

4.8 HAZARDS AND HAZARDOUS MATERIALS

Information contained in this section is summarized from the *Phase I Environmental Site Assessment (Phase I ESA) Report for Mount Signal Solar Farm East (April 2011) and Mount Signal Solar Farm West (July 2010)*; the *Phase I Environmental Site Assessment for Calexico Solar Farm I Phase A (July 2011)*; the *Phase I Environmental Site Assessment for Calexico Solar Farm I Phase B (July 2011)*; the *Phase I Environmental Site Assessment for Calexico Solar Farm II Phase A (April 2011)*; and the *Phase I Environmental Site Assessment for Calexico Solar Farm II Phase B (April 2011)* all prepared by GS Lyon Consultants, Inc. (GS Lyon). The Phase I ESAs prepared for the project study area were used to assess the potential hazards and hazardous materials found on-site and the impacts the projects would have to this issue area upon implementation. These documents are included in Appendix H of this Draft Environmental Impact Report (EIR).

4.8.1 Environmental Setting

A hazardous material accident could occur in Imperial County due to the agricultural economy, proliferation of fuel tanks and transmission facilities, intricate canal system, and the confluence of major surface arteries and rail systems. Although a hazardous material accident can occur almost anywhere, particular regions are more vulnerable. The potential for an accident is increased in regions near roadways that are frequently used for transporting hazardous material, and in regions with agricultural or industrial facilities that use, store, handle, or dispose of hazardous material.

Background Review

A review of historic topographic, aerial photographs, historic Sanborn fire insurance maps, and County of Imperial directory listings was performed to evaluate potentially adverse environmental conditions resulting from previous ownership and uses of the site. Additionally, state and federal regulatory lists containing information regarding hazardous materials on or within a one mile radius of the project sites were reviewed. Results from the background review are presented in the Phase I ESA prepared by GS Lyon (Appendix H).

Site Reconnaissance

MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), and OTF–Private

A visual site reconnaissance was conducted for MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B) and OTF within private land by GS Lyon Consultants. The reconnaissance included observations of surface conditions at each of the project sites and of adjoining properties to the extent that they were visible from public areas. Additionally, the reconnaissance also included site observations for the presence of polychlorinated biphenyls (PCBs) and/or asbestos containing materials (ACMs), indications of surface or subsurface hydrocarbon or pesticide contamination, the presence of on-site groundwater wells, pits or sumps, wastewater discharge practices, and surface water drainage patterns.

OTF–BLM Lands

A portion of the transmission facilities associated with the Imperial Solar Energy Center South Project is being constructed within Bureau of Land Management (BLM) lands. The construction and operation of these facilities were addressed in BLM EA 2010-64/2011-0007 and the Imperial Solar Energy Center South Project Final EIR (SCH#2010061038). The proposed OTF within BLM Land would involve the same configuration and development plan for the transmission corridor located within BLM as was evaluated in the Imperial Solar Energy Center South EIR/EA. Transmission facilities approved and/or currently being constructed in conjunction with the Solar Energy Center South Project would then connect with new transmission facilities proposed on BLM lands from the westerly terminus of the Imperial Solar Energy Center South Project transmission line (located within BLM lands) north to the existing Imperial Valley Substation.

The potential presence of hazardous materials was reviewed as part of the Imperial Solar Energy Center South EIR/EA and none were identified (Final EIR/EA, Section 3.10, pages 3.10-7 through 3.10-11).

4.8.1.1 Regulatory Setting

This section identifies and summarizes federal, state, and local laws, policies, and regulations that are applicable to the projects.

4.8.1.1.1 Federal

The Resource Conservation and Recovery Act

The goal of the Federal Resource Conservation and Recovery Act (RCRA), a federal statute passed in 1976, is the protection of human health and the environment, the reduction of waste, the conservation of energy and natural resources, and the elimination of the generation of hazardous waste as expeditiously as possible. The Hazardous and Solid Waste Amendments (HSWA) of 1984 significantly expanded the scope of RCRA by adding new corrective action requirements, land disposal restrictions, and technical requirements. The corresponding regulations in 40 CFR 260-299 provide the general framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste.

The Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over 5 years, \$1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified.

Occupational Safety and Health Administration

Occupational Safety and Health Administration's (OSHA) mission is to ensure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA standards are listed in 29 CFR Part 1910.

The OSHA Process Safety Management of Highly Hazardous Chemicals (29 CFR Part 110.119) is intended to prevent or minimize the consequences of a catastrophic release of toxic, reactive, flammable, or explosive highly hazardous chemicals by regulating their use, storage, manufacturing, and handling. The standard intends to accomplish its goal by requiring a comprehensive management program integrating technologies, procedures, and management practices.

Emergency Planning Community Right-to-Know Act of 1986 (42 USC 11001 et seq.)

The Emergency Planning Community Right-to-Know Act (EPCRA) was included under the Superfund Amendments and Reauthorization Act (SARA) law and is commonly referred to as SARA Title III. EPCRA was passed in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. These concerns were triggered by the disaster in Bhopal, India, in which more than 2,000 people suffered death or serious injury from the accidental release of methyl isocyanate. To reduce the likelihood of such a disaster in the U.S., Congress imposed requirements on

both states and regulated facilities. EPCRA establishes requirements for federal, state, and local governments, Indian Tribes, and industry regarding emergency planning and “Community Right-to-Know” reporting on hazardous and toxic chemicals. SARA Title III requires states and local emergency planning groups to develop community emergency response plans for protection from a list of Extremely Hazardous Substances (40 CFR 355). The Community Right-to-Know provisions help increase the public’s knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. In California, SARA Title III is implemented through the California Accidental Release Prevention (CalARP).

Hazardous Materials Transport Act – Code of Federal Regulations

The Hazardous Materials Transportation Act (HMTA) was published in 1975. Its primary objective is to provide adequate protection against the risks to life and property inherent in the transportation of hazardous material in commerce by improving the regulatory and enforcement authority of the Secretary of Transportation. A hazardous material, as defined by the Secretary of Transportation is, any “particular quantity or form” of a material that “may pose an unreasonable risk to health and safety or property.” (EPA 2011)

Federal Water Pollution Control Act (Clean Water Act)

The objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. The Oil Spill Prevention, Control, and Countermeasures (SPCC) Program of the CWA specifically seeks to prevent oil discharges from reaching waters of the United States or adjoining shorelines. Further, farms are subject to the SPCC rule if they:

- Store, transfer, use, or consume oil or oil products, and
- Could reasonably be expected to discharge oil to waters of the United States or adjoining shorelines. Farms that meet these criteria are subject to the SPCC rule if they meet at least one of the following capacity thresholds:
 - Aboveground oil storage capacity greater than 1,320 gallons, or
 - Completely buried oil storage capacity greater than 42,000 gallons.

However, the following are exemptions to the SPCC rule:

- Completely buried storage tanks subject to all the technical requirements of the underground storage tank regulations.
- Containers with a storage capacity less than 55 gallons of oil.
- Wastewater treatment facilities.
- Permanently closed containers.
- Motive power containers (e.g., automotive or truck fuel tanks).

Federal Insecticide, Fungicide and Rodenticide Act

The objective of Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is to provide federal control of pesticide distribution, sale, and use. All pesticides used in the United States must be registered (licensed) by EPA. Registration assures that pesticides will be properly labeled and that, if used in accordance with specifications, they will not cause unreasonable harm to the environment. Use of each registered pesticide must be consistent with use directions contained on the label or labeling.

4.8.1.1.2 State

The California Environmental Protection Agency

The California Environmental Protection Agency (Cal-EPA) and the State Water Resources Control Board (SWRCB) establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Waste Control Law
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Within Cal-EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency, for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law.

California Department of Toxic Substances Control

Each year, Californians generate two million tons of hazardous waste. One hundred thousand privately- and publicly-owned facilities generate one or more of the 800-plus wastes considered hazardous under California law. Properly handling these wastes avoids threats to public health and degradation of the environment.

The Department of Toxic Substances Control (DTSC) regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. Approximately 1,000 scientists, engineers, and specialized support staff make sure that companies and individuals handle, transport, store, treat, dispose of, and clean-up hazardous wastes appropriately. Through these measures, DTSC contributes to greater safety for all Californians, and less hazardous waste reaches the environment.

On January 1, 2003, the Registered Environmental Assessor (REA) program joined DTSC. The REA program certifies environmental experts and specialists as being qualified to perform a number of environmental assessment activities. Those activities include private site management, Phase I Environmental Site Assessments, risk assessment and more.

California Division of Occupational Safety and Health

The California Division of Occupational Safety and Health (Cal-OSHA) protects workers and the public from safety hazards through its Cal/OSHA programs and provides consultative assistance to employers. Cal-OSHA issues permits, provides employee training workshops, conducts inspections of facilities, investigates health and safety complaints, and develops and enforces employer health and safety policies and procedures.

California Emergency Response Plan

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The plan is managed by the State Office of Emergency Services (OES), which coordinates the responses of other agencies including Cal-EPA, the California Highway Patrol (CHP), the California Department of Fish and Game (CDFG), the Regional Water Quality Control Board (RWQCB),

Imperial County Sheriff's Department, Imperial County Fire Department, and the City of Imperial Police Department.

Department of Conservation, Division of Oil, Gas, and Geothermal Resources

The Division of Oil, Gas, and Geothermal Resources (DOGGR) was formed in 1915 to address the needs of the state, local governments, and industry by regulating statewide oil and gas activities with uniform laws and regulations. The Division supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs. The Division's programs include: well permitting and testing; safety inspections; oversight of production and injection projects; environmental lease inspections; idle-well testing; inspecting oilfield tanks, pipelines, and sumps; hazardous and orphan well plugging and abandonment contracts; and subsidence monitoring.

4.8.1.1.3 Local

Imperial County General Plan

The Seismic and Public Safety Element identifies goals and policies that will minimize the risks associated with natural and human-made hazards, and specifies land use planning procedures that should be implemented to avoid hazardous situations. The purpose of the Seismic and Public Safety Element is directly concerned with reducing the loss of life, injury, and property damage that might result from disaster or accident. In addition, the Element specifies land use planning procedures that should be implemented to avoid hazardous situations. The proposed projects would be consistent with the policies and procedures listed in these Elements.

County of Imperial Public Health Department

Hazardous Materials and Medical Waste Management

DTSC was appointed the Certified Unified Program Agency (CUPA) for Imperial County in January 2005. The Unified Program is the consolidation of six state environmental programs into one program under the authority of a Certified Unified Program Agency. The CUPA inspects businesses or facilities that handle or store hazardous materials; generate hazardous waste; own or operate aboveground or underground storage tanks; and comply with the California Accidental Release Prevention (CalARP) Program. The CUPA Program is instrumental in accomplishing this goal through education, community and industry outreach, inspections and enforcement.

4.8.1.2 Existing Conditions

MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), and OTF–Private Land

The project study area is comprised of several agricultural fields that have been in and are currently in crop production. A total of four Imperial Irrigation District (IID) sumps are located on the MSSF1 component of the project study area: one at the central northern boundary of APNs 059-130-001 and 059-130-002, one at the southern boundary of APNs 059-130-005 and 059-130-004, one at the northwest corner of 052-190-012, and one on the central southern boundary of APN 052-210-016.

Based on research conducted by GS Lyon, the project study area has been occupied by agricultural fields in production since approximately the mid-1940s. Additionally, a small farmhouse located on APN 059-130-002 (MSSF1) has been on the property since at least 1956. A small fenced farm shop that has been on-site since at least 1949 (less than 2 acres) is located in the northeast corner of APN 059-110-007 (CSF2(A)). This farm shop has been primarily used to repair, store, and maintain farm

equipment. Other typical farm shop activities can sometimes include: filling farm equipment with the necessary oils and gasoline on-site; changing engine oil on-site; and storing pesticides, herbicides, gasoline, and oil onsite.

Further research indicated that from 1941 until 2004, no service stations, chemical manufacturers, petroleum manufacturers, distributors, or automotive repair facilities were noted at or in the immediate vicinity of the site.

OTF – BLM Land

The potential presence of hazardous materials was reviewed as part of the Imperial Solar Energy Center South EIR/EA and none were identified (Final EIR/EA, Section 3.10, pages 3.10-7 through 3.10-11).

Industrial Areas

Johnson Brothers private airstrip is located within the proposed boundaries of CSF2(A) along with a maintenance yard that includes the storage of pesticides and herbicides (Figure 4.8-1). Frontier Agricultural Services uses the facility for crop dusting services which includes the routine dispersal of fungicides or insecticides on growing crops. Additionally, there is a cattle feed lot operating approximately one mile north of APN 052-210-014 (CSF1(A)).

Drainage Features

Drainage features have been observed within the project study area. Specifically, the Geeson Drain is located at the north boundary of APN 052-210-014 (CSF1(A)). Geeson is part of a man made canal system located within the IID service area. While irrigation water for agricultural purposes is conveyed into the Valley by way of the All-American Canal, the drainage system, consisting of more than 1,400 miles of surface drains, collects surface and subsurface discharge waters from the Valley's agricultural fields and conveys them to the Salton Sea, either directly, or through the New and Alamo Rivers (Imperial Irrigation District 2005). Additionally, the New River is located approximately 0.5 miles east of the easternmost boundary for CSF2(A) (Figure 3.0-1, Project Description).

4.8.1.2.1 Existing Environmental Hazards

MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), and OTF–Private Land

Drums, Aboveground Storage Tanks, and Containers

CSF2(A) has an above ground gasoline tank within a metal containment structure in the central portion of the farm shop yard, along with pesticide/herbicide tanks and 55 gallon drums.

Underground Storage Tanks

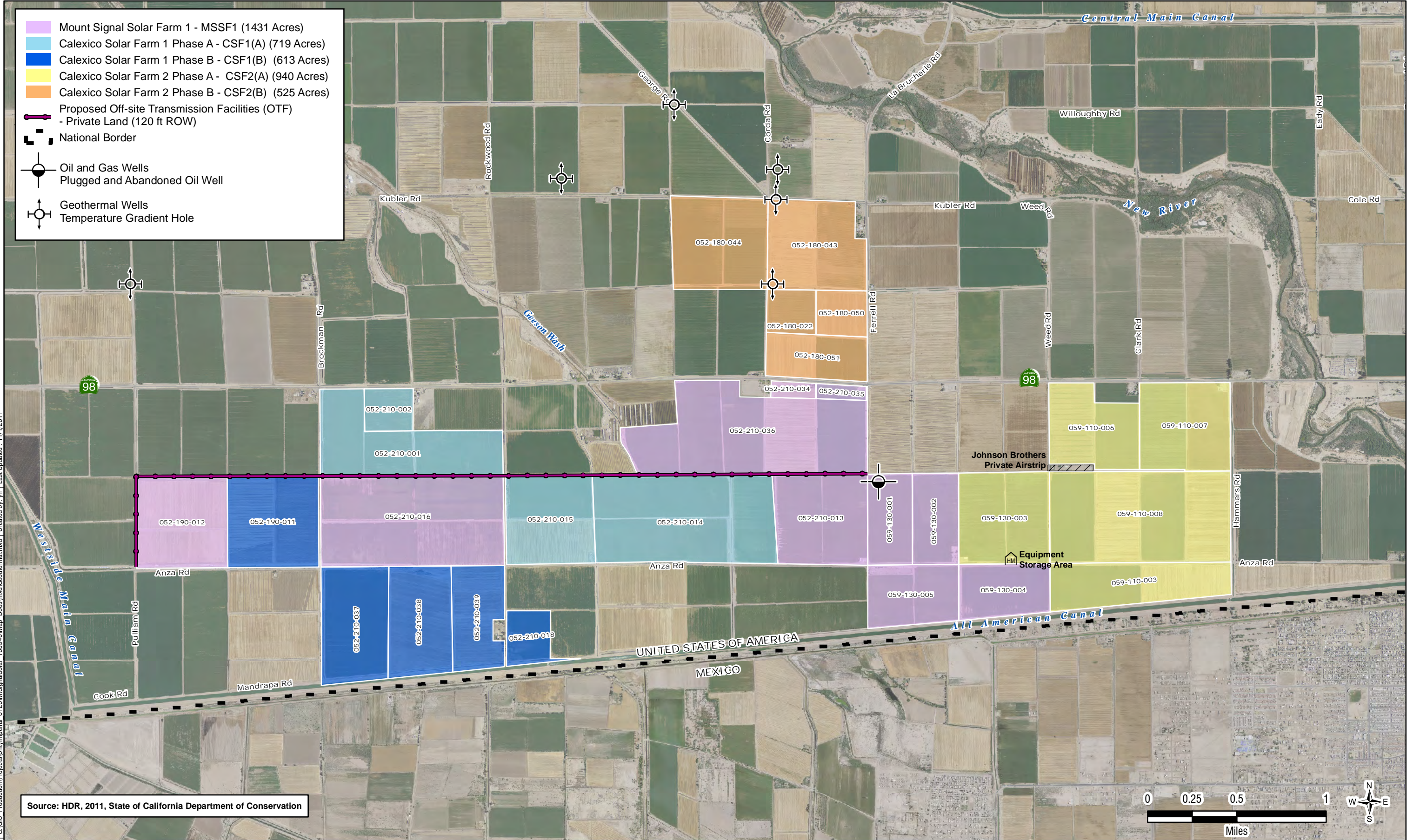
No underground storage tanks were observed within the project study area during the site visit conducted by GS Lyon.

Surface Staining

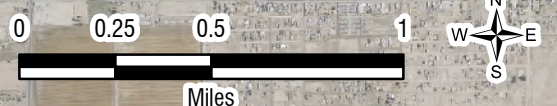
Various hydrocarbon stains were noted on surface soils throughout the farm shop property (CSF2(A)). Hydrocarbon can originate from on-road mobile sources and non-road mobile sources. Typical non-road mobile sources of hydrocarbon are primarily gasoline equipment or diesel equipment (EPA 2010). Hydrocarbons are a precursor to ground-level ozone, a serious air pollutant in cities across the United States. A key component of smog, ground-level ozone is formed by reactions involving hydrocarbons and

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Mount Signal Solar Farm 1 - MSSF1 (1431 Acres)
 Calexico Solar Farm 1 Phase A - CSF1(A) (719 Acres)
 Calexico Solar Farm 1 Phase B - CSF1(B) (613 Acres)
 Calexico Solar Farm 2 Phase A - CSF2(A) (940 Acres)
 Calexico Solar Farm 2 Phase B - CSF2(B) (525 Acres)
 Proposed Off-site Transmission Facilities (OTF)
 - Private Land (120 ft ROW)
 National Border
 Oil and Gas Wells
 Plugged and Abandoned Oil Well
 Geothermal Wells
 Temperature Gradient Hole



Source: HDR, 2011, State of California Department of Conservation



nitrogen oxides in the presence of sunlight. Hydrocarbon emissions result from incomplete fuel combustion and from fuel evaporation. However, today's cars are equipped with emission controls designed to reduce both exhaust and evaporative hydrocarbon emissions (EPA 2010).

Transformers

Transformers have been noted within the project sites; however, no evidence of leakage from the transformers within the boundaries of the project study area was observed by GS Lyon. Additionally, IID records indicate that all transformers in the Imperial Valley have been tested for PCBs and have been subsequently replaced if they contained PCBs.

Sewer/Water

No sewer and potable water service are currently provided to the project study area.

Pesticides and Herbicides

The project study area has been used for and is currently in agricultural production. Consequently, there is a potential for the project sites and OTF to contain hazards related to pesticide and herbicide use from aerial and/or ground application. CSF2(A) contains an equipment storage area used for aerial and ground applicator of pesticides located in the central portion of APN 059-130-003 (Figure 4.8-1). Although many agricultural fields are burned after crop removal (wheat stubble, asparagus, etc) pesticide residue can still be found in the soils. Based on on-site reconnaissance conducted by GS Lyon, concentrations of Dichlorodiphenyltrichloroethane/dichlorodiphenylethylene (DDT/DDE) pesticides in the soil were observed at 75% below regulatory action levels and will not exceed levels already observed.

Irrigation Drain Water Quality

At the request of IID, United States Geologic Survey (USGS) performed a "one-time" water quality study of the 27 irrigation drains throughout Imperial Valley during the summer of 1994 and results indicated that the drains sampled contained less than the regulatory limits of arsenic, selenium, and nitrites for drinking water.

Groundwater and Wells

No evidence of groundwater or oil and gas wells were observed on the site during the site reconnaissance conducted by GS Lyon in 2011; however, according to the DOGGR database, there is a plugged and abandoned oil well (MSSF1) and an abandoned shallow temperature gradient (geothermal) well located in the area of CSF2(B) (Figure 4.8-1). There is a potential for a second abandoned temperature gradient well to be located at the northern most boundary of the project study area (CSF2(B)). Additionally, there are four abandoned temperature gradient wells located within proximity to the project study area (Figure 4.8-1).

Electromagnetic Fields

Electric and magnetic fields (EMF) are areas of energy that surround any electrical device. Power lines, electrical wiring, computers, televisions, hair dryers, household appliances and everything else that uses electricity are sources of EMF. The magnetic field is not blocked by buildings so outdoor sources like power lines can add to the EMF inside your home. However, the field decreases rapidly with distance so that most homes are too far from high voltage lines to matter.

Any potential health risk associated with EMF is considered low as there are generally no sensitive uses in immediate proximity to the site. The California Department of Health Services (DHS), California Electric and Magnetic Fields Program provides information regarding known possible health effects from EMF created by the use of electricity. DHS references the National EMF Research and Public

Information Dissemination (RAPID) Program, established by Congress as part the Energy Policy Act of 1992, which has published its findings concluding evidence of the risk of cancer from EMF around power lines is weak. The report recognizes that EMF exposure "cannot be recognized as entirely safe" but "believes that the probability that EMF exposure is truly a health hazard is currently small" with "marginal scientific support that exposure to this agent is causing any degree of harm. Furthermore, in a recent California Public Utilities Commission (CPUC) issued Decision D.06-01-042, the CPUC stated "at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences."

Pursuant to California Environmental Quality Act (CEQA) Guideline 15145 "If, after a thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the lead agency should note its conclusion and terminate discussion of the impact." Because there are no conclusive studies on EMF impacts it's too speculative to evaluate further in this EIR.

OTF–BLM Land

The potential presence of hazardous materials was reviewed as part of the Imperial Solar Energy Center South EIR/EA and none were identified (Final EIR/EA, Section 3.10, pages 3.10-7 through 3.10-11). The OTF within BLM Land would extend into desert lands where no sensitive uses are located.

4.8.1.2.3 Hazardous Building Materials and Pesticides

There are 23 residences located in the vicinity of the project study area. Two residences are located within the boundaries of the MSSF1 project sites and one is located within the boundary of CSF2(A), as shown on Figure 4.3-1. GS Lyon identified only the two structures identified under Environmental Setting, Section 4.8.1, located on MSSF1 and CSF2 (A) project sites as possible sources of contaminants associated with asbestos and/or lead due to their age. Therefore, this chapter focuses on the potential impacts associated with those two structures.

Asbestos

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials are damaged or disturbed. When these fibers get into the air they may be inhaled into the lungs, where they can cause significant health problems. The California Occupational Health and Safety Administration (Cal-OSHA) defines asbestos containing materials as any material that contains 0.1% asbestos by weight. Asbestos is commonly found in old buildings built between the 1940s and the mid-1970s.

Buildings on agricultural establishments and agribusinesses may contain asbestos or ACMs. Used for insulation and as a fire retardant, asbestos and ACMs can be found in a variety of building construction materials, including pipe and furnace insulation materials, asbestos shingles, millboard, textured paint and other coating materials, and floor tiles. Asbestos may also be found in vehicle brakes. Buildings built in the sixties are more likely to have asbestos-containing sprayed- or troweled-on friable materials than other buildings (Environmental Protection Agency 2011). Given the age of the older buildings (as depicted in historic aerial photographs in the attached Phase 1 ESA (Appendix H)) on-site (APNs 059-130-002) (MSSF1) and 052-180-043 (CSF2 (A)), it is very likely the buildings contain asbestos.

Dichlorodiphenyltrichloroethane/dichlorodiphenylethylene/dichlorodiphenyl-dichloroethane

Dichlorodiphenyltrichloroethane (DDT) (DDE and dichlorodiphenyldichloroethane (DDD) is a degradation byproduct of DDT) was developed as the first of the modern synthetic insecticides in the 1940s. It was initially used with great effect to combat malaria, typhus, and the other insect-borne human diseases

among both military and civilian populations and for insect control in crop and livestock production, institutions, homes, and gardens. DDT's quick success as a pesticide and broad use in the United States and other countries led to the development of resistance by many insect pest species (EPA 2011). Initially, DDT was regulated by the US Department of Agriculture from the late 1950s to the 1960s. The Environmental Protection Agency (EPA) was formed in 1970 and subsequent regulatory responsibility of DDT was transferred over. Although the EPA issued a cancellation order in 1972 for DDT, due to its ability to accumulate in fatty tissue and its persistence in the environment, residues of concern from historical use still remain (EPA 2011). DDT and its byproducts bind strongly to soils and as a result, can remain in some soils for a long time, potentially hundreds of years. The length of time that DDT will last in soil depends on many factors including temperature, type of soil, and moisture content of soil. DDT persists for a much shorter time in tropical environments where chemical evaporation and microorganism degradation are accelerated. Additionally, DDT will persist for a much shorter length of time in areas where soils are routinely flooded or are moist than where soils are arid (Agency for Toxic Substances and Disease Registry (ATSDR) - Center for Disease Control (CDC) 2011). DDT evaporates at higher rates when it initially enters the soil and subsequent evaporation process slows down enabling DDT to move into spaces in the soil too small for microorganisms to reach it and break it down efficiently. In tropical areas, DDT may evaporate in much less than a year. In temperate areas, half of the DDT initially present usually evaporates in about five years. However, in some cases, half of the DDT initially present will persist in soils for 20, 30, or more years. Because DDT binds to soils, there's a potential for it to enter into lakes and rivers through runoff. However, although DDT or its breakdown products are still present in some air, water, and soil samples, levels in most air and water samples are presently so low that exposure is of little concern. Even though DDT has not been used in this country since 1972, because some soils may still contain some residual DDT, it may subsequently be taken up by plants and eaten by animals and people. DDT from contaminated water and sediment may be taken up by fish. The amount of DDT in food has greatly decreased since DDT was banned and should continue to decline. According to the CDC, the largest fraction of DDT in a person's diet comes from meat, poultry, dairy products, and fish, including the consumption of sport fish. Leafy vegetables generally contain more DDT than other vegetables, possibly because DDT in the air is deposited on the leaves (ATSDR/CDC 2011). The predominant agriculture cultivated on the project sites primarily consist of alfalfa, barley, and/or Bermuda grass in any given year. Row and vegetable crops are also prominent in the project study area. As previously discussed, although present in the soils within the project study area, the concentrations of DDT/DDE/DDD observed are well below (75%) regulatory action levels and will not exceed levels already observed.

Lead

Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably paint. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Primary sources of lead exposure are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil. Lead contamination can also come from cars built prior to the early 1980s.

Lead-based paint on an agricultural establishment or agribusiness farm will typically be found on interiors and exteriors of buildings constructed before 1978. During renovation and demolition, paint removal has the potential to impact human health and the environment as fibers, dust, and paint chips are released. Paint chips and dust can cause indoor air contamination during renovation, and soil contamination from demolition or improper disposal (EPA 2011). Given the age of the older buildings (as depicted in historic aerial photographs in the attached Phase 1 ESA (Appendix H)) on-site (APNs 059-130-002) (MSSF1) and 052-180-043 (CSF2(A)), it is very likely the two buildings built on-site prior to the 1950's contain lead based paint.

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) were manufactured from 1929 until their manufacture was banned in 1979. Because of its versatility (non-flammability, chemical stability, high boiling point, and electrical

insulation properties), PCBs were used in various industrial and commercial applications: electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and many other industrial applications (EPA 2010). Although no longer used in the US, there is a chance that PCBs may be found in products and materials manufactured before the 1979 ban. Industrial uses manufactured prior to 1979 could contain PCBs. Site reconnaissance conducted on the project sites and OTF-Private did not indicate the presence of PCBs on-site.

4.8.1.2.4 Environmental Database Research

Environmental Database Research (EDR) generated a compilation of State and Federal Regulatory lists containing information regarding hazardous materials occurrences on or within a one mile radius of the project site. A review of EDR found no sites were identified within a one mile radius as a potential risk to the project study area.

4.8.1.2.2 Airport Land Use Compatibility Plan

The eastern border of the project study area is located approximately one mile from the Calexico International Airport. Solar generating facilities associated with the CSF2(A) site location are located adjacent to the Imperial County Airport Land Use Compatibility Plan (ALUCP) for Calexico International Airport and are located adjacent to Compatibility Zone "B2," Extended Approach and Departure Zone, which is identified as having a significant risk from airport activity (County of Imperial, ALUCP 1996). No individual airport policies specific to the Calexico International Airport have been adopted in conjunction with the ALUCP. However, the projects would require the use of transmission towers of up to 140 feet in height, which would exceed the height limit established within the A-2, A-2-R, and A-3 zones. Title 9 Division 5, Imperial County has established a maximum height of 120 feet for structures: "Non-residential structures and commercial communication towers shall not exceed 120 feet in height, and shall meet the Airport Land Use Compatibility Plan requirements." As part of the projects, a variance application would be required which, if approved by the County, would allow the new towers to be built at 140 feet in height. Section 4.10 "Land Use Planning," provides a more detailed discussion regarding the project study area's proximity to the ALUCP and variance required for the OTF-Private and OTF-BLM Lands.

4.8.2 Impacts and Mitigation Measures

This section presents the significance criteria used for considering project-related land used compatibility impacts and consistency with applicable planning documents, the methodology employed for the evaluation, and mitigation requirements, if necessary.

4.8.2.1 Thresholds of Significance

Consistent with the CEQA Guidelines and the professional judgment of the County's staff and environmental consultants, the projects would result in a significant impact on the environment if it 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 create a significant hazard to the public or the environment;

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and
- 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.

4.8.2.2 Methodology

This analysis evaluates the potential for the projects, as described in Chapter 3, Project Description, hazards and hazardous materials in the project study area. Based on the extent of these interactions, this analysis considers whether these conditions would result in an exceedance of one or more of the applied significance criteria as identified above.

As indicated in the environmental setting, six separate Phase I ESAs have been prepared which cover the MSSF1 (West and East), CSF1(A) and (B), and CSF2(A) and (B), and OTF- Private site locations. These reports are included as Appendix H of this EIR. The analysis prepared for this section in the EIR also relied on information contained on the EPA’s website for the hazardous materials found on-site. The information obtained from these sources was reviewed and summarized to present the existing conditions and to identify potential environmental impacts, based on the significance criteria presented above. Impacts associated with hazards and hazardous materials that could result from project construction and operational activities were evaluated qualitatively based on site conditions; expected construction practices; materials, locations, and duration of project construction and related activities. Conceptual site plans for the projects were also used to evaluate potential impacts. These conceptual exhibits are provided in Figures 3.0-4 through 3.0-6 and 3.0-9 through 3.0-13.

4.8.2.3 Impact Analysis

<p>IMPACT 4.8-1</p>	<p>Possible Risk to the Public or Environment. The projects could result in a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.</p>
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private

Although considered minimal, it is anticipated that the project study area will generate the following materials during construction, operation, and long term maintenance: insulating oil (used for electrical equipment; lubricating oil (used for maintenance vehicles); various solvents/detergents (equipment cleaning); and gasoline (used for maintenance vehicles). However, all materials contained on-site will be stored in appropriate containers (not to exceed a 55 gallon drum) protected from environmental conditions, including rain, wind, and direct heat and physical hazards such as vehicle traffic and sources of heat and impact. In addition, if the on-site storage of hazardous materials necessitate, at any time during construction and/or operations and long term maintenance, quantities in excess of 55 gallons, a Hazardous Material Management Program (HMMP) would be required. As previously discussed, CSF2(A) could contain multiple 55-gallon drums on-site. An HMMP will need to be developed and implemented prior to the start of construction or prior to the storage on-site of an excess of 55 gallons of hazardous materials. In addition, the HMMP developed for the projects will include, at a minimum, procedures for:

- Hazardous materials handling, use and storage;
- Emergency response;
- Spill control and prevention;

- Employee training; and
- Record keeping and reporting.

Additionally, hazardous material storage and management will be in accordance with requirements set forth by the Imperial County Fire Department (ICFD), Imperial County Office of Emergency Services, DTSC, and CUPA for storage and handling of hazardous materials. Further, construction activities would occur according to OSHA regulatory requirements; therefore, it is not anticipated that the construction activities for the proposed projects would release hazardous emissions or result in the handling of hazardous or acutely hazardous materials, substances, or waste. This could include the release of hazardous emissions, materials, substances, or wastes during construction activities. With the implementation of an HMMP and adherence to requirements set forth by the ICFD, Imperial County Office of Emergency Services, DTSC, OSHA regulatory requirements and CUPA would reduce the impact to a level of **less than significant**.

MSSF1, CSF2(A)

Due to the age of the two buildings on-site (MSSF1 and CSF2(A)) built prior to the 1950’s, there could be the potential for unknown hazardous materials to be encountered during site preparation, or construction activities on these project sites. . However, no buildings are proposed to be demolished. Therefore, potential impacts related to the release of lead and/or asbestos would be **less than significant**. As discussed above, GS Lyon observed hydrocarbon stains throughout surface soils at the farm shop located within the boundaries of CSF2(A). Therefore, construction activities in these areas could result in a **significant** impact. As discussed below, implementation of Mitigation Measure 4.8-1 would reduce this impact to less than significant.

Mitigation Measure(s)

The following mitigation measure is required for **CSF2(A)**:

4.8-1 Prepare Phase II Environmental Site Assessment. Prior to the issuance of any grading permits, a Phase II Environmental Site Assessment (ESA) will need to be conducted to determine the extent of hydrocarbon contamination located at the farm shop within the boundaries of the project study area (CSF2(A)). A Phase II ESA will provide a chemical analysis of hydrocarbon soil contamination and thus, assist in assessing the extent of contamination. Upon the identification of the extent of hydrocarbon contamination, if required by the Phase II ESA investigation, remediation shall occur in accordance with all applicable federal, state, and local regulations.

Significance After Mitigation

With the implementation of the mitigation measure identified above, a Phase II ESA will be conducted on the less than 2 acre farm shop to determine the extent of hydrocarbon contamination and remediation action that is required. Implementation of the remediation requirements would reduce the impact from hydrocarbon stains to **less than significant**.

<p>IMPACT 4.8-2</p>	<p>Possible risk to the public or environment. An accidental release of hazardous materials into the environment would not result from project related activities.</p>
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private

Pesticides/Fertilizers

The project study area has been used in the past and present for agricultural purposes. Typical agricultural practices in the Imperial Valley consist of aerial and ground application of pesticides and the

application of chemical fertilizers to both ground and irrigation water. Therefore, low level concentrations of DDT and DDE pesticides in the soil have been detected; however, these low concentrations are below regulatory levels. The FIFRA provides federal control of pesticide distribution, sale, and use. All pesticides used in the United States must be registered (licensed) by EPA. Registration assures that pesticides will be properly labeled and that, if used in accordance with specifications, they will not cause unreasonable harm to the environment. Use of each registered pesticide must be consistent with use directions contained on the label or labeling. Further, because the objective of the proposed projects is to provide utility scale solar utility power, the construction phase, operations and long term maintenance of the facility would not result in additional application of pesticides or fertilizers. Therefore, a **less than significant impact** has been identified for this issue area.

Hazardous Materials

As previously discussed, typical project related oils, solvents/detergents and gasoline will be used during the construction, operation, and long term maintenance phases within the project study area. These materials have the potential to be released into the environment as a result of natural hazard (i.e., earthquake) related events or due to human error. However, as discussed above, all hazardous materials identified in this section stored on-site will be required to be stored in appropriate containers. Additionally, materials stored in excess of one 55-gallon drum will require the implementation of a HMMP. It is anticipated that the project sites would generate hazardous materials requiring the storage of multiple 55-gallon drums. Consequently, the implementation of an HMMP would be required. This will ensure proper handling, storage, and use is exercised to prevent spills. With the implementation of an HMMP and adherence to requirements set forth by the ICFD, Imperial County Office of Emergency Services, DTSC, OSHA regulatory requirements and CUPA, the proposed projects would result in a **less than significant impact** related to the release of hazardous materials.

MSSF1 and CSF2(B)

Oil, Gas, and Geothermal Wells

As discussed, according to DOGGR database there is a plugged and abandoned oil well (MSSF1) and an abandoned shallow temperature gradient (geothermal) well located in the area of CSF2(B) (Figure 4.8-1). There is a potential for a second abandoned temperature gradient well to be located at the northern most boundary of the project study area (CSF2 (B)). Hazards associated with the potential exposure of the wells or alteration of the abandonment plugs is considered a potentially **significant impact** in the absence of mitigation. As discussed below, implementation of Mitigation Measure 4.8-2 would reduce this impact to less than significant.

Mitigation Measure(s)

The following mitigation measure is required for **MSSF1 and CSF2(B)**:

4.8-2 Well Abandonment. Prior to issuance of a grading permit, the applicant(s) shall submit evidence demonstrating that the locations of all known wells on-site have been reviewed by the DOGGR and that all well abandonment requirements, including gas leakage testing, have been completed according to DOGGR specifications, including construction Project Site Review and Well Abandonment Procedures.

Significance After Mitigation

With the implementation of the Mitigation Measure 4.8-2, potential impacts from the exposure of on-site wells or alteration of the abandonment plugs would be reduced to a level of **less than significant**. This mitigation measure ensures that all well abandonment requirements will be completed according to DOGGR specifications.

IMPACT 4.8-3	Distance to existing or proposed school site. The projects would not pose a risk to nearby (within ¼ mile) school or proposed school facility.
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private, and OTF-BLM Lands

The project study area is not located within ¼ mile of any existing or proposed schools. Therefore, **no significant impact** is identified for this issue area.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.8-4	Possible risk to the public or environment. The projects are not located on a site included on a list of hazardous materials sites pursuant to Government Code Section 65962.5.
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private, and OTF-BLM Lands

The project sites are not listed as hazardous materials sites pursuant to Government Code Section 65962.5 and as a result, **no significant impact** has been identified for this issue area.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.8-5	Possible safety hazard to the public residing or working within proximity of an airport land use plan. The projects are not located within an airport land use plan. CSF2(A) and OTF are located within two miles of a public airport or public use airport.
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MSSF1, CSF1(A), CSF1(B), and CSF2(B)

MSSF1, CSF1(A), CSF1(B), and CSF2(B) are not located within an Airport Land Use Plan, nor are they located within a “sphere of influence” for Calexico International Airport. Therefore, **no impact** has been identified.

CSF2(A) and OTF-Private

Chapter 4.10, Land Use/Planning addresses CSF2(A) site adjacency to the Calexico International Airport ALUCP as well as the height variance required for the route of the proposed OTF towers. The CSF2(A) site is not physically located within any of the zones within the ALUCP. However, the ALUCP has not reviewed the project to determine consistency with the ALUCP, including the variance for the transmission tower height. As a result, the County is unable to verify the project for height restrictions or other design considerations for the solar facilities and therefore, this impact is considered **significant**. As discussed below, implementation of Mitigation Measure 4.10-2b would reduce this impact to less than significant.

Mitigation Measure(s)

The following mitigation measure is required for CSF2(A) and OTF-Private:

- 4.10-2b** Coordinate with Imperial County ALUC and Incorporate Design Recommendations. The project applicant shall coordinate with the Imperial County ALUC and, if required

FAA, to incorporate site-specific recommendations for the site plan for CSF2(A) in relation to facilities proposed within 200-feet of Hammers Road.

Significance After Mitigation

With the implementation of Mitigation Measure 4.10-2b, the project applicant would be required to acquire the necessary project approvals to maintain consistency with local General Plan, Zoning and ALUCP requirements and the impact would be reduced to a **less than significant** level.

IMPACT 4.8-6	Possible safety hazard to the public residing or working within proximity to a private airstrip. The projects are located within the vicinity of a private airstrip.
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private, and OTF-BLM Lands

Johnson Brothers private airstrip is located within the boundaries of the project study area (CSF2(A)). Project features such as transmission towers and overhead/aboveground utility lines, lighting, and the use of cranes during construction and maintenance have the potential to conflict with commercial aerial application operations association with farming and aircraft utilizing nearby private airstrips. This impact is considered **significant**. As discussed below, implementation of Mitigation Measure 4.8-7 would reduce this impact to less than significant.

Mitigation Measure(s)

With the implementation of Mitigation Measure 4.10.2B in Land Use/Planning, possible safety hazard to the public residing or working within proximity of an airport land use plan, identified for projects sites CSF2(A) and OTF-Private, would be reduced to a level **less than significant**.

IMPACT 4.8-7	Possible impediment to emergency plans. The projects would not interfere with an adopted emergency response plan or emergency evacuation plan.
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private, and OTF-BLM Lands

The projects are not expected to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. The applicant will be required, through the conditions of approval, to prepare a street improvement plan for the project sites that will include emergency access points and safe vehicular travel. In addition, local building codes would be followed to minimize flood, seismic, and fire hazard. Therefore, a **less than significant impact** is identified for this issue area.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.8-8	Possible risk to people or structures caused by wildland fires. The project study area could be in an area susceptible to wildland fires.
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private, and OTF-BLM Lands

According to the Imperial County Natural Hazard Disclosure (Fire) Map prepared by the California Department of Forestry and Fire Protection (2000), the project study area is not in a hazard area for wildland fires. Chapter 4.12, Public Services, address the proposed project’s increased need for fire

protection services and project design features proposed to reduce the risk of fire. Because the proposed projects are not located in proximity to a wildland fire hazard area, **no impact** is identified.

Mitigation Measure(s)

No mitigation measures are required.

4.8.3 Residual Impacts

With implementation of applicable mitigation measures, impacts related to the transportation of hazardous materials, abandoned wells, and impacts associated with height exceedance of the transmission towers would be reduced to levels **less than significant**. Further, during decommissioning, the applicant or its successor in interest would be responsible for the removal, recycling, and/or disposal of all solar arrays, inverters, transformers and other structures on the site. The applicant anticipates using the best available recycling measures at the time of decommissioning. Applicable regulations and mitigation measures identified for construction and operations would ensure restoration of project sites to agricultural uses during the decommissioning process. Based on these circumstances, the proposed projects would not result in residual significant and unmitigable impacts related to hazards and hazardous materials.