. The fibrous material had characteristics similar to asbestos. The buried pipe appeared to be orientated in a northeast-southwest direction, and may be encountered near the northern edge of Covey Lane.

3.7.2 Lead-Based Paint

Lead-Based Paint (LBP) is identified by OSHA, the Environmental Protection Agency (EPA) and the Department Housing and Urban Development Department (HUD) as being a potential health risk to humans, particularly children, based upon its effects to the central nervous system, kidneys, and bloodstream. The risk of Lead-Based Paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950;
- a severe risk is present from paint applied before 1960;
- a moderate risk is present from paint applied before 1970;
- a slight risk is present from paint applied before 1977; and
- paint applied after 1977 is not expected to contain lead.

The subject property consists of vacant land associated with a proposed expansion of existing improved roadways. Based on this information, the presence of lead-based paint is not considered likely.

3.7.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. The U.S. EPA recommends that homeowners in areas with radon screening levels greater than 4 Picocuries per liter (pCi/L) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed the U.S. EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. U.S. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the US to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; and soil permeability, the U.S. EPA has identified the County of San Diego as Zone 3 (i.e., a predicted average indoor radon screening level less than 2 pCi/L). EEI does not consider radon as a significant environmental concern at this time.

3.7.4 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCB's) are used in electrical equipment, particularly in capacitors and transformers, because they are electrically nonconductive and stable at high temperatures. PCB's persist in the environment, accumulate in organisms, and concentrate in the food chain.

The disposal of these compounds is regulated under the Toxic Substances Control Act, which banned the manufacture and distribution of PCB's. By Federal definition, PCB equipment contains 500 parts per million (ppm) or more of PCB's, where PCB-contaminated equipment contains PCB concentrations greater than 50 ppm but less than 500 ppm. The US Environmental Protection Agency (EPA), under TSCA guidance, regulates the removal and disposal of all sources of PCB's containing 50 ppm or more.

Any electrical equipment containing dielectric insulating fluids or coolants, manufactured prior to 1976, should be considered as potentially PCB-containing. This includes transformers, capacitors, and fluorescent light fittings. In addition, PCB's may also be found as a stabilizer in older lubricating oils, pesticide extenders, cutting oils, hydraulic fluids, paints, sealants, and flame retardants (UNEP, 1999).

Overhead power lines were observed predominantly along the northerly side of Covey Lane, with lateral poles on the south. Pole mounted transformers were observed at a few locations. The electrical transformers appeared to be in good operating condition and no signs of leaking were noted.

Based on our experience with similar sites surrounding the subject property and San Diego County, PCB containing pole-mounted transformers is unlikely; therefore, is not considered an environmental concern at this time.

4.0 SUBJECT PROPERTY RECONNAISSANCE

4.1 Purpose

The purpose of our subject property reconnaissance was to visually and physically observe the subject property, structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous materials/substances or petroleum products into structures on the subject

property, or into soil and/or groundwater beneath the subject property. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon surface staining, waste drums, ASTs/USTs, illegal dumping, or improper waste storage/handling. Detailed information is provided in the text below.

4.2 Subject Property

On July 25, 2012, EEI personnel conducted a site reconnaissance to visually observe the subject site and adjoining properties for conditions indicating a potential recognized environmental concern. Visual conditions present during the site reconnaissance are documented in the Photographic Log (**Appendix F**), and summarized in **Table 2.**

Overall, the subject project is situated north of the City of Escondido. It is our understanding that the subject property consists of an approximately 2,700 linear foot section of Covey Lane west of Lilac Road. The roadway consisted of asphaltic concrete, with localized asphalt curb and no sidewalk improvements. Corrugated metal pipe (CMP), reinforced concrete pipe (RCP), and high density polyethylene (HDPE) pipe drainage under-crossings were noted. Irrigated residential landscaping was also observed along the edges of Covey Lane. Overall, small, very minor weathered surface soil discoloration was detected at a few locations along the shoulders of Covey Lane. Based upon our experience, this staining does not represent a recognized environmental concern.

Covey Lane is bounded by both rural residential properties and agricultural development. Horse property exists at the southeastern portion of the project area. Existing residential addresses range from 9542 Covey Lane (west end) to 9852 Covey Lane (east end). Agricultural development was found to include (but not limited to) avocado, fig, and citrus orchards as well as decorative flowering plants.

Utilities observed within the linear project area consisted of buried water lines and laterals (and associated hydrants, backflow preventors, blow off valves, and valve can clusters in the pavements), above ground power poles with transformers, above ground SDG&E vaults, and buried storm drain culverts.

Overhead power lines were observed predominantly along the northerly side of Covey Lane, with lateral poles on the south. Pole mounted transformers were observed at a few locations. The electrical transformers appeared to be in good operating condition and no signs of leaking were noted.

EEI personnel conducted a reconnaissance of the property by traversing the property from north to south then east to west to physically observe the property and adjoining properties for conditions indicating a potential recognized environmental concern. Concerns would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage and/or handling. No evidence of *recognized environmental conditions* was noted on the subject property during our subject property reconnaissance efforts. It should be noted that field personnel observed an old, abandoned metal pipe extending from the ground in the drainage channel east of 9542 Covey Lane. The exposed pipe, situated over 30 feet from the north edge of the roadway, consisted of a white-colored wrap that appeared to contain asphalt (tar) resin and fibrous material. The fibrous material had characteristics similar to asbestos. The buried pipe appeared to be orientated in a northeast-southwest direction, and may be encountered near the northern edge of Covey Lane.

TABLE 2
Summary of Subject Property Reconnaissance

Item	Concerns	Comments
General Housekeeping	No	None observed
Surface Spills	No	None observed.
Stained Surfaces	No	A few small, very minor and weathered areas of petroleum staining were observed along the unpaved shoulders.
Fill Materials	No	Minor road fills.
Pits/Ponds/Lagoons	No	None observed.
Surface Impoundments	No	None observed.
ASTs/USTs	No	None observed; however, one propane tank was observed near the top of slope above the south edge of the roadway at 9825 Covey Lane.
Distressed Vegetation	No	None observed.
Wetlands	No	None observed.
Electrical Substations	No	None observed.
Areas of Dumping	No	Significant piles of trash and debris were not observed on the subject property.
Transformers	No	Pole-mounted transformers appearing to be in good condition were detectable near the edge of Covey Lane. An above ground SDG&E transformer box was noted near the driveway edge to 9825 Covey Lane.
Waste/Scrap Storage	No	None observed.
Chemical Use/Storage	No	None observed.

4.3 Adjacent Properties

EEI conducted a visual and auto reconnaissance of the adjoining neighborhoods (to the extent practical) to evaluate the potential for offsite impacts that may affect the subject property. These would include evidence of chemical storage or usage, surface staining or leakage, distressed vegetation, or evidence of illegal dumping.

In general, the subject property is surrounded by rural residential, agricultural development (i.e., irrigated groves), and horse property. Occasional chain-link and/or wooden fencing, situated within 5 feet of Covey Lane, limited access to the adjacent land. Generally, immediately adjacent properties were not identified as having environmental related issues on any of the databases researched and reported herein. The agricultural sites may be considered as an environmental concern at this time only due to the usage of pesticides/herbicides that may have created soil residues from runoff impacting the proposed project. No service stations, dry cleaners, or industrial properties were located in the immediate vicinity.

5.0 LIMITED AGRICULTURAL CHEMICAL SURVEY

Portions of the Covey Lane are immediately adjacent to areas that have been and continues to be utilized for agricultural purposes (i.e., citrus and avocado orchard). It is likely that restricted agricultural chemicals were applied to subject property soils, which is a potential REC. Based on the future planned property use, additional investigation efforts (i.e., soil sampling and analysis) were performed by EEI to further evaluate subject property soils for agricultural chemicals.

There is no specific guidance regarding the testing and analysis of heavy metals and/or pesticides on soils in San Diego County. Therefore, EEI relied principally on the Department of Toxic Substance Control's (DTSC) August 2008 "*Interim Guidance For Sampling Agricultural Properties*", combined with our experience gathered over the last two decades. The DTSC document provides guidance for sampling of former agricultural properties (undisturbed) where pesticides and/or fertilizers were presumably applied uniformly, for agricultural purposes, consistent with normal application practices.

The DTSC document was initially prepared for use in evaluating soil at proposed new school sites and existing schools undergoing expansion projects where the property was currently or previously used for agricultural activities, but has been expanded to provide a uniform and streamlined approach for evaluating agricultural properties.

Based on the linear length of the subject property, and EEI's experience at similar projects, a total of twenty four (24) discrete soil samples, were collected at near-surface (0 to 6-inches below grade) locations along the subject roadway. The following sections discuss our investigation activities.

5.1 Field Investigation

On July 25, 2012, EEI personnel mobilized to the subject property to conduct soil sampling activities. Soil sampling locations from both sides of Covey Lane were selected with the goal of collecting representative soil samples from the subject property. A total of twenty-four (24) discrete locations (identified as HA-1 through HA-24, **Figure 3**) were chosen to provide representative coverage.

Individual samples were collected at a composite depth of approximately zero to six-inches below ground surface (bgs), using a stainless steel hand auger. Sample material was extracted from the ground and placed in laboratory-supplied, 4-ounce glass jars. The jar was sealed with a Teflon-lined cap, and labeled with a number unique to the sample. The samples were placed in a chilled cooler and transported to EEI's office in Carlsbad and stored in a refrigerator, where they were subsequently picked up by SunStar Labs, a California State-certified laboratory, under proper Chain-of-Custody (COC) documentation.

5.2 Laboratory Analytical Testing

All twenty four (24) discrete soil samples were analyzed for Total Lead and Arsenic by United States Environmental Protection Agency (U.S. EPA) Test Method 6010B. Additionally, the laboratory tested six (6) composite samples utilizing the twenty-four (24) samples (4:1 ratio) which were analyzed for Organochlorine Pesticides by U.S. EPA Test Method 8081A. The following bulleted items summarize the results of laboratory analytical testing:

- No concentrations of arsenic or lead was detected above the laboratory reporting limit (i.e., "non-detect).

- No concentrations of organochlorine pesticides, other than chlordane was detected above the laboratory reporting limit (i.e., non-detect). Chlordane was detected in sample COMP 5-8 at 13 micrograms per kilogram (µg/kg). No other composite samples detected chlordane above the laboratory reporting limit (i.e., "non-detect").

The attached **Table 3** summarizes laboratory analytical results. Complete laboratory reports and COC documentation are provided in **Appendix G**.

TABLE 3
Soil Sample Results

Sample ID	Depth (inches bgs)	Date Sampled	EPA 6010B			EPA 8081A			
			Arsenic	Lead	Dieldrin	DDE	DDD	DDT	All Other Constituents
			Reported in mg/kg		Reported in µg/kg				
HA-1	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-2	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-3	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-4	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-5	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-6	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-7	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-8	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-9	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-10	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-11	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-12	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-13	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-14	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-15	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-16	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-17	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-18	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-19	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-20	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-21	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA

TABLE 3
Soil Sample Results

Sample ID	Depth (inches bgs)	Date Sampled	EPA 6010B			EPA 8081A			
			Arsenic	Lead	Dieldrin	DDE	DDD	DDT	All Other Constituents
			Reported in mg/kg		Reported in µg/kg				
HA-22	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-23	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
HA-24	6	7/25/2012	<5	<3	NA	NA	NA	NA	NA
COMP 1-4	6	7/25/2012	NA	NA	<5	<5	<5	<5	<5 - 200
COMP 5-8	6	7/25/2012	NA	NA	<5	<5	<5	<5	Chlordane - 13; all other constituents <5 - 200
COMP 9-12	6	7/25/2012	NA	NA	<5	<5	<5	<5	<5 - 200
COMP 13-16	6	7/25/2012	NA	NA	<5	<5	<5	<5	<5 - 200
COMP 17-20	6	7/25/2012	NA	NA	<5	<5	<5	<5	<5 - 200
COMP 21-24	6	7/25/2012	NA	NA	<5	<5	<5	<5	<5 - 200
Laboratory Reporting Limit			5	3	5	5	5	5	5-200
Residential CHHSLs			**0.07**	**150**	**35**	**1,600**	**2,300**	**1,600**	**Chlordane - 430**

bgs = below ground surface; CHHSL = California Human Health Screening Levels; EPA = Environmental Protection Agency; mg/kg = milligrams per kilogram; NA = Not Applicable/Analyzed; µg/kg = micrograms per kilogram.

5.3 Discussion of Testing Results

No concentrations of arsenic or lead was detected above the laboratory reporting limit (i.e., "non-detect") in the samples analyzed during this investigation. Chlordane (a organochlorine pesticide) was detected in composite sample COMP 5-8 at 13 micrograms per kilogram (µg/kg). No other samples analyzed detected chlordane or any other organochlorine pesticide included in EPA Test Method 8081A above the laboratory reporting limit (i.e., "non-detect").

EEI compared the reported chlordane concentration to the California Human Health Screening Levels (CHHSL) for a residential land use scenario. The CHHSLs are concentrations of select hazardous chemicals that are used to estimate and compare reported values in soil to risk to human health. The following bulleted items summarize the reported values:

- The detected chlordane concentration of 13 µg/kg is less than the CHHSL residential screening level of 430 µg/kg.

Although arsenic was not detected above the laboratory reporting limit of 5 milligrams per kilogram (mg/kg) in any of the samples analyzed during this investigation, it should be noted that the residential CHHSL value for arsenic is 0.07 mg/kg, which is less than the laboratory reporting limit. Arsenic is a natural occurring element that is present in soil. Acceptable background levels for naturally occurring arsenic vary. The DTSC evaluated arsenic soil concentration data collected from various school sites and determined that 12 mg/kg is an acceptable background screening level (DTSC, 2008). If concentrations of arsenic are detected above 12 mg/kg, the DTSC suggests further evaluation.

6.0 FINDINGS AND OPINIONS

Based on the information obtained in this ESA, EEI has the following findings and opinions:

- Known or suspected RECs – No known or suspected RECs have been identified during the preparation of this ESA. However, based on the future planned widening and improvements to the roadways, off ramps and intersections, and historical agricultural use of the adjacent property, additional investigation efforts (i.e., soil sampling and analysis) were performed by EEI to further evaluate the subject property soils for aerially-deposited lead from historical automotive fuel combustion, and the presence of restricted agricultural chemicals. Therefore, EEI performed a limited soil investigation at the subject property.

  Based on the results of our limited soil investigation (see Section 5.0 – Results of Limited Soil Investigation), no concentrations of arsenic or lead was detected above the laboratory reporting limit (i.e., non-detect). Low levels of chlordane were detected in one sample. The concentrations were less than applicable residential screening levels; therefore, further investigation does not appear to be warranted at this time.

- Historical REC's – No historical REC's have been revealed during the preparation of this ESA.

- *De Minimis* Conditions – No de minimis conditions have been revealed during the preparation of this ESA.

7.0 DATA GAPS AND DEVIATIONS FROM ASTM PRACTICES

Section 3.2.20 (ASTM 1527-05) defines a data gap as "a lack or inability to obtain information required by the practice despite good faith efforts of the environmental professional to gather such information."

7.1 Historical Data Gaps

Based on the information obtained during the course of this investigation, the following historical data gaps were encountered.

Specific Gaps
Information regarding the current and past owners of the subject property was not readily available; therefore, this historical source was not researched.

Resolution Efforts
EEI researched historic topographic maps, historic aerial photographs, and internet research to supplement historical information.

Opinions on Data Gap Significance
Based on the information gathered from readily available sources, EEI does not consider the absence of this interview to effect the validity of this Phase I ESA.

7.2 Regulatory Data Gaps

No regulatory data gaps were identified during our research efforts.

7.3 On-site Data Gaps

No on-site data gaps were identified during our research efforts.

7.4 Deviations from ASTM Practices

Section 12.10 (ASTM 1527-05), states that all deletions and deviations from this practice shall be listed individually and in detail, including Client imposed constraints, and all additions should be listed.

EEI believes that there are no exceptions to, or deletions from, the ASTM Designation E1527-05 Guidelines.

8.0 CONCLUSIONS

We have performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Designation E1527-05 for the proposed roadway expansion property including: an approximately 2,700 linear foot section of Covey Lane, west of West Lilac Road to the Lilac Hills Master Planned Community Development boundary, Escondido, California. Any exceptions to, or deletions from, this practice are described in Section 7.0 of this report. This Phase I ESA has revealed no evidence of *recognized environmental conditions* in connection with the property, except for the following:

- Based on laboratory analytical results from limited soil investigation activities, low levels of chlordane were detected in one sample. All detectable concentrations of chlordane were less than the CHHSL residential screening level of 430 µg/kg. Therefore, no further investigation appears to be warranted at this time.

9.0 REFERENCES

California Department of Water Resources, Water Data Library (WDL), Website (http://www.water.ca.gov/waterdatalibrary), accessed July 2012.

California Division of Oil, Gas, and Geothermal Resources (CDOGGR) Website (http://maps.conservation.ca.gov/doms/index.html), accessed July 2012.

California Environmental Protection Agency (CalEPA), 2005, "Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties."

California Geological Survey (CGS), 2002, "California Geomorphic Provinces, Note 36."

County of San Diego Land Use and Environmental Group (LUEG), KIVA, Website (http://landinfo.sdcounty.ca.gov/permit/index.cfm), accessed July 2012.

Department of Toxic Substances (DTSC), Website (http://www.envirostor.dtsc.ca.gov/public/), EnviroStor database, accessed July 2012.

Department of Toxic Substances Control (DTSC), 2008, "Interim Guidance for Sampling Agricultural Properties (Third Revision)."

Federal Emergency Management Act (FEMA), Flood Insurance Rate Map (FIRM), Website http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1 accessed February 2012.

Los Angeles County Public Library (LAPL), Sanborn Maps 1867-1970, Website http://databases.lapl.org/#s, accessed July 2012.

National Pipeline Mapping System (NPMS), Public Map Viewer Website, (https://www.npms.phmsa.dot.gov/PublicViewer/), accessed July 2012.

San Diego Geographic Information Source, (SanGIS), Website, (http://files.sangis.org/interactive/viewer/viewer.asp), accessed July 2012.

San Diego Regional Water Quality Control Board (SDRWQCB), 1994, "Water Quality Control Plan for the San Diego Basin (9)," dated September 8.

San Francisco Bay, Regional Water Quality Control Board, Environmental Screening Levels (ESLs) (2008).

State Water Resources Control Board, Website, GeoTracker database, (http://www.geotracker.swrcb.ca.gov/), accessed July 2012.

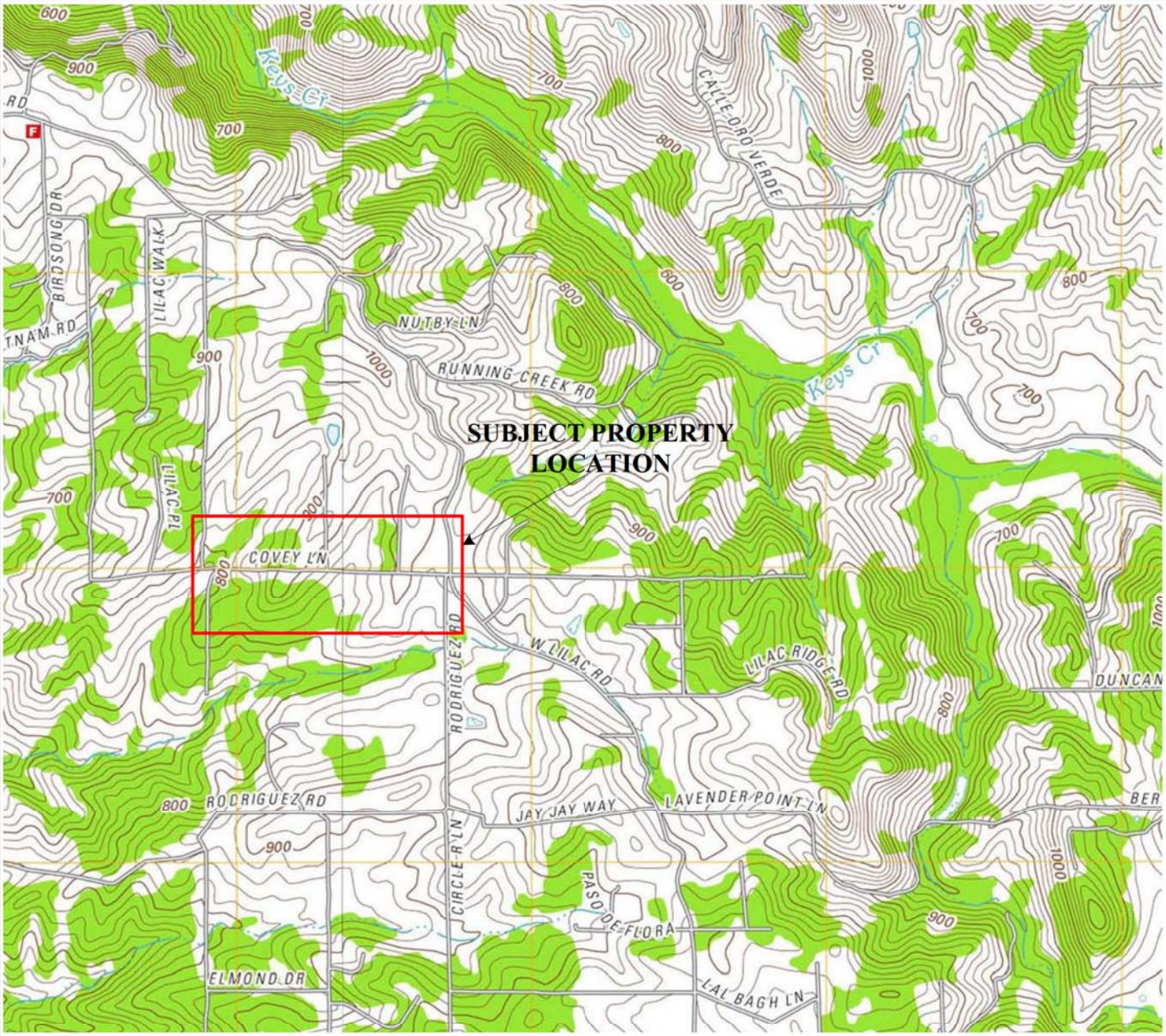
Tan, Siang S., 2000, Geologic Map of the Bonsall 7.5' Quadrangle, San Diego County, California, A Digital Database, (1:24,000), California Division of Mines and Geology (CDMG) in cooperation with the United States Geological Survey (USGS).

United Nations Environmental Programme, 1999, Guidelines for the Identification of PCBs and Materials Containing PCBs.

United States Department of Agriculture (USDA), Natural Resources Conservation Service, Website (http://websoilsurvey.nrcs.usda.gov/app/) Web Soil Survey, accessed July 2012.

United States Geological Survey (USGS, 1975, photograph inspected 2012, Pala, 7.5-Minute Quadrangle.

FIGURES



Map Source: USGS, Pala, California 7.5 Minute Quadrangle map (USGS, 2012)

N

Scale: 1" = 1,600'

0 960FT 1,600FT 3,200FT

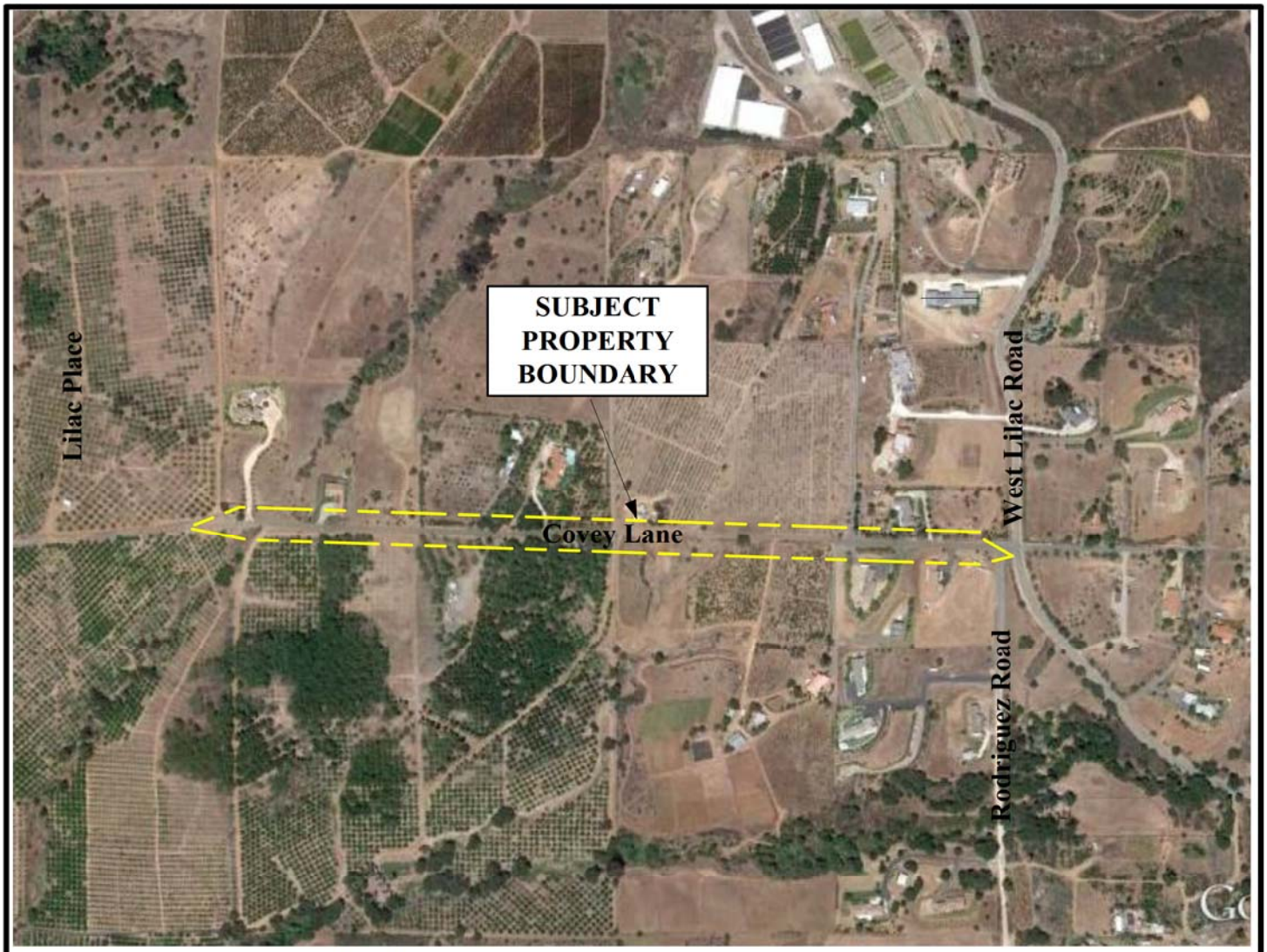
Note All Locations Are Approximate

SITE LOCATION MAP

ACCRETIVE INVESTMENTS, INC.
Lilac Hills Master Planned Community Development
Roadway Expansion Property
Covey Lane west from West Lilac Road
Escondido, California 92026
EEI Project Number ACR-71507
Created July 2012

EEI Geotechnical & Environmental Solutions

FIGURE 1



Map Source: Google Earth®, August 23, 2010

N

Scale: 1" = 500'

0 300 FT 500 FT 1,000 FT

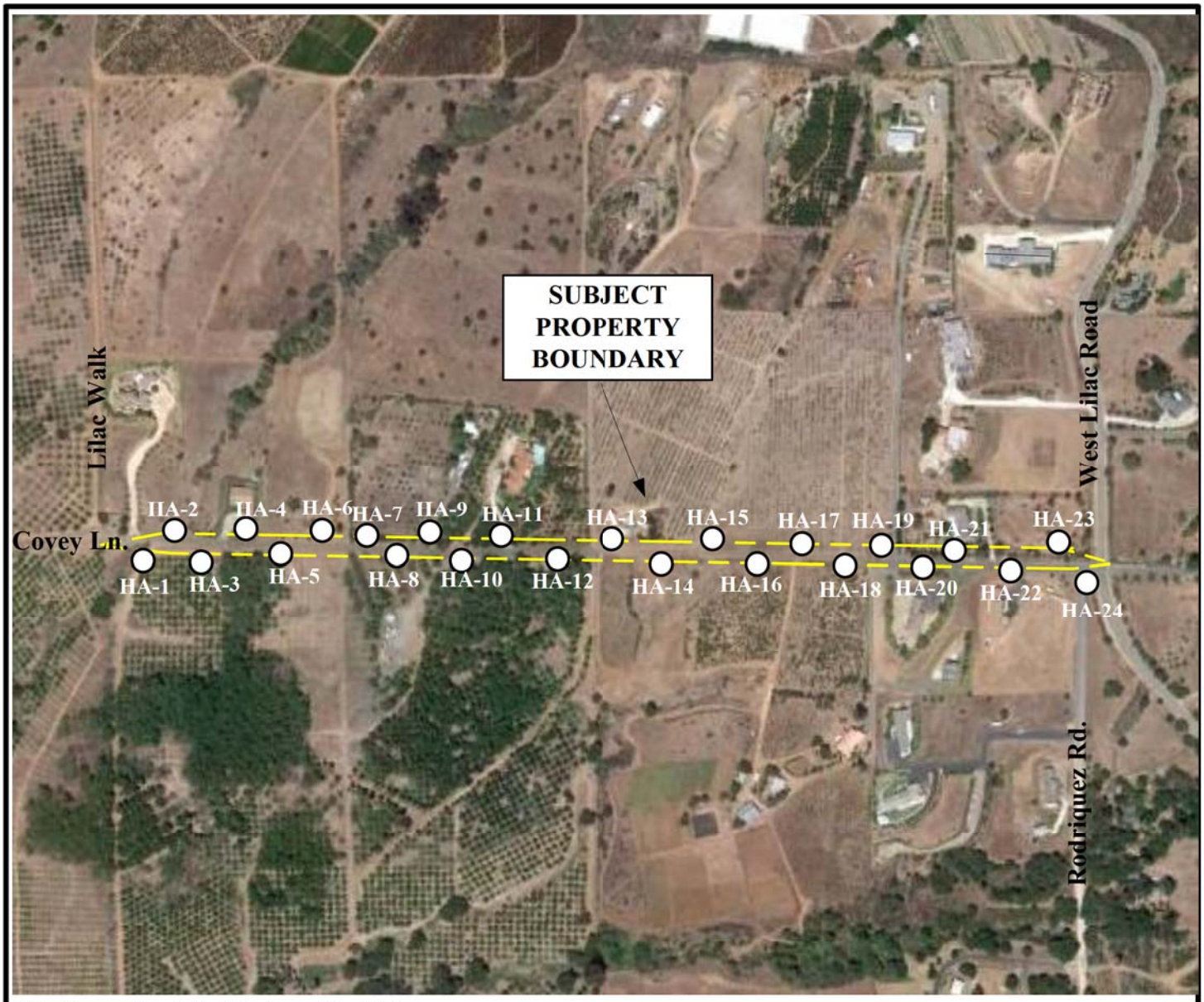
Note All Locations Are Approximate

AERIAL SITE MAP

ACCRETIVE INVESTMENTS, INC.
Lilac Hills Master Planned Community Development
Roadway Expansion Property
Covey Lane west from West Lilac Road
Escondido, California 92026
EEI Project Number ACR-71507
Created July 2012

EEI Geotechnical & Environmental Solutions

FIGURE 2



Map Source: Google Earth®, August 23, 2010

LEGEND

○ EEI Soil Boring Location
HA-1

N

Scale: 1" = 400'

0 240 FT 400 FT 800 FT

Note All Locations Are Approximate

SOIL BORING LOCATION MAP

ACCRETIVE INVESTMENTS, INC.
Lilac Hills Master Planned Community Development
Roadway Expansion Property
Covey Lane west from West Lilac Road
Escondido, California 92026
EEI Project Number ACR-71507
Created July 2012

EEI Geotechnical & Environmental Solutions

FIGURE 3

APPENDIX A
RESUME OF ENVIRONMENTAL PROFESSIONAL

EEI
Geotechnical & Environmental Solutions

Polly Ivers

Project Scientist

HIGHLIGHTS OF QUALIFICATIONS

- Experienced in project management duties for conducting field research, data collection, inventory, analyses and report development in the Environmental Science industry.
- Knowledgeable of environmental compliance and regulations and technical writing specifications for environmental documentation and regulatory reporting.
- Excellent communication and interpersonal skills. Diplomatic and experienced in working with diverse populations including the public, colleagues, clients and agency representatives.
- Strong analytical, detail-oriented, organizational, and verbal/written communication skills.
- Proficient in MS Office, MS Visio, CADD, ArcGIS 9.1, Adobe Acrobat and internet research.

EDUCATION

UNIVERSITY OF COLORADO, Boulder, CO B.S. Biology 1987
WETLANDS TRAINING INSTITUTE, San Diego, CA 2004
UNIVERSITY OF UTAH, Salt Lake City, UT GIS/Environmental Science Coursework 2002 - 2010

PROFESSIONAL EXPERIENCE

EEI, INC., (*Geotechnical and Environmental Solutions)*, Carlsbad, CA 2004 - Present

Environmental Project Scientist (4/05 - Present)

- Oversee the execution and management of Phase I Environmental Site Assessments (ESA) for over 200+ sites in California, Nevada, and Arizona.
- Direct Phase II limited site investigations, including Soil and Agricultural Chemical Surveys (drilling, sampling, and monitoring). Supervised small field crews on key client projects.
- Assisted with Biological Assessment reports and Wetland Delineation Surveys.
- Manage budgets ensuring fiscal responsibility on each project.
- Supervise and mentor two staff members in daily duties and perform yearly peer reviews.
- Write ESA reports based on researched technical data. Edit and review co-worker reports.
- Contributed compliance documents for Environmental Impact Reports (under NEPA and CEQA regulation) and Storm Water Pollution Prevention Plans (SWPPP).

Environmental Staff Scientist (3/04 - 3/05)

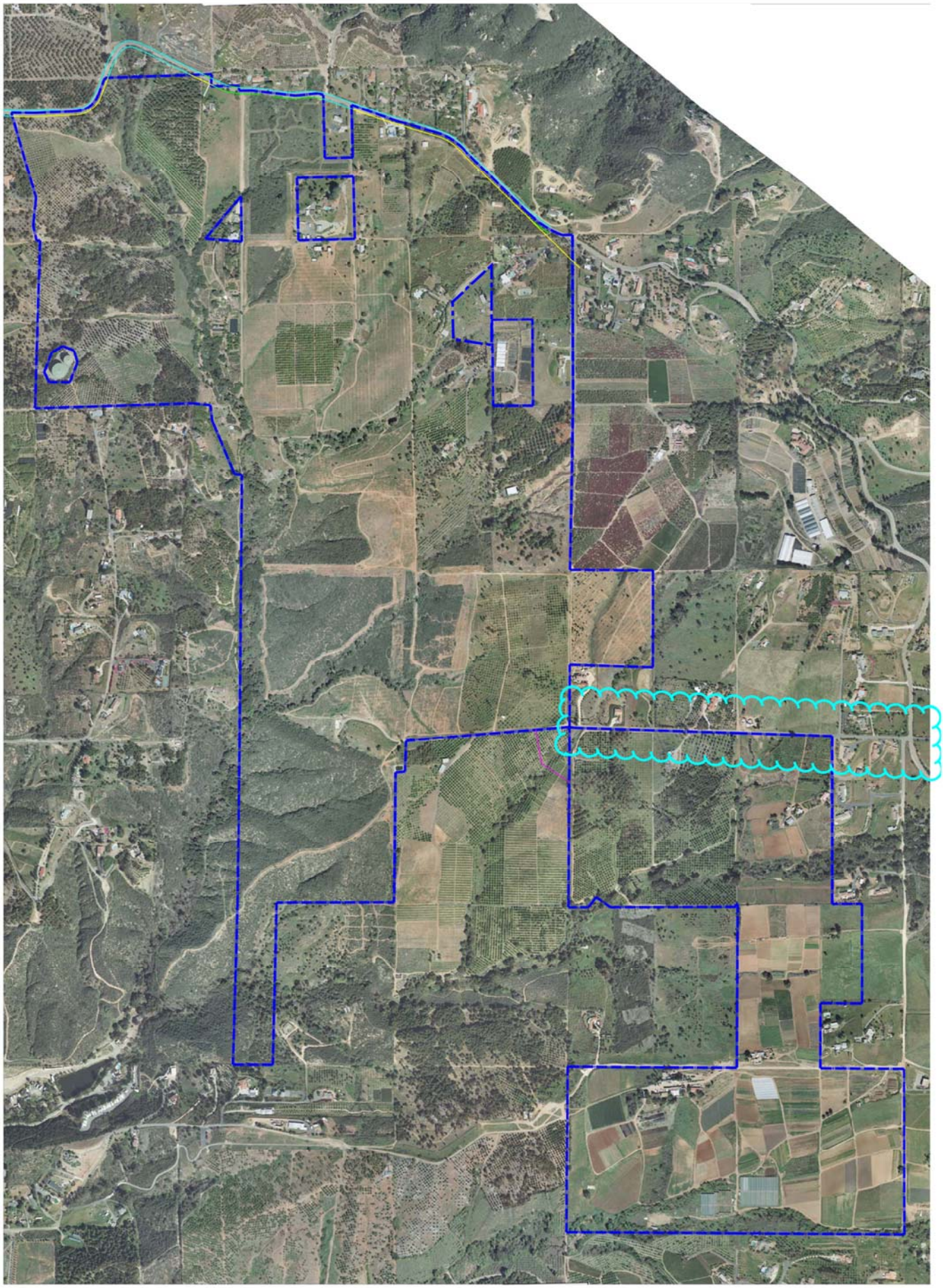
- Worked closely with Project Managers: conducted field visits to project sites for evaluation; used topographic maps, aerial photographs, GPS units, and scientific tools and equipment; attended meetings; and managed project files and database.

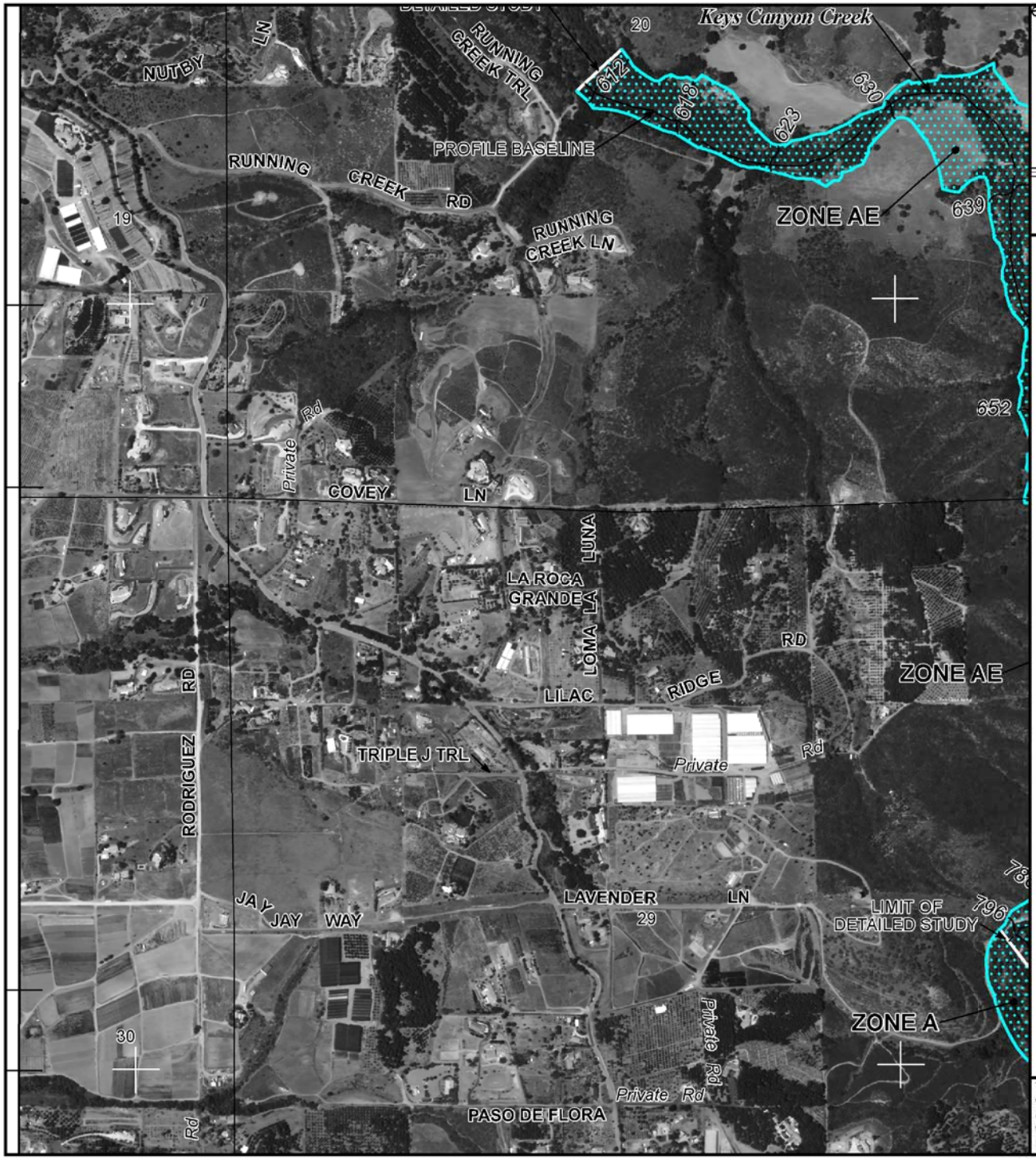
CERTIFICATIONS

40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPPER)

APPENDIX B
ROADWAY EXTENSION FIGURE/FIRM

LILAC HILLS RANCH AERIAL





e Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

0 500 1,000 1,500 2,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0515G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 515 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN DIEGO COUNTY	060284	0515	G

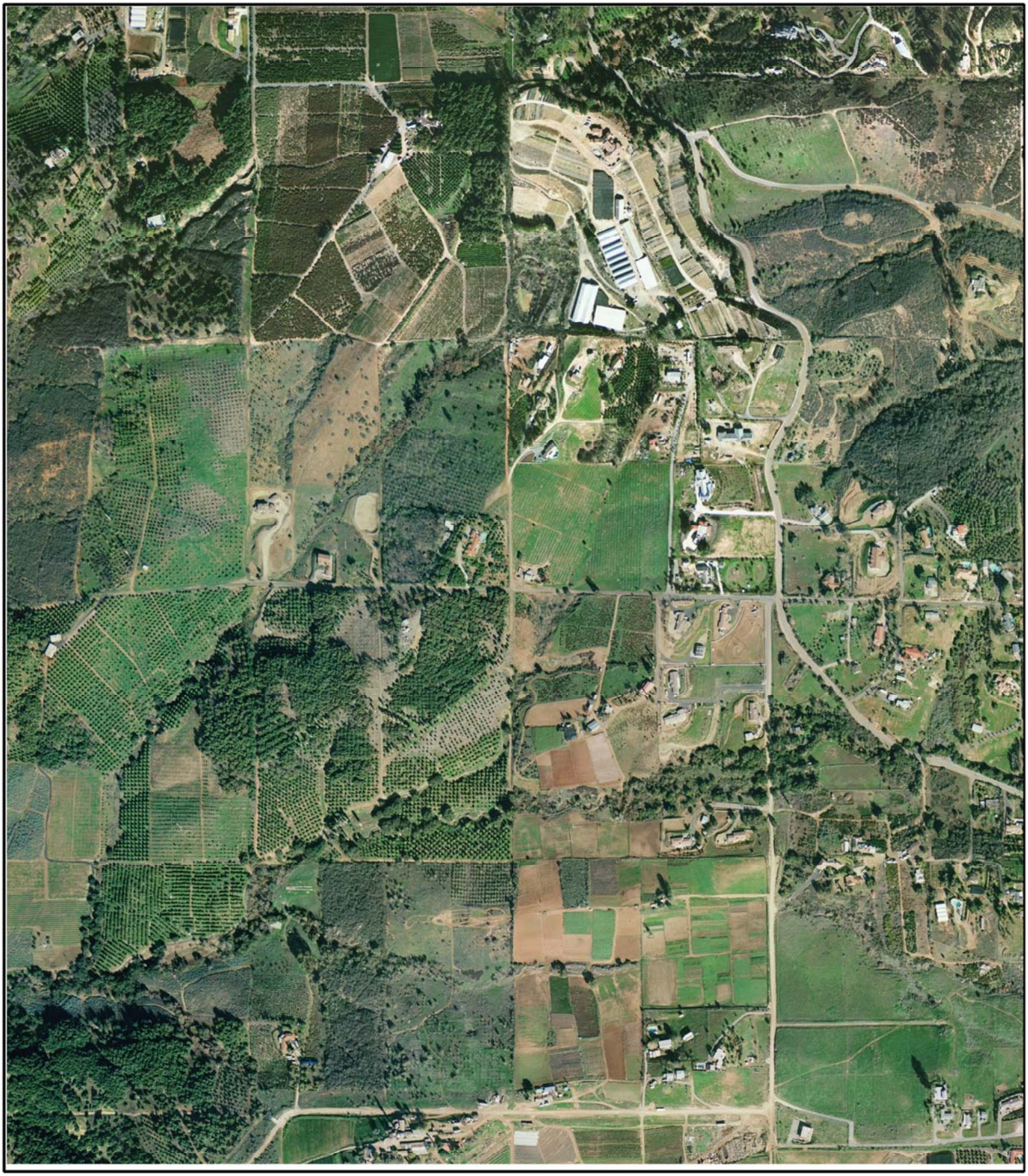
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06073C0515G

MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

APPENDIX C
HISTORICAL AERIAL PHOTOGRAPHS/TOPOGRAPHIC MAPS



Historical Aerial Photo

2008

COVEY LN

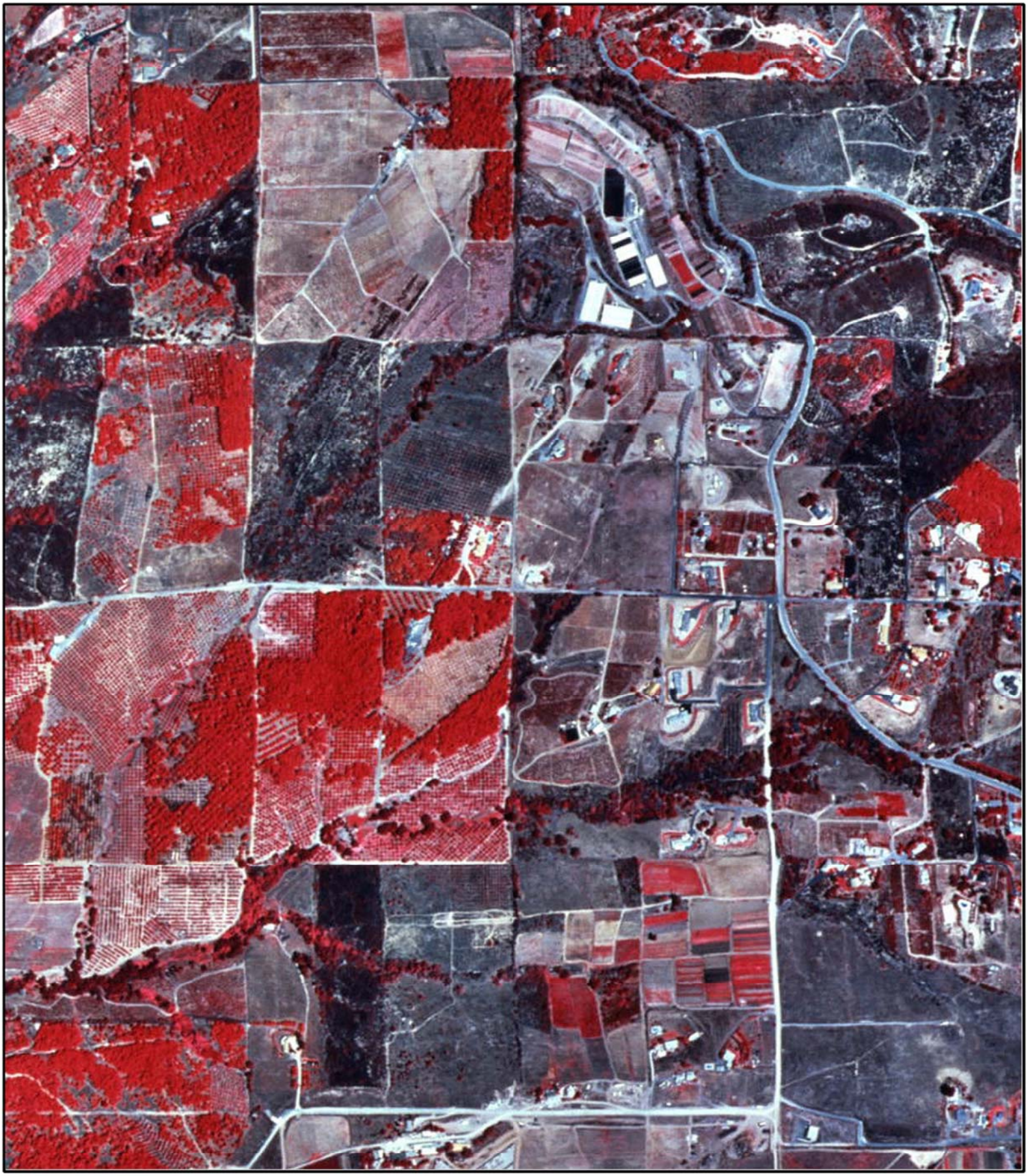
ESCONDIDO, CA 92026

Target Site: 33.285931, -117.125580 Job Number: ACR-71507
(EARTH EXPLORER)

FIRSTSEARCH

N
W E
S

1 inch equals 685 feet



Historical Aerial Photo

2002

COVEY LN

ESCONDIDO, CA 92026

FIRSTSEARCH

Target Site: 33.285931, -117.125580 Job Number: ACR-71507
(NAPP-3C_12474-180)

N
W E
S

1 inch equals 685 feet