

5.13 WASTE MANAGEMENT

This section addresses waste management issues related to the Genesis Solar Energy Project (the Project). In addition to describing Project waste streams and the impacts of their management/disposal, this section also describes existing site environmental conditions based on a Phase I Environmental Site Assessment (ESA).

5.13.1 Affected Environment

The Project involves the construction and operation of a 250 MW facility based on concentrating solar thermal (CST) parabolic trough technology on land managed by the Bureau of Land Management (BLM). The actual facility is located on approximately 1,800 acres. The surrounding area includes the McCoy Mountains (East), the Palen Mountains (North), Interstate 10 (I-10) (South), and Blythe Airport approximately 15 miles to the east. Waste management-related baseline conditions of the site are described in the Phase I ESA, summarized in Section 5.13.1.3 and included in Appendix F.

Facility construction and operations will generate wastes that require proper management and in some cases off-site disposal. There are seven permitted Class III landfills located in Riverside County within approximately 145 miles of the Project site. There are two major permitted Class I hazardous waste landfills located in California. The locations and the permitted, operating, and remaining capacities of the hazardous and non-hazardous waste landfills are summarized below in Table 5.13-1.

Table 5.13-1. Solid and Hazardous Waste Disposal Facilities

Waste Disposal Site	Title 23 Class	Maximum Permitted Capacity	Current Operating Capacity ¹	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Badlands Sanitary Landfill 31125 Ironwood Avenue Moreno Valley, CA 92555	Class III	30,386,332 cubic yards	4,000 tons/day	21,866,092 cubic yards	2016	No
Lamb Canyon Sanitary Landfill 16411 State Hwy 79 Beaumont, CA 92223	Class III	34,292,000 cubic yards	3,000 tons/day	20,908,171 cubic yards	2023	No
Oasis Sanitary Landfill 84-505 84th Avenue Oasis, CA 92274	Class III	870,000 cubic yards	400 tons/day	75,727 cubic yards	2186	No
Desert Center Landfill 17991 Kaiser Road Desert Center, CA 92239	Class III	117,032 cubic yards	60 tons/day	23,246 cubic yards	2011	No
Blythe Sanitary Landfill 1000 Midland Road Blythe, CA 92225	Class III	4,633,000 cubic yards	400 tons/day	2,289,139 cubic yards	2134	No
Mecca Landfill II Box Canyon Road & Garfield Street Mecca, CA 92254	Class III	372,480 cubic yards	370 tons/day	34,786 cubic yards	2007	No

Table 5.13-1. Solid and Hazardous Waste Disposal Facilities

Waste Disposal Site	Title 23 Class	Maximum Permitted Capacity	Current Operating Capacity¹	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
El Sobrante Landfill 10910 Dawson Canyon Road Corona, CA 91719	Class III	184,930,000 cubic yards	10,000 tons/day	118,573,540 cubic yards	2030	No
Chemical Waste Management Kettleman Hills Landfill 36251 Old Skyline Road Kettleman City, CA	Class I	10,700,000 cubic yards	8,000 tons/day	6,000,000 cubic yards	2037-2038	No
Clean Harbors Buttonwillow Landfill 2500 West Lokern Road Buttonwillow, CA	Class I	14,293,760 cubic yards	10,482 tons/day	9,500,000 cubic yards	2040	No

Source: California Integrated Waste Management Board (CIWMB), 2009. Solid Waste Information System (SWIS): Facility/Site Search. Internet Website. <<http://www.ciwmb.ca.gov/SWIS/Search.aspx>>.

¹ Maximum Permitted Throughput

5.13.1.1 Non-Hazardous Waste Disposal Sites (Class III)

Non-hazardous solid waste generated at the Project site during both construction and operation phases will be taken off-site for recycling or disposal to a permitted Class III landfill. As noted in Section 5.13.1, there are seven Class III landfills located in Riverside County within approximately 145 miles of the Project site: the Badlands, Lamb Canyon, Oasis, Desert Center, Blythe, Mecca, and El Sobrante landfills. The maximum landfill capacity, daily operating capacity, and remaining capacity of each landfill are listed in Table 5.13-1.

5.13.1.2 Hazardous Waste Disposal Sites

Hazardous waste generated at the facility will be taken off-site for recycling or disposal by a licensed and permitted hazardous waste transporter to a permitted treatment, storage, and disposal facility (TSDF) (*i.e.*, Class I landfill).

There are two major operating hazardous waste (Class I) landfills in California:

- Chemical Waste Management Landfill located in Kettleman Hills (Kings County) on State Highway 41 is approximately two miles west of Interstate 5. The Class I portion of this landfill has approximately 6.0 million cubic yards remaining capacity of a total permitted capacity of 10.7 million cubic yards. The remaining life of this landfill is approximately 30 years. The EPA Identification Number for this facility is CAD000646117.
- Clean Harbors Buttonwillow Landfill (Kern County) located on West Lokern Road between State Highways 33 and 58 is a TSDF that accepts Class I solid wastes and Class II solid and liquid wastes. The permitted capacity of this landfill is 14.3 million cubic yards with remaining capacity of 9.5 million cubic yards. The EPA Identification Number for this facility is CAD980675276.

The permitted, operating, and remaining capacities of these landfills are described in Table 5.13-1. It is expected that hazardous wastes generated during the construction and operational phases of the Project will be disposed at the Buttonwillow Landfill.

For select liquid wastes, DeMenno/Kerdoon, located in Compton at 2000 North Alameda Street, is a permitted Part B TSDF. The facility recycles used oil, wastewater, and antifreeze. The EPA Identification Number for this facility is CAT080013352.

5.13.1.3 Phase I Environmental Site Assessment

A Phase I ESA was prepared by qualified professional staff in July 2009 in order to identify, to the extent feasible, recognized environmental conditions (RECs) relevant to development of the Project. The Phase I ESA was performed in conformance with the general scope and limitations of American Society for Testing and Materials (ASTM) Standard Practice E 1527-05. A copy of the Phase I ESA is provided in Appendix F (Tetra Tech, 2009).

Site History

Historical research indicates no evidence of any commercial, industrial, agricultural land use, or any structures on the Project site. However, the Project area was within General Patton's World War II Desert Training Center, California-Arizona Maneuver Area region (1942 to 1944).

Incidents and Notifications

The subject property was not listed in readily available Federal, State, regional, and local database listings searched by Environmental First Search (EFS). None of the surrounding properties were identified by EFS. No additional off-site sources of concern were identified by EFS, or during a visit to the site and vicinity during Phase I ESA preparation.

Summary of Findings and Conclusions

Based on a site visit, the review of governmental environmental databases, files, and historical documents, and interviews conducted during the Phase I ESA, no RECs were identified on the property evaluated and within the Project boundaries. However, due to the potential for WWII training activities to have occurred at or near the Project area, Genesis Solar, LLC may engage in a survey for unexploded ordinances prior to construction. The Project site is entirely unoccupied, undeveloped, and uncultivated.

5.13.2 Environmental Impacts

The analysis of the Project's environmental impacts related to waste management is based on the following significance criteria:

- Off-site treatment or disposal of non-hazardous solid wastes must not significantly impact available landfill, recycling, or treatment program capacities.
- Off-site disposal of hazardous wastes must not significantly impact available Class I landfill capacity.
- The facility must comply with all applicable Laws, Ordinances, Regulations, and Standards (LORS) regarding management of non-hazardous and hazardous wastes.

Additionally, according to California Environmental Quality Act (CEQA) Guidelines, a project has a significant impact if it:

- Breaches standards relating to solid waste or litter control.
- Creates a potential public health hazard or involves materials which pose a hazard.
- Results in a need for new systems or substantial alterations to existing waste disposal facilities.

The following sections describe the types of waste that are expected to be generated during the construction and operation of the Project and how non-hazardous solid waste and hazardous wastes will be managed and disposed.

To ensure public health and safety and the environment are protected, a facility closure plan will be prepared prior to Project closure. The closure plan will ensure the management, recycling, and/or disposal of non-hazardous and hazardous wastes associated with facility closure activities are performed in accordance with applicable LORS. See Section 3.9 for additional information on facility closure.

5.13.2.1 Construction

Table 5.13-2 summarizes the anticipated waste streams generated during Project construction, along with appropriate management methods for treatment or disposal.

Hazardous Waste Disposal

Most of the hazardous waste generated during Project construction, such as unused or off-specification paint and primer, paint thinner, solvents, and vehicle and equipment maintenance-related materials, can be recycled. Empty containers (*i.e.*, drums and totes) will be returned to the vendor, if possible. The small quantities of hazardous waste that cannot be recycled are not expected to significantly impact the capacity of the Class I landfills located in California.

In the unlikely event that contaminated soil is encountered during excavation activities, the soil will be segregated, sampled, and tested to determine appropriate disposal/treatment options. If the soil is classified as hazardous, the Riverside County Department of Environmental Health will be notified and the soil will be hauled to a Class I landfill or other appropriate soil treatment and recycling facility, if required. The Riverside County Department of Environmental Health will also be notified if previously unknown wells, tanks, or other underground storage facilities are discovered during construction. Subsequent removal of such equipment, including potential remediation activities (if required), will be conducted in accordance with California Code of Regulations (CCR) Title 22 and the California Health and Safety Code.

Universal Waste Disposal

Information on universal wastes anticipated to be generated during Project construction is provided in Table 5.13-2. Universal wastes and unusable materials will be handled, stored, and managed per California Universal Waste requirements.

Table 5.13-2. Summary of Construction Waste Streams and Management Methods

Waste Stream and Classification ¹	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	On-site Treatment	Waste Management Method/Off-site Treatment
Construction waste - Hazardous	Empty hazardous material containers	1 cubic yard per week (cy/wk)	Intermittent	None. Accumulate on site for <90 days	Return to vendor or dispose at permitted hazardous waste disposal facility
Construction waste - Hazardous	Solvents, used oil, paint, oily rags	175 gallons	Every 90 days	None. Accumulate on site for <90 days	Recycle or use for energy recovery
Heat Exchanger cleaning waste - Hazardous	Chelant type solution	1,000 gallons	One time event during commissioning	None	Dispose to permitted hazardous waste disposal facility
Spent batteries - Universal Waste	Lead acid, alkaline type	20 in 2 years	Intermittent	None. Accumulate on site for <90 days	Recycle
Construction waste – Non-hazardous	Scrap wood, concrete, steel, glass, plastic, paper	40 cy/wk	Intermittent	None	Recycle wherever possible, otherwise dispose to Class III landfill
Sanitary waste – Non-hazardous	Portable Chemical Toilets - Sanitary Waste	200 gallons/day	Periodically pumped to tanker truck by licensed contractors	None	Ship to sanitary wastewater treatment plant
Office waste – Non-hazardous	Paper, aluminum, food	1 cy/wk	Intermittent	None	Recycle or dispose to Class III landfill

¹ Classification under Title 22, CCR § 66261.20 et seq.

Non-Hazardous Solid Waste Disposal

Solid waste generated from Project construction activities may include scrap lumber, plastic, metal, glass, excess concrete, and empty non-hazardous containers. Management and disposal of these wastes will be the responsibility of the construction contractor(s). Typical management practices for these materials include recycling when possible, proper storage of waste to prevent wind dispersion, and routine pick-up and disposal of wastes to approved local Class III landfills. Solid wastes from Project construction are not expected to significantly impact the capacity of the Class III landfills in Riverside County.

Wastewater generated at the construction site will include sanitary wastes, dust suppression drainage, and equipment wash water. Construction-related sanitary wastes, collected in portable self-contained chemical toilets, will be pumped periodically. Potentially contaminated equipment wash water will be contained at designated wash areas and transported to a wastewater treatment facility by a licensed hauler.

5.13.2.2 Operation

The operation of the Project is expected to generate sanitary wastewater, non-hazardous wastes, and small quantities of hazardous wastes. Operation of Project linear facilities (gas pipeline, transmission

line) will generate minimal quantities of waste. The types of waste and their estimated volumes are summarized in Table 5.13-3.

Table 5.13-3. Summary of Operation Waste Streams and Management Methods

Waste Stream and Classification ¹	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				On site	Off site
Used Hydraulic Fluid, Oils and Grease – Non-RCRA Hazardous	HTF system, turbine, and other hydraulic equipment	50,000 gallons/year	Intermittent	Accumulated for <90 days	Recycle
Effluent from oily water separation system – Non-RCRA Hazardous	Plant washdown area/oily water separation system	3,000 gallons/year	Intermittent	None	Recycle
Oily rags, oil absorbent, and oil filters – Non-RCRA Hazardous	Various	Five 55-gallon drums per month	Intermittent	Accumulated for <90 days	Sent off site for recovery or disposed at Class I landfill
Soil contaminated with Heat Transfer Fluid (HTF) (> 10,000 mg/kg) – estimated Non-RCRA Hazardous	Solar array equipment leaks	10 cubic yards per year (cy/yr)	Intermittent	Accumulate for <90 days	Sent off site for disposal at a Class I landfill
Soil contaminated with HTF (< 10,000 mg/kg) – estimated Non-Hazardous	Solar array	750 cy/yr	Intermittent	Bioremediation land treatment unit	Dispose to waste mgmt. facility
Spent batteries – Universal Waste	Rechargeable and household	<10/month	Continuous	Accumulate for <1 year	Recycle
Spent batteries – Hazardous	Lead acid	20 every 2 years	Intermittent	Accumulate for <90 days	Recycle
Spent fluorescent bulbs – Universal Waste	Facility lighting	< 50 per year	Intermittent	Accumulate for <1 year	Recycle
MMF residue – Non-Hazardous	Water Treatment System – Pre-Treatment	34 gallons per minute ²	Backwash of the MMF	Evaporation Ponds	None
MMF residue – Non-Hazardous	Water Treatment System – Post-Treatment	11 gallons per minute ²	Backwash of the MMF	Evaporation Ponds	None
2 nd Stage RO residue – Non-Hazardous	Water Treatment System – Post-Treatment	137 gallons per minute ³	Continuous when plant is operating	Evaporation Ponds	None
Sanitary wastewater – Non-Hazardous	Toilets, washrooms	2,500 gallons/day	Continuous	Septic leach field	None

Table 5.13-3. Summary of Operation Waste Streams and Management Methods

Waste Stream and Classification ¹	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				On site	Off site

¹ Classification under Title 22, CCR § 66261.20 et seq.

² Flow rate for MMF residue is based on the annual average; however, this rate may increase or decrease depending on the timeframe from the backwash.

³ Flow rate for RO Residue is based on the annual average; therefore, will be higher during summer peak months and lower during winter months

5.13.2.3 Hazardous Waste Disposal

Information on hazardous wastes anticipated to be generated during Project operation is provided in Table 5.13-3. A summary of that information is provided below:

- Used hydraulic fluids, oils, greases, oily filters and oily rags, and associated wastes: Used oils, greases, and oily effluent from the water separation systems will be accumulated and maintained on site in secure hazardous waste accumulation areas within secondary containment. These wastes will be recycled whenever possible. Used oil and recovered oil from the oil/water separator will be recycled by a licensed oil recycler. Oily rags and oil absorbent (used to contain small spills) will be generated as a normal part of maintenance activities. These wastes will be recycled or shipped off site for energy recovery or disposal in a Class I landfill. Soil contaminated with concentrations of HTF that are classified as hazardous waste will be shipped off site for disposal in a Class I landfill (refer to section *Non-Hazardous Waste: HTF-Contaminated Soil* for justification of hazardous limits).
- Cleaning solutions: Waste cleaning solutions, such as solvents and other chemical cleaning solutions will be generated during routine equipment maintenance and repair. These waste cleaning solutions will be collected and recycled by a licensed contractor on a regular basis.
- Spent batteries: Lead-acid batteries will be returned to the vendor. Other spent batteries will be accumulated on site in labeled containers and recycled at least annually per California Universal Waste requirements.

Hazardous wastes and unusable hazardous materials will be stored in a hazardous waste accumulation area. Hazardous waste areas will include secondary containment with a capacity to hold the volume of the largest container plus ten percent. Hazardous waste accumulation area regulations will be followed (*e.g.*, weekly inspections). Wastes will be transported for recycling or disposal in accordance with all Federal, State, and local hazardous waste generator requirements.

Hazardous wastes will be transported by a licensed hazardous waste hauler using a Uniform Hazardous Waste Manifest and disposed or recycled at an appropriately-permitted facility. Copies of manifests, reports, waste analysis, exception reports, land disposal restrictions, and other related documents will be maintained on-site as required.

Liquid Designated Waste

As discussed in Section 3.0, Facility Description and Location, the Project has a pre-treatment and post-treatment system for the cooling tower. Industrial wastewater from both the pre-treatment and post-treatment systems for each 125 megawatt (MW) power block will be piped to three 8-acre

evaporation ponds (total combined pond top area of 24 acres) for disposal. There are three primary and one occasional waste streams discharging into the evaporation ponds:

- Pre-cooling tower water treatment waste stream.
- Post-cooling tower water treatment waste stream.
- Post-cooling tower water treatment 2nd Stage RO waste stream.
- Occasionally, stormwater accumulated in the proposed Land Treatment Unit (LTU) that will be used to treat soil affected by spills of HTF.

On average, blowdown to the evaporation ponds will be approximately 90,000 gallons per day (182 gpm) for both units, increasing to 162,000 gallons per day (214 gpm) during peak summer conditions. The overall Project will have six 8-acre evaporation ponds as each 125 MW power block will have three 8-acre ponds. Each pond will have enough surface area so the evaporation rate exceeds the cooling tower blowdown rate at maximum design conditions and annual average conditions.

The average pond depth is eight feet and residual precipitated solids will be removed approximately every seven years to maintain a solids depth no greater than three feet for operational and safety purposes. The precipitated solids will be sampled and analyzed to meet the characterization requirements of the receiving disposal facility. The characteristics of the precipitated solids will determine the transportation and disposal methodology. It is anticipated the pond solids and other non-hazardous wastes would be classified as Class II non-hazardous industrial waste. Genesis Solar, LLC will test the pond solids using appropriate test methods in advance of removal from the evaporation ponds to confirm this determination. However, preliminary estimates show the material will be non-hazardous. Approximately 7,150 tons of evaporative residue will be accumulated yearly, which equates to approximately 50,000 tons of evaporative residue being removed during each cleanout and a total amount of 214,500 tons over 30 years.

Universal Waste Disposal

Information on universal wastes anticipated to be generated during Project operation is provided in Table 5.13-3. Universal wastes and unusable materials will be handled, stored, and managed per California Universal Waste requirements.

Non-Hazardous Waste: HTF-Contaminated Soil

Non-hazardous solid waste generated during operation of the power plant is likely to include soil contaminated with HTF from spills and leaks in the HTF system. Management of HTF-contaminated soil is based on the HTF concentrations in the soil. As discussed in Section 3.0, Facility Description and Location, classification of the HTF-impacted soils can only be undertaken once the Project is operational. Once a sufficient data set has been accumulated to allow characterization of the material as hazardous or non-hazardous based on HTF content and generator knowledge, the Department of Toxic Substance Control (DTSC) will be petitioned for a determination of waste classification for HTF-affected soils generated at the facility.

At the Kramer Junction Solar Energy Generating System (SEGS) facility, DTSC issued a letter dated April 4, 1995 stating soil contaminated with HTF “poses an insignificant hazard” and classifies the waste as non-hazardous for soils with a concentration of less than 10,000 milligrams per kilogram (mg/kg) HTF pursuant to CCR Title 22, Section 66260.200(f). While this information from Kramer Junction alone may not be sufficient to characterize the waste material generated at the Project, Genesis Solar, LLC anticipates future waste characterization at the Project will yield a similar result

and has designed the LTU accordingly as both sites will use the same parabolic trough solar technology and therefore will be using the same type of HTF.

Non-Hazardous Waste Disposal

Non-hazardous solid wastes generated during operation of the Project will include solid waste from routine maintenance (including used air filters, spent demineralizer resins, sand and filter media, cooling tower basin sludge, spent softener resins, and clarifier blow down sludge), and office and domestic wastes. Maintenance-derived wastes will be recycled to the extent practical. Those maintenance-derived wastes that cannot be recycled will be transported for disposal at a Class III landfill. Domestic wastes, including office paper, newsprint, aluminum cans, plastic, and glass containers and other non-hazardous solid waste material, will be recycled to the extent practical. The remaining solid wastes will be removed on a regular basis by a permitted waste hauler for disposal at a Class III landfill.

It is anticipated that disposal of non-hazardous solid waste from the Project will represent only a minimal increase (a small fraction of one percent) relative to the capacities of the local Class III landfills (see Table 5.13-2). Therefore, the quantities of non-hazardous solid waste from the Project will not adversely impact available landfill capacity and can be considered insignificant.

Sanitary waste generated at the Project will be sent to an on-site septic system and leach field; there will be no off-site liquid discharges from the Project.

5.13.3 Mitigation Measures

Although the Project will not result in significant impacts related to the management of non-hazardous and hazardous wastes, a number of mitigation measures will be implemented, as shown below.

- WM-1:** A detailed Construction Waste Management Plan for all wastes generated during Project construction will be prepared 60 days prior to the start of on-site activities. The plan will be comprehensive to ensure compliance is maintained with local, State, and Federal regulations. The plan will include:
- A description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications.
 - Management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to ensure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.
 - Spill control and management procedures will be included covering spill containment, collection, and treatment.
- WM-2:** In the unlikely event contaminated soil is encountered during excavation activities at either the site or linear facilities, as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the site will be inspected, soil segregated, sampled, and tested to determine appropriate disposal/treatment options. If the soil is classified as hazardous, the Riverside County Department of Environmental Health will be notified and the soil will be hauled to a Class I landfill or other appropriate soil treatment and recycling facility, if required.

WM-3: Prior to on-site construction activities, construction employees will receive waste training, specifically on the Construction Waste Management Plan, to ensure compliance with Federal, State, and local requirements emphasizing the protection of workers, the public, and the environment. As the Project transitions from construction to operations, facility personnel will receive waste training prior to generating, handling, storing, or shipping hazardous waste. Facility employees will be trained on the Operation Waste Management Plan, including waste minimization.

WM-4: A detailed Operation Waste Management Plan for all wastes generated during Project operations will be prepared 60 days prior to the start-up of the facility. The plan will be comprehensive to ensure compliance is maintained with local, State, and Federal regulations. The plan will include:

- A detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications.
- Management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to ensure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.
- Information and summary records of conversations with the local Certified Uniform Program Agency (CUPA) (Riverside County Department of Environmental Health) and DTSC regarding any waste management requirements necessary for Project activities. Copies of all required waste management permits, notices, and/or authorizations will be included in the plan and updated as necessary.
- A detailed description of how facility wastes will be managed, and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure.
- A detailed description of how facility wastes will be managed and disposed upon closure of the facility.

WM-5: Spill control and management procedures will be included in the detailed Hazardous Waste Management Plan to be developed for the Project. The purpose of the spill control and management procedures is to avoid accidental mixing of incompatible chemicals and spills during transfer of chemicals. The design of spill control and management procedures will include containment, collection, and treatment systems.

WM-6: A comprehensive reporting plan will be developed and implemented to ensure spills and releases of hazardous substances, hazardous materials, or hazardous waste are reported, cleaned-up, and remediated, as necessary, in accordance with all applicable Federal, State, and local requirements. The reporting plan will be incorporated within the Construction Waste Management Plan and Operation Waste Management Plan.

WM-7: The Project owner will obtain a hazardous waste generator identification number from the DTSC prior to generating any hazardous waste during construction and operation.

5.13.4 Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse impacts for waste.

5.13.5 Cumulative Impacts

The Class I and Class III landfills that serve the Project area have substantial remaining disposal capacities and Project waste generation volumes will be modest. Therefore, the Project's contribution to potential significant adverse cumulative impacts on waste disposal facilities would be less than significant.

5.13.6 Applicable Laws, Ordinances, Regulations, and Standards (LORS)

Table 5.13-4 and the following subsections summarize the waste management LORS applicable to the Project. The Project will comply with the applicable LORS during construction and operation.

Table 5.13-4. Summary of Applicable Waste Management LORS

LORS	Applicability	Where Discussed in AFC
Federal:		
Solid Wastes: Title 40, Code of Federal Regulations (CFR), Subchapter I	Establishes the criteria for characterizing hazardous waste, hazardous waste generator requirements, and management of oil and universal waste.	Section 5.13.6.1
Hazardous Materials: Title 49, CFR Subchapter C	Establishes standards for the transportation of hazardous wastes.	Section 5.13.6.1
Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act (RCRA) of 1976, et al) and subsequently amended in 1978, 1980 and 1984: Title 42, United States Code (U.S.C.), §§ 6901, et seq.	Provides the basic framework for Federal regulation of non-hazardous and hazardous waste.	Section 5.13.6.1
Comprehensive Environmental Response, Compensation and Liability Act: (Superfund) Title 42, U.S.C., §§ 9601, et seq.	Establishes mechanisms for the clean up of accidental spills or releases of pollutants into the environment.	Section 5.13.6.1
Clean Water Act of 1977 (including 1987 amendments) §§ 402, 33 U.S.C., §§ 1342, 40 CFR Subchapter D	Establishes requirements for discharges of wastewater and storm water along with spill prevention of petroleum products.	Section 5.13.6.1
State:		
Hazardous Waste Control Act of 1972, as amended. Title 22, California Health and Safety Code (HSC), Division 20, Chapter 6.5	Establishes the framework for managing hazardous waste in California.	Section 5.13.6.2
Environmental Health Standards for the Management of Hazardous Waste: Title 22, California Code of Regulations (CCR), Division 4.5	Establishes the requirements for disposal and management of hazardous waste in California.	Section 5.13.6.2

Table 5.13-4. Summary of Applicable Waste Management LORS

LORS	Applicability	Where Discussed in AFC
Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program): HSC, Chapter 6.11 §§ 25404 – 25404.9	Establishes the framework for six environmental and emergency response programs and includes the mechanism for implementing the CUPA program.	Section 5.13.6.2
Unified Hazardous Waste and Hazardous Materials Management Regulatory Program: Title 27, CCR, Division 1, Subdivision 4, Chapter 1, §§ 15100, et seq.	Establishes specific CUPA reporting requirements for businesses.	Section 5.13.6.2
California Integrated Waste Management Act of 1989: Public Resources Code, Division 30, §§ 40000, et seq.	Establishes mandates and standards for management of solid waste.	Section 5.13.6.2
California Integrated Waste Management Board: Title 14, CCR, Division 7	Establishes minimum standards for solid waste handling and disposal.	Section 5.13.6.2
California Code of Regulations, Title 23, Division 3, Chapter 9 and Chapter 15	Establishes requirements for waste discharge report and requirements specifying conditions for protection of water quality. Outlines classification and siting and construction criteria for waste management units and discharges of waste to land. Provides guidance for surface impoundments and Land Treatment Units, also stipulates operational and maintenance procedures to minimize mobility of waste materials.	Section 5.13.6.2
California Code of Regulations, Title 27, Division 2, Chapters 3 and 4	Provides guidance for surface impoundments and Land Treatment Units.	Section 5.13.6.2
Toxic Pits Cleanup Act of 1984, HSC, §§ 25208 et seq.	Regulates surface impoundments containing hazardous liquids or hazardous wastes containing hazardous free liquids.	Section 5.13.6.2
Hazardous Waste Source Reduction and Management Review Act of 1989 (also known as SB 14): HSC, Division 20, Chapter 6.5, Article 11.9, §§ 25244.12, et seq.	Establishes the State's hazardous waste source reduction activities.	Section 5.13.6.2
Hazardous Waste Source Reduction and Management Review: Title 22, CCR, §§ 67100.1 et seq.	Further clarification of the State's hazardous waste source reduction activities.	Section 5.13.6.2
Local:		
County of Riverside: Hazardous Waste: Storing, Treating, Recycling Ordinance Number 615	Establish requirements for the use, generation, storage, and disposal of hazardous materials and wastes within the County.	Sections 5.13.6.3 and 5.12.6.3

5.13.6.1 Federal Authorities and Administering Agencies

Federal waste management LORS are described below.

Solid Wastes, Title 40 CFR, Subchapter I

These regulations were established by the U.S. Environmental Protection Agency (EPA) to implement the provisions of the Solid Waste Disposal Act and RCRA (described above). Among other things, the regulations establish the criteria for classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and requirements for management of used oil and universal wastes.

- Part 246 addresses source separation for materials recovery guidelines.
- Part 257 addresses the criteria for classification of solid waste disposal facilities and practices.
- Part 258 addresses the criteria for municipal solid waste landfills.
- Parts 260 through 279 address management of hazardous wastes, used oil, and universal wastes (*i.e.*, batteries, mercury containing equipment, and lamps).

The EPA implements the regulations at the Federal level. However, California is an authorized state so the regulations are implemented by State agencies and authorized local agencies in lieu of the EPA.

Hazardous Materials Regulations, Title 49 CFR, Subchapter C

The U.S. Department of Transportation has established standards for transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping of hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests.

The Resource Conservation and Recovery Act, 42 U.S.C., §§ 6901-6992

The Solid Waste Disposal Act, as amended and revised by the RCRA, establishes requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The statute also addresses program administration, implementation and delegation to states, enforcement provisions and responsibilities, as well as research, training, and grant funding provisions. Provisions are established for the generation, storage, treatment, and disposal of hazardous waste, including requirements addressing generator record keeping, labeling, shipping papers, placarding, emergency response information, training, and security plans.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Title 42, U.S.C., §§ 9601, et seq.

CERCLA (also known as Superfund), establishes authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment.

Clean Water Act of 1977 (including 1987 amendments) Section 402, 33 USC Section 1342, 40 CFR, Subchapter D

The Clean Water Act authorizes the EPA to regulate discharges of wastewater and storm water into surface waters by using permits. Specifically, 40 CFR Parts 110 and 112 address discharge of oil and oil pollution prevention; Part 117 addresses reportable quantities for hazardous substances; and Parts 122, 125, and 129 address the National Pollutant Discharge Elimination System (NPDES) permit program. Spill prevention control and countermeasure plans are required for facilities storing petroleum products at quantities above the regulatory threshold (40 CFR 112).

5.13.6.2 State Authorities and Administering Agencies

Applicable State of California LORS are described below.

Hazardous Waste Control Act of 1972, Title 22, California HSC, Division 20, Chapter 6.5

This California law creates the framework under which hazardous wastes must be managed in California. The law provides for the development of a State hazardous waste program that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards (regulations) that are equal to or, in some cases, more stringent than federal requirements. The California Environmental Protection Agency (Cal/EPA), DTSC administers and implements the provisions of the law at the State level. CUPAs implement some elements of the law at the local level. The Riverside County Department of Environmental Health is the CUPA for this Project.

Environmental Health Standards for the Management of Hazardous Waste, Title 22, CCR, Division 4.5

These regulations establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and Federal RCRA. As with the Federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers; prepare manifests before transporting the waste off site; and use only permitted treatment, storage, and disposal facilities. Generator standards also include requirements for record keeping, reporting, packaging, and labeling. Additionally, while not a Federal requirement, California requires that hazardous waste be transported by registered hazardous waste transporters.

The standards addressed by Title 22, CFR include:

- Identification and Listing of Hazardous Waste (Chapter 11, §§66261.1, et seq.).
- Standards Applicable to Generators of Hazardous Waste (Chapter 12, §§66262.10, et seq.).
- Standards Applicable to Transporters of Hazardous Waste (Chapter 13, §§66263.10, et seq.).
- Standards for Universal Waste Management (Chapter 23, §§66273.1, et seq.).
- Standards for the Management of Used Oil (Chapter 29, §§66279.1, et seq.).

- Requirements for Units and Facilities Deemed to Have a Permit by Rule (Chapter 45, §§67450.1, et seq.)

The Title 22 regulations are established and enforced at the State level by DTSC. Some generator standards are also enforced at the local level by the applicable CUPA.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), HSC, Chapter 6.11 §§25404 – 25404.9

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the six environmental and emergency response programs listed below:

- Aboveground Storage Tank Program
- Business Plan Program
- California Accidental Release Prevention (CalARP) Program
- Hazardous Material Management Plan/Hazardous Material Inventory Statement Program
- Hazardous Waste Generator/Tiered Permitting Program
- Underground Storage Tank Program

The State agencies responsible for these programs set the standards for their programs while local governments implement the standards. The Riverside County Department of Environmental Health is the CUPA and has jurisdiction over the Project.

The Waste Management analysis provided in this section only considers application of the Hazardous Waste Generator/Tiered Permitting element of the Unified Program. Other elements of the Unified Program are addressed in Section 5.12, Hazardous Materials Handling and/or Section 5.14, Worker Safety.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, Title 27, CCR, Division 1, Subdivision 4, Chapter 1, §15100, et seq.

While these regulations primarily address certification and implementation of the program by the local CUPAs, the regulations do contain specific reporting requirements for businesses:

- Article 9 – Unified Program Standardized Forms and Formats (§§ 15400-15410)
- Article 10 – Business Reporting to CUPAs (§§15600 – 15620)

California Integrated Waste Management Act of 1989, Public Resources Code, Division 30, §40000, et seq.

The California Integrated Waste Management Act of 1989 (as amended) establishes mandates and standards for management of solid waste. This law regulates non-hazardous solid waste and provides a solid waste management system to reduce, recycle, and reuse solid waste generated in the State to the maximum extent feasible in an efficient and cost-effective manner to conserve natural resources, protect the environment, and improve landfill safety. Among other things, the law includes provisions addressing solid waste source reduction and recycling, standards for design and construction of municipal landfills, and programs for county waste management plans and local implementation of solid waste requirements. The Riverside County Department of Environmental Health has developed and implemented an integrated waste management program.

California Integrated Waste Management Board, Title 14, CCR, Division 7

These regulations further implement the provisions of the California Integrated Waste Management Act and set forth minimum standards for solid waste handling and disposal. The regulations include standards for solid waste management, as well as enforcement and program administration provisions:

- Chapter 3 – Minimum Standards for Solid Waste Handling and Disposal
- Chapter 7 – Special Waste Standards
- Chapter 8 – Used Oil Recycling Program
- Chapter 8.2 – Electronic Waste Recovery and Recycling

California Code of Regulations

Title 23, Waters, Division 3, Chapter 9. Requires the Regional Water Quality Control Board (RWQCB) issue a report of waste discharge for discharges of waste to land pursuant to the Water Code. The report requires submittal of information regarding the proposed discharge and waste management unit design and monitoring program. Waste Discharge Requirements (WDRs) issued by the RWQCB provide construction and monitoring requirements for the proposed discharge. The State Water Resources Control Board (SWRCB) has adopted general waste discharge requirements (97-10-DWQ) for discharge to land by small domestic wastewater treatment systems.

Title 23, Waters, Division 3, Chapter 15. Regulates all discharges of hazardous waste to land that may affect water quality. Class I Waste Management Units are required for hazardous waste, Class II Waste Management Units are for Designated Waste, and Class III landfills are required for non-hazardous solid waste.

Title 27, Division 2, Chapter 3. Outlines siting design, waste classification and management, construction standards and quality assurance, liner design, precipitation and drainage control, seismic design, special requirements for surface impoundments and land treatment units, water monitoring requirements, operation procedures, and closure and post-closure maintenance plan requirements.

Title 27, Division 2, Chapter 4. Outlines documentation and reporting requirements for WDRs and Solid Waste Facility Permits.

Toxic Pits Cleanup Act of 1984

The Toxic Pits Cleanup Act (TPCA) established a program to ensure existing surface impoundments which contain liquid hazardous wastes or hazardous wastes containing free liquid are made safe or closed. It is prohibited to discharge hazardous waste into surface impoundments, toxic ponds, pits, and lagoons.

Hazardous Waste Source Reduction and Management Review Act of 1989 (also known as SB 14), HSC, Division 20, Chapter 6.5, Article 11.9, §25244.12, et seq.

This law was enacted to expand the State's hazardous waste source reduction activities. Among other things, it establishes hazardous waste source reduction review, planning, and reporting requirements for businesses that routinely generate more than 12,000 kilograms (approximately 26,400 pounds) of hazardous waste in a designated reporting year. The review and planning elements are required to be done on a four-year cycle, with a summary progress report due to DTSC every fourth year.

Hazardous Waste Source Reduction and Management Review, Title 22, CCR, § 67100.1, et seq.

These regulations further clarify and implement the provisions of the Hazardous Waste Source Reduction and Management Review Act of 1989 (noted above). The regulations establish the specific review elements and reporting requirements to be completed by generators subject to the Act.

5.13.6.3 Local Authorities and Administering Agencies**Riverside County Ordinances, Number 615 Hazardous Waste**

These regulations govern the use, generation, storage, and disposal of hazardous materials and wastes within the County. The Riverside County Department of Environmental Health serves as the local CUPA authorized to implement the provisions of the six California Unified Program elements (noted above in the State LORS section). The Riverside County Department of Environmental Health has developed a solid waste program to oversee the handling, processing, and disposal of non-hazardous solid wastes to safeguard public health. Solid waste facilities include sanitary landfills, transfer stations, composting facilities, and non-hazardous contaminated soil facilities. Septic (pumping) businesses, toilet rental agencies, and refuse haulers are also regulated by the Riverside County Department of Environmental Health.

5.13.7 Involved Agencies and Agency Contacts

Agencies with jurisdiction over waste management issues are shown in Table 5.13-5.

Table 5.13-5. Agencies and Agency Contacts

Agency Contact	Phone/E-mail	Permit/Issue
Gloria Conti, Regulatory Assistance Officer Department of Toxic Substances Control 5796 Corporate Avenue Cypress, CA 90630-4732	(714) 484-5400 gconti@dtsc.ca.gov	Hazardous waste management
John Carmona, Senior Water Resources Control Engineer Colorado River Basin Region (7) Colorado River Basin RWQCB 73-720 Fred Waring Drive, Suite 100 Palm Desert, CA 92260	(760) 340-4521 jcarmona@waterboards.ca.gov	Waste Discharge Requirements, Storm Water Pollution Prevention Plans
Jim Ray, Supervisor Riverside County Department of Environmental Health Hazardous Materials, Indio Office 47950 Arabia Street, Suite A Indio, CA 92201	(760) 863-8976 JRay@co.riverside.ca.us	Hazardous waste management and non-hazardous waste management

5.13.8 Permits Required and Permit Schedule

As a generator of hazardous waste, the Project will be required to obtain an EPA identification number from the DTSC. As an operator of a bioremediation land treatment unit for handling and using contaminated soil on site and evaporation ponds for wastewater, the Project will require a WDR permit from the Colorado River Basin RWQCB. In addition, a Hazardous Materials Handler and Hazardous Waste Generator permit will be required from the Riverside County Department of Environmental Health, Hazardous Materials Management Division. The Riverside County Department of Environmental Health also requires permits for the installation and operation of underground

storage tanks (USTs) and aboveground storage tanks (ASTs). Table 5.13-6 identifies the waste management permits required for the Project.

Table 5.13-6. Permits Required and Permit Schedule

Permit/Approval	Schedule
EPA ID No. and register as a Hazardous Waste Generator with DTSC	Takes 7-10 businesses days once the application form has been received.
Hazardous Waste Generator Permit from Riverside County Department of Environmental Health, Hazardous Materials (CUPA) Program	Takes approximately 30 days for approval once needed information submittal (e.g., Business Plan) is complete.
Waste Discharge Requirements (WDR) Permit from the Colorado River Basin RWQCB	Takes approximately six months for approval once the application has been received.

5.13.9 References

California Integrated Waste Management Board (CIWMB), 2009. Solid Waste Information System (SWIS): Facility/Site Search. Internet Website. <<http://www.ciwmb.ca.gov/SWIS/Search.aspx>>.

Tetra Tech EC, Inc., 2009. Phase I Environmental Site Assessment Genesis Solar Energy Project Ford Dry Lake Site Riverside County, California. July 2009.