5.12 Soils

This section addresses soil-related issues associated with the Ridgecrest Solar Power Project (RSPP or Project). It discusses applicable laws, ordinances, regulations, and standards (LORS), required permits, and potential soils-related hazards and impacts associated with the Project, and identifies proposed mitigation measures. Appendix B contains the data and detailed analyses used to evaluate soils on the Project site.

The soils discussion presented in the following pages is intended to support compliance by the California Energy Commission (CEC) with the requirements of the California Environmental Quality Act (CEQA), and by the Bureau of Land Management (BLM) with the requirements of the National Environmental Policy Act (NEPA). The two agencies are conducting a joint review of the Project and a combined CEQA/NEPA document will be prepared.

Summary

The Project's impacts on soils resources would be less than significant. Because the Project will not be located on farmland, and agricultural protection legislation (e.g., the federal Farmland Protection Policy Act and the Williamson Act) is not applicable. Limited soils data is available for the Project site; no soils map exists for the majority of the Project and no relevant information is currently available for these areas from the Natural Resources Conservation Services (NRCS). Therefore, the Applicants have commissioned a field reconnaissance soil survey, and water and wind erosion modeling of the Project site. This data is provided as Attachment C of the Preliminary Geotechnical Investigation Report.

During construction, the Project footprint will be graded and the water pipeline route will be disturbed. With the implementation of best management practices (BMPs), such as the use of straw bales and silt fences, and limiting exposed areas, the impacts of soil erosion during construction should be less than significant. There will be no fill disposal or fill procurement sites. As part of the BMPs, a Stormwater Pollution Prevention Plan (SWPPP) (i.e., a Drainage Erosion and Sedimentation Control Plan [DESCP]) has been developed and is provided in Appendix L. A Phase I Environmental Site Assessment (Appendix I) of the Project site concluded that contaminated soils that could be disturbed by Project construction are unlikely to be present.

5.12.1 LORS Compliance

Federal, State, and local LORS that apply to soils affected by the Project are summarized in Table 5.12-1 and discussed in the text following the table. Non-applicable Federal and State LORS are also discussed, and justification for eliminating these LORS from further evaluation is provided.

Table 5.12-1 Summary of Applicable Soils LORS

LORS	Applicability	Where Discussed in AFC
Federal:		
United States Department of Agriculture (USDA) Engineering Standards, NRCS (1983), National Engineering Handbook, Sections 2 and 3	Set forth standards for soil conservation.	Section 5.12.1.1
Clean Water Act (CWA): 33 United States Code (USC) Section 12571et seq.	Regulates both direct and indirect discharges, including stormwater discharges from construction and industrial activities. Section 402 of the CWA regulates wastewater and stormwater discharges through the National Pollutant Discharge Elimination System (NPDES). Activities resulting in the dredging or filling of jurisdictional waters of the U.S., which can include drainages and ephemeral washes, are regulated under CWA Section 404.	Section 5.12.1.1
State:		
California Porter-Cologne Water Quality Act: California Water Code Section 13000 et seq.	An NPDES California General Activities Construction Permit is necessary if an area greater than one acre will be disturbed, which requires development and implementation of a SWPPP.	Section 5.12.1.2
California Storm Water Permitting Program: California Construction Storm Water Program, California Industrial Storm Water Program: State Water Resource Control Board (SWRCB) WQO 99-08	Construction activities that disturb one acre or more must be covered under California's General Construction Permit, which requires the development and implementation of a construction phase SWPPP. Industrial activities with the potential to impact stormwater discharges also need an NPDES permit, which requires an operation phase SWPPP	Section 5.12.1.2
SWRCB Resolution 77-1	Resolution encourages and promotes recycled water use for non-potable purposes.	Section 5.12.1.2
Local:		
Kern County Grading Code: Ordinance G-6914 Section 9 (part), 2002	Kern County requires a grading permit for earth moving activities exceeding 50 cubic yards.	Section 5.12.1.3
Kern County Floodplain Management Ordinance: Ordinance G-6914 Section14 (part), 2002	Kern County requires a development permit prior to any construction or other development within any area of special flood hazards, areas of flood-related erosion hazards, or areas of mudslide (i.e., mudflow).	Section 5.12.1.3

5.12.1.1 Federal LORS

Clean Water Act, 33 USC Section 1251 et seq.

The Federal Water Pollution Control Act of 1972, commonly referred to as the CWA following amendment in 1977, establishes requirements for discharges of stormwater or waste water from any point source that would affect the beneficial uses of waters of the United States. The SWRCB adopted statewide NPDES

general permits that apply to stormwater discharges associated with construction, industrial, and municipal activities. The RWQCB is the administering agency for the NPDES permit program. The Project will comply with the CWA through the preparation and implementation of a construction phase SWPPP and an operation phase SWPPP, as well as by preparation of the CEC-required DESCP, which is comparable to a SWPPP.

USDA Engineering Standards

The USDA NRCS, *National Engineering Handbook*, 1983, Sections 2 and 3 provide standards for soil conservation during planning, design, and construction activities. The Project would need to conform to these standards during grading and construction to limit soil erosion.

The Farmland Protection Policy Act Sections 1539 to 1549

The Farmland Protection Policy Act (FPPA) of 1981 was enacted to identify and protect the nation's farmlands. The purpose of the act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. The act creates an arrangement whereby private landowners contract with counties and cities to voluntarily restrict land to agricultural and open-space uses.

The FPPA is not applicable to the Project because the Project is not located on farmlands. The Project site is currently vacant, undeveloped desert land. The Applicant proposes to lease these Federal lands from the BLM to develop the Project.

5.12.1.2 State LORS

The Williamson Act

The Williamson Act was passed by the California Legislature in 1965 to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. The act creates an arrangement whereby private landowners contract with counties and cities to voluntarily restrict land to agricultural and open-space uses. The Williamson Act is not applicable because the Project is not located on agricultural lands, including lands that are protected under the act.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the SWRCB and the nine Regional Water Quality Control Boards (RWQCBs) to adopt water quality criteria to protect State waters. Those criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Water quality criteria for the Project area are contained in the Water Quality Control Plan for the Colorado Desert Basin Region, which was adopted in 2006 and is in the process of being amended. This plan sets numerical and/or narrative water quality standards controlling the discharge of wastes to the State's waters and land.

California Storm Water Permitting Program: California Construction Storm Water Program, California Industrial Storm Water Program, SWRCB WQO 99-08

A disturbance of greater than one acre during construction requires a California General Permit for Storm Water Discharges Associated with Construction Activity and thus the Project will require an NPDES Permit-California General Construction Activity Storm Water Permit prior to discharge of storm water (also see Section 5.17, Water Resources). A key feature of the requirements under this permit is the management of erosion and soil movement. Industrial facilities in California with the potential to impact stormwater discharges during operations, such as the Project, are required to obtain an NPDES Permit-Industrial Storm Water General Permit (SWRCB Order 97-03 DWQ) to ensure proper management and reduction of potential pollutants in runoff. The Project also will prepare a CEC-mandated DESCP which covers the same topics as a SWPPP (See preliminary construction SWPPP/DESCP in Appendix L.)

5.12.1.3 Local LORS

Kern County Grading Code, (Ord. G-6914 Section 9 (part), 2002)

The Project is subject to the Kern County's Building Inspection Division requirements for building, grading, and flood development permits. The flood development permit is for development in areas with in special flood hazards.

Kern County Floodplain Management Ordinance

If a watercourse is to be altered or relocated, adjacent communities and the California Department of Water Resources must be notified prior to such alteration or relocation of a watercourse, and evidence of such notification must be submitted to the Federal Insurance Administration and Federal Emergency Management Agency. The ordinance also requires that the flood carrying capacity of the altered or relocated portion of said watercourse be maintained.

5.12.1.4 Involved Agencies

The agency contacts for grading, building, NPDES, and floodplain development permits are identified in Table 5.12-2.

Table 5.12-2 Agencies and Agency Contacts

Contact	Phone/Email	Permit/Issue
Mike Plaziak, Senior Water Resources Control Engineer Lanhontan RWQCB 14440 Civic Drive, Suite 200 Victorville, CA 92392	(760) 241-6583 mplaziak@waterboards.ca.gov	NPDES permitting governing storm water discharges during construction and operation
Charles Lackey Kern County Engineering and Survey Services Department Public Services Building 2700 M Street Bakersfield, CA 93301	(661) 862-8650 ess@co.kern.ca.us	Building permits, Grading Permit for earthmoving activities exceeding 50 cubic yards, and Floodplain Development Permits for construction in a special flood hazard area

5.12.1.5 Required Permits and Permit Schedule

Following is a listing of soil-related permits that will be required by the Project.

Table 5.12-3 Permits Required and Permit Schedule

Permit/Approval	Schedule
California General Permit for Storm Water Discharge Associated with Construction Activities (NPDES Permit)	A Notice of Intent (NOI) application will be submitted 30 days prior to the start of construction.
California General Permit for Storm Water Discharge Associated with Industrial Activities (NPDES Permit)	An NOI application will be submitted 30 days prior to the start of operations.
Kern County Building Permit	Building permit applications will be submitted six weeks prior to the start of construction.
Kern County Grading Permit	A grading plan and permit application will be submitted six weeks prior to the start of construction.
Kern County Flood Plain Development Permit	Flood plain development permit application will be six weeks prior to the start of construction.

5.12.2 Affected Environment

This subsection discusses baseline soil and agricultural conditions at the Project site. Physical soil properties and the potential for contaminated soils are discussed.

5.12.2.1 Regional Setting

The Project site is located in the Indian Wells Valley, in Kern County, California. The Indian Wells Valley is located in the southern end of the Basin and Range Province east of the Sierra Nevada, south of the Caso range, north of the El Paso Mountains, and west of the Argus Range. Indian Wells Valley is also situated between the Sierra Nevada Fault Zone to the west and the El Paso and Garlock faults to the south. The Valley is characterized by a broad alluvial basin of Cenozoic-age sedimentary and volcanic material overlying older plutonic and metamorphic rocks. Quaternary lacustrine deposits are also found in the region as a result of playas in the northeastern portion of the valley. Indian Wells Valley is underlain with alluvial deposits up to 2,000 feet thick.

The Project is located in an undeveloped area and no agricultural activities are ongoing at the site. The Project site has no history of agricultural use, nor has it been mapped for agricultural purposes or had applied any special agricultural land use designations under the Farmland Mapping Act or the Williamson Act. Thus, the Farmland Mapping Act and Williamson Act do not apply to the Project, and are not discussed further.

The Project site is located in the Mojave Desert which is classified as a “high desert”. It is a transition between the “hot” Sonoran Desert to the south and the “cold” Great Basin Desert to the north. Characteristic of a desert climate, the Mojave Desert has extreme daily temperature changes, low annual precipitation, strong seasonal winds, and mostly clear skies. The average annual precipitation is less than five inches with over 77 percent of the precipitation occurring between November and March. There is, however, a summer thunderstorm season from July to September with violent heavy precipitation that occasionally produces flash flooding. May and June are usually the driest months.

5.12.2.2 Soils at the Project Site

The ground surface in the region of the Project generally slopes gently downward to the northwest at a gradient of approximately 0.2 percent (see Section 5.5.2.1). Ground surface elevations at the Project site range from approximately 2,820 feet above mean sea level (msl) in the southeast to 2,580 feet above msl in the northwest. A steeper grade of eight percent is present along the eastern side of the Project at the rock outcrops in Section 25, T27S R39E. Because of the high temperatures, low precipitation, and permeable soils, local drainage is intermittent and occurs as dry washes. In areas where the topography is flat, soils range in texture from very sandy to sandy loams and loamy sands. There is an absence of adjacent uplands to introduce surface runoff; discrete channels have not formed. Course textured soils exhibit high infiltration rates, indicating that most precipitation infiltrates immediately into the ground.

Soil survey maps are not available from the NRCS Soil Survey website so the Applicant commissioned a reconnaissance soil survey for the Project. Wasco sandy loam is considered to be representative of the soils at the Project site. It is a component of the Wasco-Rosamond-Cajon Association that was mapped in the majority (95 percent) of the site. Only five percent of the site is underlain by the Trigger-Sparkhule-Rock Outcrop Association (Figure 5.12-1). The Wasco-Rosamond-Cajon Association is characterized by soils with high sand percentage (greater than 70 percent) and is highly susceptibility to wind erosion. Detailed soil descriptions were developed from the borings, test pits, and site reconnaissance conducted during the preliminary geotechnical investigation. Soil characteristics including depth, texture, drainage, permeability, and erosion hazard of individual soil mapping units are included in Table 5.12-4. Land capability classification is an indicator of the soils primary limitations for revegetation. Soil types on the plant site include VIIs and VIIc Capability Subclasses, which means the soils have very severe limitations that make them unsuitable for cultivation.

Table 5.12-4 Soil Mapping Unit Descriptions and Characteristics

Map Unit	Description
Wasco	Wasco Series - Sandy Loam - Formed in mixed alluvium derived mainly from igneous and/or sedimentary rock sources - Well drained - Slopes range from zero to five percent - Negligible or very low runoff - Moderately rapid permeability - Slight hazard of wind erosion - Capability Subclass VIIs and/or VIIc - Taxonomic Class: Coarse-loamy, mixed, superactive, nonacid, thermic Typic Torriorthents
Rosamond	Rosamond Series – Fine Sandy Loam - Formed in material weathered mainly from granitic alluvium - Well drained - Slopes range from zero to two percent - Medium runoff - Moderate to moderately slow permeability - Moderate hazard of wind and water erosion - Capability Subclass VIIe - Taxonomic Class: Fine-loamy, mixed, superactive, calcareous, thermic Typic Torrifluvents
Cajon	Cajon Series - Sand - Formed in sandy alluvium from dominantly granitic rocks - Somewhat excessively drained - Slopes range from zero to 15 percent - Negligible to very low runoff - Rapid permeability; sandy loam surface textures have moderately rapid over rapid permeability - Slight hazard of wind erosion - High hazard of water erosion - Capability Subclass VIIIs and/or VIIe - Taxonomic Class: Mixed, thermic Typic Torripsamments
Trigger	Trigger Series - Gravelly Sandy Loam - Formed in material weathered from hard sedimentary rocks - Well drained - Slopes range from five to 50 percent - Medium to rapid runoff - Moderately rapid permeability - Taxonomic Class: Loamy, mixed, superactive, calcareous, thermic Lithic Torriorthents
Sparkhule	Sparkhule Series – Gravelly Sandy Loam - Formed in residuum from volcanic or granitic rocks - Well drained - Soils are on rock pediments and hill with slopes ranging from five to 50 percent - High to very high runoff - Moderately slow permeability - Taxonomic Class: Loamy, mixed, superactive, thermic Lithic Haplocalcids
U.S. Department of Agriculture's Soil Conservation Service Soil Survey of Kern County, California, Southeastern Part (1981) U.S. Department of Agriculture's Soil Conservation Service Soil Survey of Kern County, California, Northwestern Part (1988)	

Site soils were described during a reconnaissance-level geotechnical assessment conducted for the site. General observations indicated that soil textures at the site ranged from coarse sands to sandy clay loams, but were predominantly sandy loams. This was confirmed by the laboratory textural analysis conducted for soil samples collected at the site. The soils were formed in alluvial deposits from the surrounding mountains. The vegetation at the site is dominated by predominantly creosote bush, with other low brush, cacti, annual forbs, and some introduced grasses in places. The ground surface at the site ranged from few small stones to many and fine gravels.

Soil profiles were observed at four test pits (TP-1, 2, 3, 4). Profiles were observed to a maximum depth of 48 inches. Soil colors ranged from brown to yellowish and reddish brown. Profiles were typically sandy loams over courser sands and were characterized by smaller stones and gravels at the surface with increasingly larger stones and cobbles at greater depth. Observed profiles typically exhibited nonefferescence in the top layers with increasing effervescence at increasing depth indicating the presence of carbonates. The six laboratory textural analyses measured sand contents from 54 percent to 79 percent, silt content from 11 percent to 20 percent, and clay content from 10 percent to 35 percent. The average was 68 percent sand, 15 percent silt, and 17 percent clay; and characterized as a sandy loam. These observations are consistent with the published descriptions for the Wasco-Rosamond-Cajon Association mapped across 95 percent of the Project site. The southwest corner of the site is expected to have steeper, gravelly sandy loams of the Trigger-Sparkhule-Rock outcrop Association; however as no work is planned at this location, it was not sampled during the preliminary geotechnical investigation. The Field Reconnaissance Soil Survey is included as Attachment C of the Preliminary Geotechnical Investigation Report provided in Appendix B.

5.12.2.3 Hazards Related to Soil Conditions

Please see Section 5.5, Geologic Hazards, for discussions concerning slope stability, subsidence, collapsible soil conditions, and expansive soils. Based on the Phase I Environmental Site Assessment (Phase I ESA) conducted for the site, contaminated soils that could be disturbed by Project construction are not present at the Project site or at properties adjacent to the site (see additional discussion in Section 5.16, Waste Management and the Phase I ESA provided in Appendix I).

5.12.3 Environmental Impacts

Environmental impacts associated with the construction and operations are discussed in the following sections. Significance criteria were developed based on California CEQA Guidelines and evaluated using professional judgment. Impacts would be considered significant if:

- Substantially increased wind or water-induced soil erosion occurred as result of Project construction or operation,
- Substantially increased sedimentation occurred in areas adjacent to construction areas,
- Prime Farmlands, Farmlands of Statewide Importance, or Unique Farmlands were lost, or
- Construction activities were to occur in areas of high erosion susceptibility and the disturbed areas were left exposed and not properly stabilized.

5.12.3.1 Construction

Grading of the Project site will result in a less than one percent slope downward from the west to the east of the site. Earthwork associated with the Project will include excavation for foundations and underground systems, and the total earth movement that will occur is approximately 7,500,000 cubic yards.

The vast majority of the Project grading and excavation will occur on the Project site with only minor excavation needed for installation of water pipeline. Known soil types that will be affected are listed in Table 5.12-4. The runoff potential of these soils is negligible to very high, the water erosion hazard is slight to moderate, and the wind erosion hazard is moderate to high.

During construction, the Project site area and offsite linear facilities will be disturbed. At that time, the surface of the disturbed areas will be devoid of vegetation and there will be the highest potential for erosion, as well as associated effects including soil loss and increased sediment yields downstream from disturbed areas. With the implementation of BMPs contained in the SWPPP and DESCP, such as straw bales, silt fences, and limiting exposed areas, the impacts of soil erosion during construction should be less than significant. Site grading will be balanced on site; there will be no import or export of fill material.

Water Erosion

The runoff designations for the soils affected during site grading are negligible to moderate for the Wasco-Rosamond-Cajon Association and moderate to very high for the Trigger-Sparkhule-Rock Outcrop Association. Permeability in the Wasco-Rosamond-Cajon Association is moderately slow to moderately rapid. Detailed infiltration test results are presented the Preliminary Geotechnical Investigation Report in Appendix B of the AFC. A more detailed discussion of surface water conditions at the Project site is included in Section 5.17, Water Resources.

The potential for soil loss by water erosion (sheet and rill erosion) was estimated using the Universal Soil Loss Equation for pre-development and during construction conditions. Soil data has been collected and surveys have been conducted to estimate the soil loss at the Project site. Soil loss estimates due to water erosion for the undisturbed site conditions are 0.48 tons per acre per year and for disturbed site conditions are 0.8 tons per acre per year.

Wind Erosion

The potential for soil loss by wind erosion was estimated using the Wind Erosion Prediction System for pre-development (undisturbed) and during construction conditions. The soils on the Project plant site have a moderate to high hazard for wind erosion. The results of the geotechnical investigation and reconnaissance soil survey provided a detailed determination of wind erosion susceptibility (Appendix B). Under current conditions, the soil loss is estimated to be about 135 tons per acre per year for undisturbed conditions. As described above, construction activities will increase the potential for soil loss, and the estimate of soil loss during this period is about 140 tons per acre per year for disturbed conditions without implementation of control measures and BMPs as described in the SWPPP and DESCP.

Best Management Practices

During construction, the Project site and areas along the water pipeline route will be disturbed. At that time, the surface of the disturbed areas will be devoid of vegetation and there will be the highest potential for erosion, as well as associated effects including soil loss and increased sediment yields downstream from disturbed areas. As outlined in the preliminary construction phase SWPPP/DESCP (see Appendix L), BMPs, as well as limiting exposed areas, will minimize the impacts of soil erosion during construction to less than significant.

The implementation of BMPs during construction will limit the potential for significant soil loss from water and wind erosion. BMPs will include the following:

- Local soil berms and a detention area will be constructed to contain stormwater runoff.
- During site grading, clearing and grubbing will be confined to only those areas needed for facility construction as indicated in the conceptual grading plan (see Appendix L).
- Temporary erosion controls, including crushed rock, silt fences and fiber rolls, will be used as needed to minimize erosion in active grading areas. Soil stockpiles will be covered prior to forecasted storm events and during windy conditions. Fiber rolls or gravel bags will be placed around the perimeter of the stockpiles to further minimize the potential for runoff.

- Water will be used to control dust and will be applied at a rate so as to minimize runoff. Systematic watering of active grading areas during construction is expected to significantly reduce wind-borne dust. Additional BMPs to minimize soil loss due to wind erosion are discussed in Section 5.2, Air Quality.

If erosion is observed, BMPs will be applied immediately. In the event that the BMPs implemented fail, actions will be taken immediately to repair the erosion control measure as soon as possible. Temporary erosion control measures will be implemented as needed to control erosion. Temporary sediment control materials will be available on site throughout the life of the Project to respond as needed to unforeseen rain or emergencies.

5.12.3.2 Operation

With implementation of the BMPs, and associated monitoring activities included in the operation phase SWPPP, the DESCP, and the Operation Dust Control Plan, soil erosion would be minor during Project operation. As discussed in Section 5.2, Air Quality, by its nature a solar thermal project must keep dust to a minimum, as a film on the mirrors of the solar array will reduce their efficiency for power production. Dust control will be achieved by a combination of water from mirror washing and compaction of the driving surface over time. Therefore, operational controls designed to control dust will reduce the overall soil erosion in the area.

Post construction actions will include dust control through periodic watering, placement of gravel berms and detention structures to control sediment loss and management of stormwater runoff. The power block area will be graded to direct runoff and divert stormwater to surface swales. Diversion ditches and the detention area will be designed to accommodate flow from a 100-year storm event. Management of surface water for the Project is discussed in detail in 5.17, Water Resources. Roads and paved areas will be kept free of dust, dirt and visible soil materials. Sufficient materials will be kept on site to implement temporary control measures as needed during the operational life of the Project. Impacts of Project operation on the proposed desert channels that will be rerouted within the Project footprint are discussed in Section 5.3, Biological Resources.

Section 5.2, Air Quality, also discusses the effects of power plant emissions on surrounding soil and vegetation systems. Based on evaluation of nitrogen oxides, sulfur oxides, carbon monoxide and particulate matter emission factor less than 10, emissions from the boilers and heat transfer fluid heaters will not have a significant adverse impact on vegetation and soils surrounding the Project area.

5.12.3.3 Cumulative Impacts

Cumulative projects in the area would be required to comply with water quality and air quality LORS as part of their separate project review processes. The applicable water quality and air quality management and mitigation requirements would control soil and wind erosion associated with the individual projects, as is the case with the Project. Also, because the Project would have no impacts on agricultural resources, it would not contribute to possible cumulative impacts on agricultural soils of the area. Project soils impacts would not be cumulatively considerable.

5.12.4 Mitigation Measures

Implementation of the mitigation measure presented below will minimize soil loss (and thus also protect water quality) from Project construction and operations phase activities.

SOIL-1 Erosion control will be developed and implemented to ensure minimum soil loss and to maintain water quality. Temporary and long-term erosion control measures will be constructed and maintained as necessary during and following construction until long-term stabilization has been established for the life of the Project.

Such erosion and sedimentation control measures may include but are not limited to: minimizing disturbance; wetting the roads in active construction areas and laydown areas; controlling speed on unpaved surfaces; placing gravel in entrance ways; use of straw bales, silt fences, and earthen berms to control runoff.

SOIL-2 Conduct Project construction grading in compliance with industry best practices and Kern County grading permit requirements. A grading plan and permit application will be submitted six weeks prior to the start of construction.

SOIL-3 Conduct Project construction activities and operation in accordance with the construction and operation phase SWPPPs and the DESCP. These documents both will include BMPs to reduce erosion and sedimentation (e.g., use of runoff control measures such as hay bales and silt fences, and regular inspections of drainage control structures).

5.12.5 References

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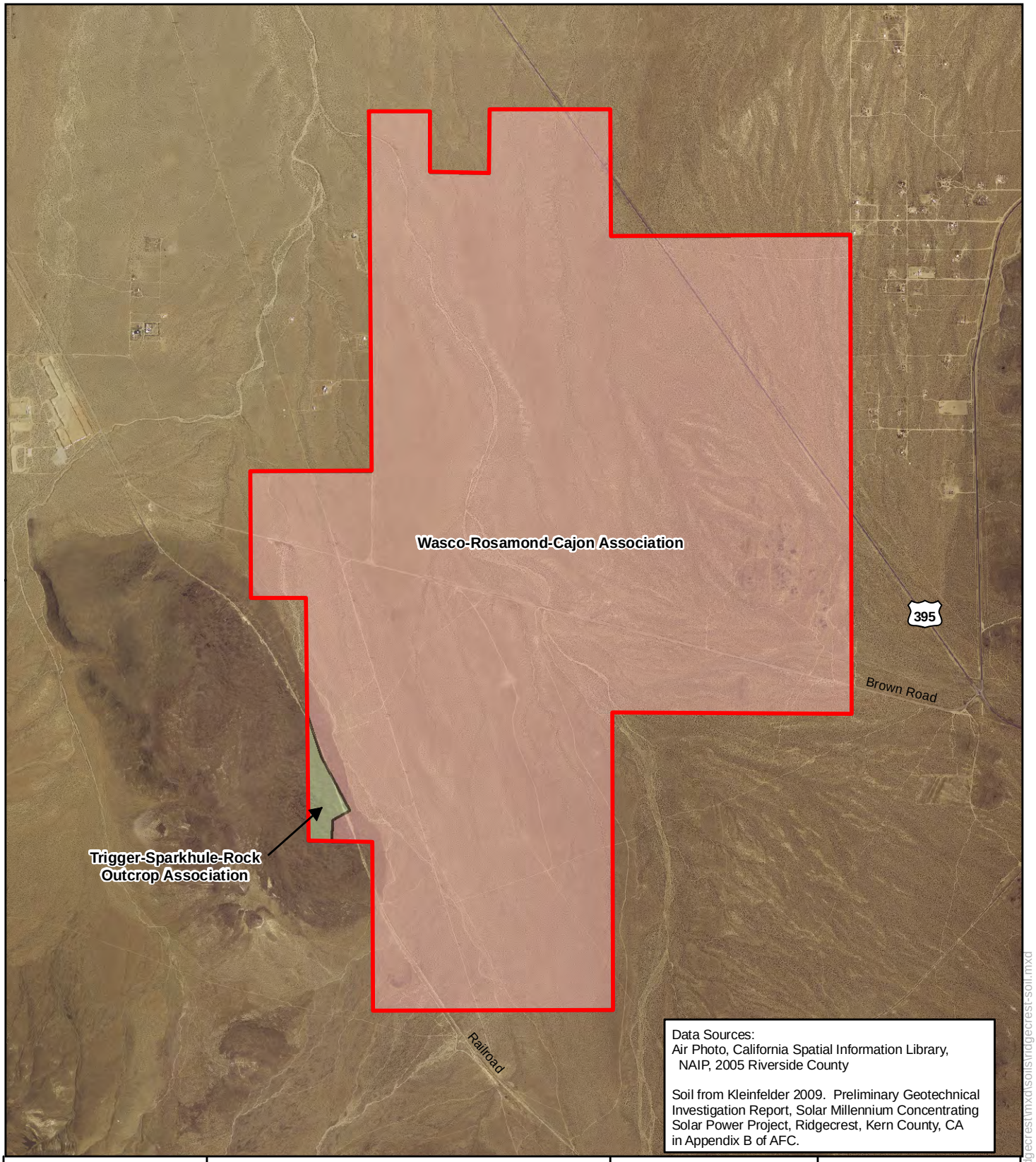

Map Location

Legend

Project Right-of-Way

Soil Types

Wasco-Rosamond-Cajon Association

Trigger-Sparkhule-Rock Outcrop Association

0 3,000 6,000 Feet

N W E S

Ridgecrest Solar Power Plant

Figure 5.12-1
Site Soil Map

Solar Millennium

AECOM

Project: 12944-003
Date: September 2009

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