

4.15 HUMAN-MADE HAZARDS

1. SUMMARY

The proposed Vista Canyon project would not include any uniquely hazardous land uses as the proposed residential and commercial uses are expected to use and store chemicals and/or substances that are typically found in similar settings. Similarly, humans would not be subject to either acute overexposure or chronic exposure to pesticides if used and handled according to state and federal regulations.

Two underground storage tanks (USTs) were previously used on the project site. However, based on a records search and on-site field investigations, the USTs were removed in accordance with applicable regulations. While electrical transmission lines and transformers are located to the north of the project site, there currently is not a scientific consensus regarding whether electromagnetic fields (EMFs) related to transmission/distribution lines pose a health threat. Consequently, neither the State of California nor the City of Santa Clarita has adopted a threshold of significance for EMFs. Additionally, no federal or state government agencies, including the California Public Utilities Commission (CPUC), the California Department of Health Services (DHS), and the U.S. Environmental Protection Agency (U.S. EPA), have established land setbacks based on EMFs.

Three Phase I Environmental Site Assessments (ESAs) were prepared for the proposed project to determine if there are any environmental conditions at the project site that would include the presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or a material threat of a release into structures on the property or into the ground, groundwater or surface water. One of the Phase I ESAs prepared for the PA-2 and PA-3 portions of the project site concluded that there is a potential for the presence of metals, total petroleum hydrocarbons, volatile organic compounds, and pesticides on the site; it recommended that, prior to grading activities, soil samples be collected from:

- debris piles and from the locations of the removed debris piles,*
- areas that have historically been used for agricultural development, and*
- the location of the former Southern Pacific Railroad at the southern boundary of the site.*

With mitigation, the proposed project would not result in a significant impact to human-made hazards.

2. INTRODUCTION

The purpose of this discussion is to disclose the potential for environmental safety issues that could occur on the project site and to identify feasible mitigation measures that would reduce any identified significant impacts to a level below significant. This section incorporates information from the following reports, copies of which are available in **Appendix 4.15**:

- Rincon Consultants, Inc., *Phase I Environmental Site Assessment, Approximately 80-Acre Property, Santa Clarita, California*. November 2005. (Rincon 2005)
- R.T. Frankian & Associates, *Phase I Environmental Site Assessment, Vista Canyon Ranch (Waldron Property), 27556 Woodfall Road, Los Angeles County Assessor's Parcel No. 2840-004-021*. June 2007. (RTF&A 2007)
- Jacob & Hefner Associates, Inc., *Phase I Environmental Site Assessment for an Approximate 13-Acres of Land in Planning Area 4 Between the Antelope Valley Freeway (SR-14) and the Santa Clara River Vista Canyon Ranch, Santa Clarita, California*. August 2009. (JHA 2009)

The Phase I ESAs include the results of field surveys, as well as records, photo and database reviews. With regards to geotechnical and fire safety issues, please refer to **Section 4.1, Geotechnical Hazards**, and **Section 4.13, Fire Services**, respectively.

3. EXISTING CONDITIONS

a. Physical Project Site Conditions

The project site is irregularly shaped and consists of approximately 185 acres. The site is surrounded by developed land uses, which are both residential and commercial. To the north of the project site are SR-14 and residential and commercial development. The Colony Townhomes, a multi-family residential community, is directly west of the project site. The Fair Oaks Ranch community to the south and west consists of single-family and multi-family residential units, an elementary school, and community park. The existing Metrolink rail line is located to the south of the project site. The La Veda and Lost Canyon residential areas to the east consist of homes, several churches, a public elementary school, and a private elementary school.

From a geological and hydrological perspective, the site is located in and along the Santa Clara River. As such, the lower elevations of the project site are underlain by Pleistocene and recent age alluvial deposits from the River that overlie Mint Canyon Formation bedrock. The active River channel generally is underlain by medium to coarse grained sand with gravel and cobbles, while the floodplain deposits and alluvial soils are typically finer grained with sand, silt, and clay. The floodplain deposits and alluvium, which have been eroded and deposited from the hillsides on the south, is typically finer grained than the

coarse grained sand and gravels that have been deposited from the active River channel. The higher elevations of the project site are underlain by Miocene Age non-marine sedimentary rocks (sands, silts, and clay) of the Mint Canyon formation.

(1) Phase I Environmental Site Assessments

Three Phase I ESAs, each evaluating different portions of the project site, have been prepared. The following summarizes the assessments conducted on the project site. The project site is comprised primarily of undeveloped land with the exception of a residential compound/equipment storage yard present on the western side of the project site and the Mitchell family cemetery located on the small elevated terrace at the northeastern portion of the project site. Some remains (building foundations, fencing, etc.) of the Mitchell family homestead are also located on the southern portion of the project site.

(a) Phase I ESA for PA-1

The Phase I ESA for PA-1, which is located in the southwest portion of the site, was prepared by R.T. Frankian & Associates (RTF&A) in June 2007. RTF&A conducted site reconnaissance on May 9 and May 30, 2007. At the time of the site reconnaissance, PA-1 contained a residential compound consisting of an older house and several trailers and automobiles. In addition, the site was covered with what appeared to be native vegetation on relatively flat to low sloping ground. Some minor amounts of transite pipe were observed that have the potential to contain asbestos. In addition, the older house at the site could contain minor amounts of asbestos and, based on the age of the structure, could also contain lead paint.

A large portion of PA-1 was used to stockpile waste concrete and concrete washout material in order to create parking areas and protect the site from erosion. No hazardous materials were encountered in 28 test pits excavated into the concrete debris and concrete wash-out material. RTF&A also found an area of localized buried rubbish/trash in the artificial fill near the house. This material was tested for priority pollutants and none were found.

No hazardous substances or petroleum products were observed during the site reconnaissance, other than minor automotive lubricants. Two aboveground storage tanks (ASTs) were found in PA-1; one AST is an empty fuel tank and the other AST is used for water. No evidence of past use at this location or leakage was noted around the ASTs during site reconnaissance. No other ASTs or evidence of former ASTs, such as mountings or circular scars, were observed on the subject site.

During the site reconnaissance, RTF&A did not observe or note suspicious staining, stressed vegetation (from causes other than lack of water), discarded drums, or other chemical product containers on the site.

Other than the concrete debris/fill, no waste pits, sumps, or impoundments were observed. No potentially polychlorinated biphenyls (PCBs)-containing electrical or hydraulic equipment, such as transformers or former lifts, were observed on the site.

RTF&A did not observe evidence of water production or other types of wells on the subject site during the site reconnaissance. However, one abandoned production well is located near the northwest corner of the site within the active stream course of the Santa Clara River. Two other large production wells are also located nearby within the stream channel.

(b) Phase I ESA for PA-2 and PA-3

Rincon Consultants (Rincon) performed a reconnaissance of PA-2 and PA-3 on October 26, 2005. The southeast portion of the project site was historically developed with the Southern Pacific Railroad, which previously curved through this area to slow incoming trains for Humphrey's Station. All rail lines have been removed from the site. A dirt and gravel embankment that formerly served as a platform for the railroad were still in existence at the time of the reconnaissance. No evidence of ASTs or USTs was observed on the site.

During the site reconnaissance, Rincon did not observe or note any of the following possible indicators of a hazardous materials release: ASTs or USTs, drains or sumps, pools of liquid, effluent disposal systems, stained soil or stained pavement, stressed vegetation, stains or corrosion, or odors. Numerous debris piles were observed throughout the site. Recently dumped dirt, concrete, metal and wood are located at the northeastern portion of PA-3. Piles of debris that have been overgrown by vegetation are located near the railroad tracks and are partially enclosed by a dilapidated wire fence. Other piles of debris consist of wood, metal, a water heater, a bath tub, and other miscellaneous debris. There were no indications of hazardous materials releases associated with the debris piles.

During the site reconnaissance, an empty Southwestern Petroleum Corporation container was observed southeast of the project site. In addition, one 55-gallon drum, half filled with concrete was observed. There was no indication of a release of PCBs in the vicinity of the on-site transformers. These transformers are owned by Southern California Edison (SCE). Rincon's Phase I ESA recommended that, while it is unlikely that the transformers on the property are PCB contaminated, a test should be conducted to confirm as such.

(c) Phase I ESA for PA-4

As described in the Phase I ESA prepared by Jacob & Hefner Associates, Inc. (JHA), on August 3, 2009, a representative from JHA visited PA-4 to observe current conditions. At the time of the site reconnaissance, there were several piles of asphalt pavement and concrete debris piles on the western portion of PA-4 (between the freeway on the north and Lost Canyon Road on the south). As previously noted, a cemetery is located in PA-4; the cemetery is enclosed by a fence and contains 18 to 20 headstones. A small pile of wood debris was observed east of the cemetery. Other than the cemetery and several dirt roads, there are no structures or evidence of development on this portion of the project site.

During the reconnaissance, no evidence of structures such as foundations, slabs, or posts were observed on PA-4. No hazardous materials, hazardous wastes, underground or aboveground storage tanks, open pits or ponds, stained soil, or stressed vegetation were observed at the time of the site reconnaissance.

(2) Record Search of Adjacent Properties

Environmental Data Resources (EDR) prepares database reports of available federal, state, and County agency databases that identify the presence of any government regulated properties, either on site or adjacent to a project site, with potentially on-site hazardous conditions. The EDR reports identify mapped and unmapped sites listed in federal, state, and local government databases within the search areas prescribed by ASTM Standard E 1527-05. EDR reports prepared for the project site were reviewed by RTF&A, Rincon, and JHA. A complete copy of the EDR reports is provided as an appendix to the Phase I ESAs found in **Appendix 4.15** of this EIR.

The project site is not identified in the EDR reports. The EDR reports also provide the following information regarding the existence of potentially hazardous sites within the project vicinity:

- The project site is not located within 1.0 mile of a Federal Superfund property.
- There are numerous properties within 1 mile of the southern project site boundary identified in the EDR reports. The most proximate listed problematic site is the Canyon Park Hog Farm, which is located south of the project site at 27338 Woodfall Road. The site was listed as a possible source of groundwater degradation because of the animal wastes derived from the site. The state required groundwater monitoring for possible degradation because of the former use. That site also had USTs that were properly abandoned in 1989 (RTF&A 2007). The site received closure and is now a housing development (Fair Oaks Ranch).

Of the listed unmapped properties, a number are located south of Soledad Canyon Road. It should be noted that most are listed as generators of hazardous wastes. These uses have a low probability of affecting the project site as these uses and their resulting activities are permitted and monitored by regulatory agencies that impose specific operating procedures. (See JHA 2009, a copy of which is located in **Appendix 4.15** of this EIR.)

- There are numerous properties within 1 mile of the northwestern project site boundary identified in the EDR reports. Several sites include a dry cleaner and gasoline station. Soledad Cleaners at 18344 Soledad Canyon is listed in the state's Site Mitigation and Brownfields Reuse Program database. The dry cleaner is located more than 0.5 mile to the west and downgradient of the site. As such, there is little likelihood that it will affect the subject property. The Canyon Country Gas Station, located at 18003 Soledad Canyon Road, is also listed in the UST database. That site is located more than 0.5 mile from the subject site and is located downgradient; therefore, the UST is unlikely to have affected the subject property. (RTF&A 2007, a copy of which is located in **Appendix 4.15** of this EIR.)

(3) Previous Oil Production Operations

With regards to oil production, such activities are typically associated with certain hazardous substances. Substances that are commonly found on oil fields include total petroleum hydrocarbons and aromatic volatile organic compounds. Total petroleum hydrocarbons (TPH) are associated with crude oil production, storage, processing, and transport. The most frequently occurring volatile organic compounds (VOCs) found in soils at oil fields are xylenes and ethylbenzene, followed by toluene and benzene (benzene, toluene, ethylbenzene, and xylenes together are referred to as "BTEX"), all of which are commonly found in crude oil. The most frequently occurring semi-volatile organic compounds (SVOCs) are phenanthrene and 2-methylnaphthalene and naphthalene, also typical of crude oil. Other SVOCs that could be found in small quantities include acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(b)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzyl alcohol, chrysene, fluoranthene, ideno(1,2,3-c,d)pyrene and pyrene. Organic vapor may also be detected in an oil field. It is possible that petroleum hydrocarbon-contaminated soils associated with oil fields and abandoned wells are capable of generating methane gas through anaerobic biodegradation. Other potentially toxic organic vapors may also be generated, such as benzene.

To determine the presence of known active or abandoned oil and gas wells within the project site and surrounding vicinity, the *Munger Map Book of California-Alaska Oil and Gas Fields* (1990 ed.) was reviewed. Based on the review, the project site was not identified within the designated boundaries of an oil or gas field. An abandoned dry hole was located about 1,500 feet from the PA-3 and PA-4 portion of the project site. The "Mitchell #1 Well" was drilled by Redwood Oil Company in 1939 to a depth of 1,390 feet. The well has since been plugged and abandoned. (See Rincon 2005, a copy of which is located in **Appendix 4.15** of this EIR.) The Placerita Oil Field is located approximately 3 miles southwest of the project site. (See JHA 2009, a copy of which is located in **Appendix 4.15** of this EIR.) Based on reviews of the project site, there is low probability that the site has been affected by oil and gas production.

(4) On-Site Underground Storage Tanks

USTs have the potential to store substances that can negatively affect a project site. Additionally, there is a potential for these underground tanks to develop leaks—otherwise known as leaking underground storage tanks, or LUSTs—which would result in an unmonitored release of hazardous materials, should they be contained in the UST. In order to determine the presence of on-site USTs, historic data was reviewed in conjunction with on-site field surveys. The results of this data review are described in greater detail below.

(a) Records Search

No evidence of current or former USTs, such as access plates, vents, or dispenser islands, was observed on the subject site. (See RTF&A 2007, a copy of which is located in **Appendix 4.15** of the EIR.) The EDR reports have records of UST removal on PA-2 and PA-3. Specifically, two 1,000 gallon capacity tanks had been permitted for the site, one for leaded gasoline, and one for diesel fuel. On July 11, 1994, a permit was issued for abandonment of the tanks. The tanks were abandoned on July 12, 1994 under supervision of a County inspector. The inspector reported that the tanks appeared to be structurally sound and there was no visual evidence of leakage. (See Rincon 2005, a copy of which is located in **Appendix 4.15** of the EIR.)

Approximately 0.34 mile northeast of the project site, there are three gasoline station properties listed on the LUST List as having leaking underground storage tanks near the intersection of Sand Canyon Road and Antelope Valley Freeway. Two of the properties (Chevron and Tosco) are listed as “Case Closed” by the regulatory agency. The third property, an ARCO at 28406 Sand Canyon Road, is an open case. JHA reviewed the property information on the state GeoTracker database. There are 11 groundwater-monitoring wells present on the property and a dissolved phase hydrocarbon plume is present in the groundwater. The groundwater gradient is toward the south. The groundwater is monitored on a quarterly basis and various proposed remediation options are being reviewed by the regulatory agency. (See JHA 2009, a copy of which is located in **Appendix 4.15** of the EIR.)

One property, located at 16628 Lost Canyon Road, is listed on the RCRA-SQG, Finds, HAZNET, CaFidUST, Los Angeles County HMS, Hist UST, NPDES, Sweeps UST, and California WDS lists. The property is listed as Sulphur Springs Transportation and is approximately 0.15 mile east of the project site. The various listings are for generators of hazardous wastes and for historical USTs, typical of a school bus maintenance yard; however, the property address is currently the Sulphur Springs Community School. The bus yard has been relocated to the Sulphur Springs School District main office and the current school is developed on the property. The District had maintained hazardous waste generator permits for used oil, spent cleaning solvents, and antifreeze. These wastes were handled in

accordance with regulatory requirements. As of the time of the site reconnaissance, there were no USTs and no bus maintenance performed currently at the listed property. Furthermore, because the site is a public school property, there is a very low probability that the property is contaminated. (See Rincon 2005 and JHA 2009, copies of which are located in **Appendix 4.15** of the EIR.)

(5) Agricultural Activities

Pesticides are commonly used for pest control by agricultural operations. A pesticide is any substance used to kill crop pests, such as insects, rodents, weeds, and fungi. Pesticides are inherently toxic and, when used improperly, can have adverse effects on human health and the environment. This section describes (1) the regulatory environment in which pesticides are controlled and applied, (2) the effects of pesticides and (3) historic data regarding on-site agricultural activity. (Further discussion of on-site farming use can be found in **Section 4.19, Agricultural Resources**.)

(a) Regulatory Environment

Pesticides are regulated by the federal government under the 1947 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). FIFRA establishes registration and labeling requirements for pesticides, herbicides and other economic poisons. Registration requires documentation that the pesticide will not damage human health or the environment, if used as intended. FIFRA prohibits the sale of any economic poison that has not been registered by the U.S. EPA.

The California Department of Food and Agriculture (CDFA) is the principal agency responsible for the regulation of pesticide sales and use in the state. Specifically, it registers and classifies pesticides, licenses professional agricultural pest control operations and advisors, monitors pesticide residues in food samples, and promulgates pesticide use and worker safety regulations. Section 11501 of the California Food and Agricultural Code requires pesticide applications to be confined to their target and to avoid contamination of non-target properties; violations can result in either civil penalties or a revocation of a pesticide use permit.

The California DHS has an advisory role with respect to pesticide use and exposure. It conducts studies and investigates cases of pesticide exposure, conducts toxicological evaluations and risk assessments, and provides educational programs for physicians on diagnosing and treating pesticide poisonings.

On a local level, if the U.S. EPA determines that a pesticide has the potential to cause human injury or environmental damage, its use is restricted and a permit from the local agricultural commissioner is required for its purchase and use. Furthermore, restricted pesticides are only available for retail sale to,

and use by, Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Pesticides may be applied either by broadcast spraying (spraying a fine mist over the target—usually from an aircraft or a land vehicle) or by topical application (placing the pesticide directly on or in the vicinity of the target). Broadcast spraying can result in the dispersion of pesticides into adjacent non-target areas (especially during windy conditions); therefore, some pesticides that are applied in this manner are strictly regulated.

(b) Effects of Pesticides

Pesticides exert adverse effects on living organisms, including non-target organisms, such as non-pest plants and animals in or near a treated area. The four variables that determine the degree to which a non-target organism is affected include the chemical and physical properties of pesticides, their mode of application, their route of entry, and rate of absorption into the blood stream. The chemical and physical properties of a pesticide determine the potential toxic effects it can have on humans. Every pesticide is divided into one of two categories by the U.S. EPA—restricted use pesticides or general use pesticides. The classification is based on its toxicity, its intended use, and its environmental impact. A pesticide listed for general use is considered to present little or no danger to either the applicator or the environment, if it is used as directed¹.

(c) Aerial Photo Review

To determine the extent of historic on-site agricultural production, a review of historic photos and maps was conducted for the project site. Based on the review of historic photos, Rincon determined that a portion of the site was used for agriculture from 1928 to 1954. (See Rincon 2005, a copy of which is located in **Appendix 4.15** of this EIR.) Accordingly, there is a potential that the property could be affected with pesticides, or other chemicals used routinely in agricultural production.

(6) Electrical Transmission Facilities

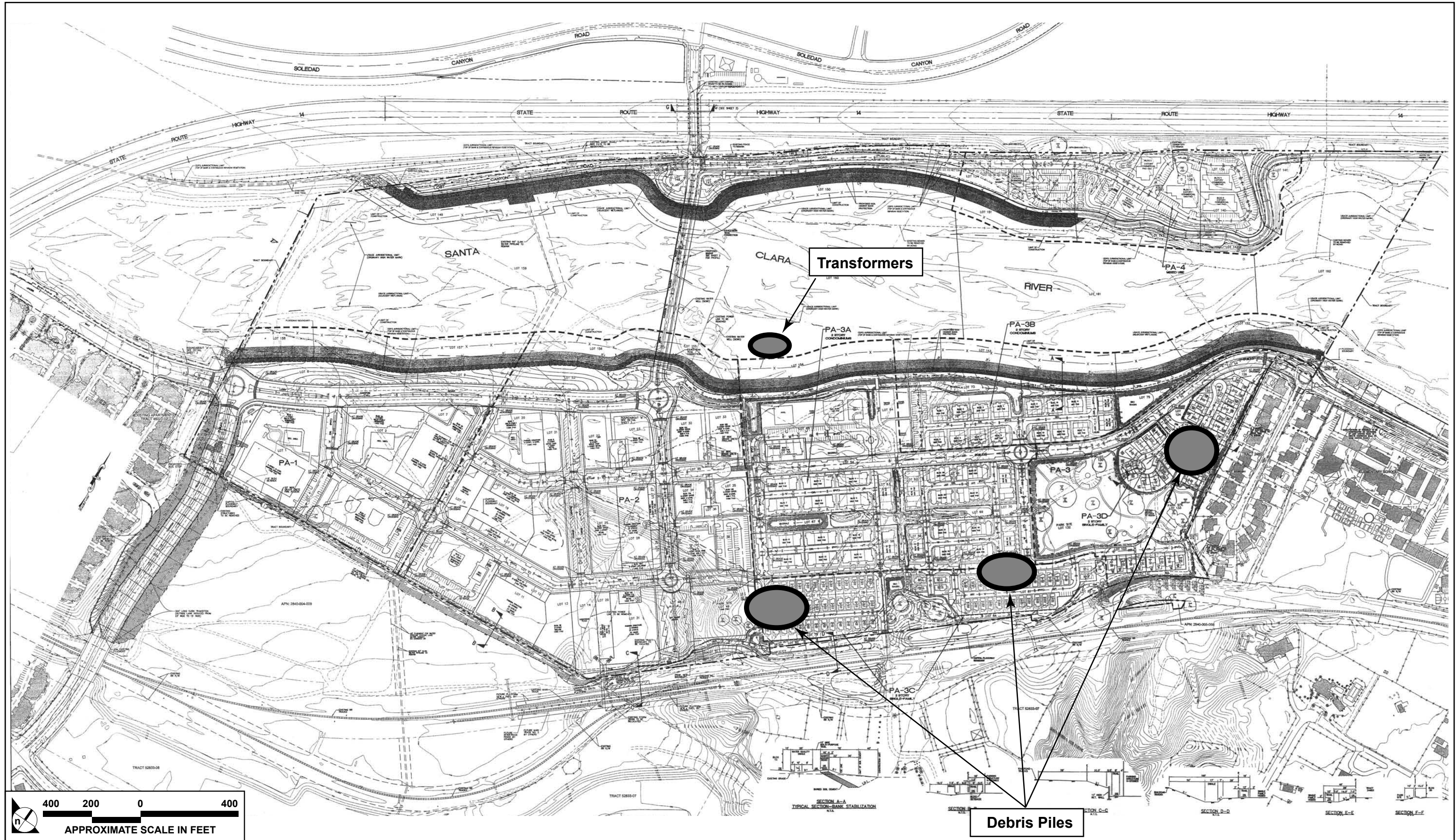
Several SCE transformers are located north of PA-3 and PA-4, as identified in **Figure 4.15-1, Location of Potentially Hazardous Materials Sites**. Electricity from power generating sources is distributed to communities via high voltage transmission lines. Transformers are used to lower the voltage for connections to residential distribution lines that deliver energy to homes. Transformers create EMFs and, because of ongoing debate over the potential health effects of EMFs, are discussed in this section.

¹ United States Environmental Protection Agency. 2010. "Restricted Use Pesticides". Available online: <http://www.epa.gov/pesticides/safety/applicators/restrict.htm>

Electromagnetic fields are created as electrical charges (current) pass through conductors, and are formed in association with alternating current (AC) electrical power, which serves most of our electrical needs. AC electrical power does not flow steadily in one direction, but alternates back and forth 60 times each second; therefore, it is referred to as 60-hertz (Hz) electrical power. The two kinds of fields associated with 60 Hz power are electrical fields that result from the strength of the charge, and magnetic fields that result from the motion of the charge. Taken together, these are referred to as electromagnetic fields. The strength of an EMF is affected by the distance from the source, the voltage of the object creating it, and the electrical/physical environment in which the conductor is placed.

In analyzing the impacts of EMFs, it is useful to look at various EMF levels associated with typical household appliances. The most common unit of measurement of the strength of magnetic fields is the gauss (G). Since the gauss is a large unit of measurement, the milligauss (mG), or 1/1,000 of a gauss, is used to report the strength of magnetic fields associated with most objects. For comparison purposes, the typical American home has a background magnetic field level (away from any appliances) ranging from 0.5 mG to 4 mG. **Table 4.15-1, Magnetic Field Levels for Common Household Appliances**, contains a listing of the magnetic field levels associated with various household appliances at varying distances.

The magnetic fields associated with transformers and power lines are also a function of (1) the height and distance of the transmission line from the receptor, (2) the power loads, expressed as amperage or amps, on those sources, and (3) the amount of time that electricity is actually being transmitted through those transformers and over those lines. Typical magnetic field levels for electrical power lines are shown in **Table 4.15-2**. According to the U.S. EPA, the magnetic field of a typical 230 kV transmission line would probably be less than 120 mG at a distance of 20 feet, 15 mG at a distance of 100 feet, and less than 2 mG at a distance of 300 feet. From these examples, it is clear that, as the distance from the source of the magnetic or electric field increases, the level of exposure is reduced substantially.



SOURCE: Alliance Land Planning and Engineering, Inc. – October 2008

FIGURE 4.15-1

Location of Potentially Hazardous Materials Sites

**Table 4.15-1
Magnetic Field Levels for Common Household Appliances**

Appliance	Distance From Source			
	6 inches	1 foot	2 feet	4 feet
Blender				
Lowest 30 mG ¹	5 mG	-	-	-
Median 70 mG	10 mG	2 mG	-	-
Highest	100 mG	20 mG	3 mG	-
Can Opener				
Lowest 500 mG	40 mG	3 mG	-	-
Median 600 mG	150 mG	20 mG	2 mG	-
Highest	1,500 mG	300 mG	30 mG	4 mG
Refrigerators				
Lowest	-	-	-	-
Median 2 mG	2 mG	1 mG	-	-
Highest	40 mG	20 mG	10 mG	10 mG
Color TV				
Lowest	-	-	-	-
Median	7 mG	2 mG	-	-
Highest		20 mG	8 mG	4 mG
Vacuum Cleaners				
Lowest 100 mG	20 mG	4 mG	-	-
Median 300 mG	60 mG	10 mG	1 mG	-
Highest	700 mG	200 mG	50 mG	10 mG

¹ 1 mG = milligauss

Note: The dash (-) indicates that the magnetic field measurement at this distance from the operating appliance could not be distinguished from background measurements taken before the appliance had been turned on.

Source: U.S. EPA, Office of Radiation and Indoor Air, *EMF In Your Environment, Magnetic Field Measurements of Everyday Electrical Devices*, December 1992.

Table 4.15-2
Typical Magnetic Field Levels for Electrical Power Lines

Types of Transmission Lines	Maximum Right-of-Way	Distance From Lines			
		50 inches	100 feet	200 feet	300 feet
115 Kilovolts (kV)					
Average Usage	30	7 mG	2 mG	0.4 mG	0.2 mG
Peak Usage	63	14 mG	4 mG	1.8 mG	0.8 mG
230 Kilovolts (kV)					
Average Usage	58	20 mG	7 mG	1.8 mG	0.8 mG
Peak Usage	118	40 mG	15 mG	3.6 mG	1.6 mG
500 Kilovolts (kV)					
Average Usage	87	29 mG	13 mG	3.2 mG	1.4 mG
Peak Usage	183	62 mG	27 mG	6.7 mG	3.0 mG

Source: U.S. EPA, Office of Radiation and Indoor Air, EMF In Your Environment, Magnetic Field Measurements of Everyday Electrical Devices, December 1992.

Exposure to 60 Hz EMFs produces weak electrical currents inside the body by a process called induction. According to a Library of Congress Congressional Research Service Issue Brief, “a growing amount of research indicates that these currents may alter the binding of molecules to receptors on the surface of the cell membrane [which] may disrupt membrane signaling events, and trigger abnormal biochemical reaction.” Just what this finding means in terms of the effects of EMFs on our overall health has been the focus of a number of research efforts. Although many studies have been done on this topic to date, their findings are inconclusive. For example, the *Journal of the American Medical Association* states:

Some, but not all, epidemiological studies of health among populations exposed to ambient low-power frequency EMF show associations between exposure to EMF and health effects. However, because of the poor and inconsistent exposure assessment in these studies, the absence of an appropriate dose-response relationship, and absence of supporting laboratory evidence, any conclusion of human health risks at this time is premature.²

In addition, the British National Radiological Protection Board has concluded:

The epidemiological findings that have been reviewed provide no firm evidence of the existence of a carcinogenic hazard from exposure of paternal gonads, the fetus, children, or adults to the extremely low frequency electromagnetic fields that might be associated with residence near major sources of electricity supply, the use of electrical appliances, or work in the electrical, electronic, and telecommunications industry.

² Leonard A. Sagan, MD., *Epidemiological and Laboratory Studies of Power Frequency Electric and Magnetic Fields*. JAMA. 1992; 268(5):625-629.

Because it is not possible to establish a clear relationship between EMF exposure and human health effects, there are no generally accepted criteria for determining acceptable or hazardous levels of EMFs.

The CPUC, in its ongoing investigations of EMFs, has also noted that recent studies have failed to establish that an EMF health hazard actually exists, or that there is a clear cause-and-effect relationship between utility property or operations and public health, or that some degree of exposure limitation, such as the 2 mG level considered by the CPUC at one time, is appropriate to protect public health. Thus, rather than establish new regulations, such as setbacks or exposure levels based on specific EMF levels, the CPUC has elected to continue research efforts regarding potential health hazards and examine ways to minimize EMF exposures along existing or future transmission line rights-of-way.

(a) Regulatory Controls

There are no federal regulations for restricting human exposure to power line EMFs; however, seven states have established limits on electric field strengths at the edge of power line rights-of-way, and two states have established limits on magnetic field strength. In addition, some state utility commissions have issued their own EMF guidelines. There are no similar requirements in California; however, the California State Board of Education requires that schools be sited more than 100 feet from the edge of the right-of-way of 100 to 110 kV lines; 150 feet from 220 to 230 kV lines; and 250 feet from 345 kV lines. Neither the City of Santa Clarita nor the County of Los Angeles have standards for EMF exposure or guidelines for new development in proximity to sources of EMFs, and do not anticipate adopting standards or guidelines in the near future.

(b) On-Site Magnetic Field Levels

As noted above, there are several transformers on the project site, north of PA-2 and PA-3. The transformers do not transverse the project site and no habitable structures are proposed within any setback areas of the transformers. Therefore, it is unlikely that the SCE transformers raise any significant health problems to the project site.

4. PROJECT IMPACTS

a. Significance Threshold Criteria

Appendix G of the *State California Environmental Quality Act (CEQA) Guidelines*, the City of Santa Clarita Local CEQA Guidelines (Resolution 05-38) adopted on April 26, 2005, as well as the City's General Plan and Municipal Code serve as the basis for identifying thresholds of significance. Accordingly, impacts related to human-made hazards are considered significant if the proposed project would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- result in a safety hazard for people residing or working in the project area, for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport,;
- result in a safety hazard for people residing or working in the project area for a project within the vicinity of a private airstrip;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands; or
- expose people to existing sources of potential health hazards (e.g., electrical transmission lines, gas lines, oil pipelines).

The proposed project would result in the buildout of both residential and general commercial uses. These land use types would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, such that the proposed project would not result in a significant impact under this threshold. Similarly, the proposed project's residential and commercial uses would not result in the emission of hazardous emissions or handling of hazardous or acutely hazardous

materials, substances, or waste within 0.25 mile of an existing or proposed school, such that impacts would be less than significant under this threshold.

Additionally, the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5. Therefore, the proposed project would not create a significant hazard to the public or the environment, and the impact under this threshold would be less than significant.

The project site also is not located within 2 miles of a public use airport or the vicinity of a private airstrip. Accordingly, the proposed project would not result in a safety hazard for people residing or working in the project area, and the impact under these two aviation-related thresholds would be less than significant.

Because the project site is not in the vicinity of any electrical transmission lines, gas lines, or oil pipelines, the proposed project would not expose people to existing sources of potential health hazards, and impacts would be less than significant under this threshold.

Impacts to adopted emergency response plans are addressed in **Section 4.14, Sheriff Services**. And, impacts relating to wildland fires are addressed in **Section 4.13, Fire Services**.

As previously discussed, there is no known EMF exposure threshold level available for purposes of assessing environmental impacts under CEQA.

b. Project Specific Impacts

(1) Oil Production Operations

As noted above, the project site is not within the designated boundaries of an oil or gas field. The nearest oil production occurred approximately 1,500 feet south of the project site, but the well has since been plugged and abandoned. (See Rincon 2005, a copy of which is located in **Appendix 4.15** of this EIR.) In addition, based on the 2005, 2007 and 2009 reviews of the project site by Rincon, RTF&A, and JHA, respectively, there is a low probability that the site has been affected by oil and gas production.

Also, crude oil is not listed as a hazardous material in the California Health and Safety Code (Division 20, Chapter 6.5, Article 13, Management of Used Oil). In general, crude oils that have been removed from the ground and placed in pits or sumps have to be certified as non-hazardous according to the California Health and Safety Code. Spilled crude oil which enters either surface or groundwater would be subject to clean-up regulations specified by the Regional Water Quality Control Board. There are no established regulatory clean-up levels for dissolved Total Petroleum Hydrocarbons (TPH) in groundwater; rather, clean-up levels are usually determined by appropriate regulatory agencies on a case-by-case basis.

In the event that development associated with the project occurs in areas where oil production has occurred, each area must be remediated per state law. The methods of remediation could include any of the following: stabilization; on-site incineration; off-site landfilling; bioremediation; and use of in cold-batch asphalt. It should be noted that, as documented in the 2009 Phase I ESA by JHA, former oil well and drill sites near the project site have been abandoned. Furthermore, based on testing and review of records, the oil well and drill sites have been abandoned in accordance with applicable regulations. In any event, the California Division of Oil, Gas and Geothermal Resources (DOGGR) regulates the development of land uses over abandoned oil wells and the project would comply with any directives or regulations issued by DOGGR. Given the low potential for the project site to have been under oil and gas production, the impact would be less than significant.

(2) Underground Storage Tanks

Results of the three Phase I ESAs (see **Appendix 4.15**) prepared for the proposed project concluded that two USTs were located within the project site. Upon review of records associated with these two USTs, both were removed in accordance with applicable standards. Additionally, through on-site field surveys, no residual staining, or deleterious matter associated with the former UST sites were observed. Finally, through records search and on-site investigations, no USTs are currently located within the project site. Therefore, development of the proposed project would not result in a significant impact resulting from exposure to former or current USTs.

(3) Transmission Line Exposure

Because there is no established threshold of significance for exposure to EMFs, there would be no significant impact associated with development of the proposed project adjacent to SCE transformers and transmission lines. Further, there is no established scientific basis to suggest that the project, as designed, would result in any significant adverse effects from EMF exposure. With that said, evidence supports the finding that impacts related to EMFs would be less than significant.

First, as indicated previously, typical maximum EMF levels at the edge of a 200-foot right-of-way for a transmission line extending from a transformer would be up to 3.0 mG. This level is less than the background levels of 0.5 mG to 4.0 mG, which are typically found in the average home. Second, no portion of the project site includes the SCE transmission lines or easements. Third, transmission lines to the project site would be placed underground. For these reasons, the proposed project would not expose people, animal, or plant life populations to known health hazards from SCE transformers and transmission lines; as such, impacts from EMFs would not be significant.

(4) Agricultural Operations

As noted above, a small portion of the site was used for agricultural operations from approximately 1928 to 1954. Therefore, the project site potentially has trace limits of pesticides or other chemicals historically used routinely in agricultural production. In light of the above, development of the project has the potential to expose construction workers and future residents to residual pesticides and agricultural chemicals from the historic agricultural activities. Mitigation measures recommended below would reduce this impact to a less-than-significant level.

(5) Other On-site Hazards

The 2005 Phase I ESA prepared by Rincon concluded that on-site debris piles potentially contain metals, total petroleum hydrocarbons, volatile organic compounds, and pesticides. In addition, due to the historic use of the project site by the Southern Pacific Railroad, that portion of the project site may be affected by metals, herbicides, petroleum hydrocarbons, and other contaminants associated with rail operations. Furthermore, the 2007 Phase I ESA prepared by RTF&A indicated that the older house on PA-1 could contain asbestos and lead paint. If inhaled, the asbestos fibers could result in health problems for construction workers. In summary, demolition, grading and construction activities associated with project implementation could result in the release of potentially hazardous materials to the environment. However, implementation of project-level mitigation measures recommended below would reduce the impact to a less-than-significant level.

(6) Adjacent Properties

As discussed earlier, the three Phase I ESAs prepared for the project site reviewed a database of government-regulated properties in the project vicinity having known and/or recognized environmental conditions that create potential environmental concerns. Based on the database review, there is a low probability that listed off-site properties have impacted or are currently impacting the project site. Moreover, because government regulated properties are, by nature, regulated by specific regulatory agencies, the operation and maintenance of such properties provides a level of assurance that activities or substances will continue to be handled in a manner that would not impact the project site. As a result of the low probability of these properties impacting the project site, development on the project site would not result in a significant impact.

5. MITIGATION MEASURES ALREADY INCORPORATED INTO THE PROJECT

The proposed project has not incorporated any mitigation measures into its design.

6. MITIGATION MEASURES PROPOSED BY THIS EIR

4.15-1 Prior to grading, areas of the project site indicated on **Figure 4.15-1** shall be sampled for the presence of metals, total petroleum hydrocarbons, volatile organic compounds, and pesticides. If the presence of hazards is identified, the area(s) shall be remediated in accordance with federal and state law prior to grading of that portion of the project site.

4.15-2 Prior to demolition activities, an asbestos survey shall be conducted by a qualified environmental professional to determine the presence or absence of asbestos at the existing, on-site, single-family residence. The survey shall be submitted to the City of Santa Clarita. If present, asbestos removal shall be performed by a State-certified asbestos containment contractor in accordance with the Toxic Substance Control Act (15 U.S.C. Section 2601 et. seq.).

7. CUMULATIVE IMPACTS

As human-made hazards are site-specific issues, no impacts would occur with regards to cumulative impacts.

8. CUMULATIVE MITIGATION MEASURES

There would be no cumulative impacts with regard to human-made hazards and, consequently, no cumulative mitigation measures are required.

9. SIGNIFICANT UNAVOIDABLE IMPACTS

As discussed above, there will be no unavoidable significant impacts relating to human-made hazards with implementation of the recommended mitigation measures. Similarly, no unavoidable significant cumulative impacts associated with human-made hazards have been identified.