

# 8.13 Waste Management

## 8.13.1 Introduction

This subsection evaluates the potential effects on human health and the environment from nonhazardous and hazardous waste generated at the Walnut Energy Center (WEC).

Subsection 8.13.2 presents laws, ordinances, regulations, and standards (LORS) that apply to the generated waste. Subsection 8.13.3 describes the current condition of the proposed site, and Subsection 8.13.4 describes the waste and waste streams that are expected to be generated by the project. Subsection 8.13.5 describes waste disposal sites for nonhazardous and hazardous waste, and Subsection 8.13.6 describes methods that will be employed to manage the generated waste and mitigate its impacts on the environment. Subsection 8.13.7 discusses cumulative impacts, and Subsection 8.13.8 describes waste monitoring. Subsection 8.13.9 describes agencies that have jurisdiction over the generated waste and specifies who to contact in those agencies. Subsection 8.13.10 describes permits required for generated waste and a schedule for obtaining those permits, and Subsection 8.13.11 provides the references used to prepare this subsection.

## 8.13.2 Laws, Ordinances, Regulations, and Standards

Nonhazardous and hazardous waste handling at WEC will be governed by federal, state, and local laws. Applicable laws and regulations address proper waste handling, storage, and disposal practices to protect the environment from contamination and to protect facility workers and the surrounding community from exposure to nonhazardous and hazardous waste. Table 8.13-1 presents a summary of the LORS applicable to waste handling at the WEC facility.

**TABLE 8.13-1**  
Laws, Ordinances, Regulations, and Standards Applicable to WEC Waste Management

LORS	Purpose	Applicability (AFC Section Explaining Conformance)
<b>Federal</b>		
Resource Conservation and Recovery Act (RCRA) Subtitle D	Regulates design and operation of solid waste landfills	WEC solid waste will be collected and disposed of by a collection company in conformance with Subtitle D (Subsections 8.13.4.1.1, 8.13.4.2.1, 8.13.4.1, 8.13.6.1, 8.13.6.2.1, and 8.13.7).
RCRA Subtitle C	Controls storage, treatment, and disposal of hazardous waste	Hazardous waste will be handled by contractors in conformance with Subtitle C (Subsections 8.13.4.1.3, 8.13.4.2.3, 8.13.5.2, 8.13.6.1, 8.13.6.2.2, and 8.13.7).
Clean Water Act (CWA)	Controls discharge of wastewater to the surface waters of the U.S.	WEC will not discharge industrial wastewater. Sanitary wastewater will be discharged to a septic tank/leach field (Subsections 8.13.4.2.2, 8.13.6.2.1, and 8.14).

**TABLE 8.13-1**  
Laws, Ordinances, Regulations, and Standards Applicable to WEC Waste Management

<b>LORS</b>	<b>Purpose</b>	<b>Applicability (AFC Section Explaining Conformance)</b>
<b>State</b>		
California Integrated Waste Management Act (CIWMA)	Controls solid waste collectors, recyclers, and depositors	WEC solid waste will be collected and disposed of by a collection company in conformance with the CIWMA (Subsections 8.13.5.1, 8.13.6.1, 8.13.6.2.1, and 8.13.7).
Hazardous Waste Control Law (HWCL)	Controls storage, treatment, and disposal of hazardous waste	Hazardous waste will be handled by contractors in conformance with the HWCL (Subsections 8.13.4.2.3, 8.13.5.2, 8.13.6.2.2, and 8.13.7).
Porter-Cologne Water Quality Control Act	Controls discharge of wastewater to surface waters and groundwaters of California	WEC will not discharge industrial wastewater. Sanitary wastewater will be discharged to a septic tank/leach field (Subsections 8.13.4.2.2, 8.13.6.2.1, and 8.14).
California Fire Code	Controls storage of hazardous materials and wastes and the use and storage of flammable/combustible liquids	Wastes will be accumulated and stored in accordance with Fire Code requirements. Permits for storage containers will be obtained, as needed, from the Stanislaus County Fire Department (Subsection 8.13.10).
<b>Local</b>		
Stanislaus County General Plan, Safety Element, Policy Thirteen	Provides guidance for local management of hazardous waste	WEC will comply with County's CIWMP (Subsections 8.13.4.1.3, 8.13.4.2.3, 8.13.6.2.2, and 8.13.7).
Stanislaus County Integrated Waste Management Plan (CIWMP)	Provides guidance for local management of solid waste and household hazardous waste (incorporates the City and County's Source Reduction and Recycling Elements, which detail means of reducing commercial and industrial sources of solid waste)	WEC will comply with the County's Integrated Waste Management Plan and the City's Source Reduction and Recycling Element by recycling as much waste as possible (Subsections 8.13.4.1.1, 8.13.4.2.1, 8.13.6.2.1, and 8.13.7)
City of Turlock General Plan, Open Space and Conservation Element, Waste Management and Recycling, Section 6.6	Establishes City policies on reducing waste generation, meeting waste diversion goals, encouraging cleanup of contaminated sites, and ensuring adequate waste disposal capacity for the City's solid waste	Waste will be recycled consistent with applicable LORS (Subsections 8.13.6 and 8.13.7).
City of Turlock General Plan, Open Space and Conservation Element, Waste Management and Recycling, Section 6.6	Adopts Stanislaus County's Hazardous Waste Management Plan as City policy	WEC will comply with County's Hazardous Waste Management Plan (Subsections 8.13.4.1.3, 8.13.4.2.3, 8.13.6.2.2, and 8.13.7).
City of Turlock Municipal Code, Chapter 4-3	Adopts Uniform Fire Code with some amendments <sup>1</sup>	WEC will obtain a permit if needed. (Subsection 8.13.10)

<sup>1</sup> Permit required for storage, handling, or use of Class II, Class III-A, and Class III-B liquids in excess of 25 gallons inside of a building or 55 gallons outside of a building.

### **8.13.2.1 Federal**

USEPA regulates wastewater under the Clean Water Act (CWA). Industrial wastewater will be treated in a zero-liquid-discharge (ZLD) treatment system and reused, as described in Section 2.0. Sanitary wastewater will be discharged to a septic tank/leach field system.

The federal statute that controls both nonhazardous and hazardous waste is RCRA 42 USC 6901, et seq. RCRA's implementing regulations are found at 40 CFR 260, et seq. Subtitle D assigns responsibility for the regulation of nonhazardous waste to the states; federal involvement is limited to establishing minimum criteria that prescribe the best practicable controls and monitoring requirements for solid waste disposal facilities. Subtitle C controls the generation, transportation, treatment, storage, and disposal of hazardous waste through a comprehensive "cradle-to-grave" system of hazardous waste management techniques and requirements. It applies to all states and to all hazardous waste generators (above certain levels of waste produced). WEC will conform with this law in its generation, storage, transport, and disposal of any hazardous waste generated at the facility. The USEPA has delegated its authority for implementing the law to the State of California.

### **8.13.2.2 State**

Nonhazardous solid waste is regulated by the California Integrated Waste Management Act (CIWMA) of 1989, found in Public Resources Code (PRC) Section 40000, et seq. This law provides an integrated statewide system of solid waste management by coordinating state and local efforts in source reduction, recycling, and land disposal safety. Counties are required to submit Integrated Waste Management Plans to the state. This law directly affects Stanislaus County and the solid waste hauler and disposer that will collect WEC solid waste. It also affects WEC to the extent that hazardous wastes are not to be disposed of along with solid waste.

Wastewater is regulated by the State and Regional Water Quality Control Boards under the Porter-Cologne Water Quality Control Act. Other than sanitary wastewater, which is discharged via a septic tank/leachfield, no wastewater will be discharged by WEC (see Subsection 8.14).

RCRA allows states to develop their own programs to regulate hazardous waste. The programs must be at least as stringent as RCRA. California has developed its own program in the California Hazardous Waste Control Law (HWCL) (Health and Safety Code Section 25100, et seq.). Because California has elected to develop its own program, the HWCL performs essentially the same regulatory functions as RCRA and is the law that will regulate hazardous waste at WEC. However, the HWCL includes hazardous wastes that are not classified as hazardous waste under RCRA. Because hazardous wastes will be generated at the WEC facility during construction and operation, the HWCL will require the Applicant to adhere to storage, recordkeeping, reporting, and training requirements for these wastes.

### **8.13.2.3 Local**

The City of Turlock Municipal Services Department and the Stanislaus County Department of Environmental Resources (DER) will be responsible for administering and enforcing the CIWMA for solid, nonhazardous waste for WEC.

For hazardous waste, local regulation consists primarily of the administration and enforcement of the HWCL. DER's Hazardous Materials Program is the local entity responsible for inspecting hazardous waste generators and reviewing their procedures for storage, treatment, and disposal of hazardous wastes.

For emergency spills, the City of Turlock Fire Services has four firefighters who have completed formal training in Hazardous Materials Incident Response. These firefighters are members of a countywide Hazardous Materials (Haz Mat) Team. The Haz Mat Team will identify the type and source of the hazardous material, oversee evacuation of people, and confine the spilled material, if possible. Cleanup of the material is the responsibility of the facility causing the spill. The City of Turlock Fire Services Station No. 2, located at 791 S. Walnut Road in Turlock, is the nearest station to the proposed project site. Backup is provided by Station No. 4 at 2820 N. Walnut Road. In addition, the City of Turlock Fire Services has mutual-aid agreements with the Turlock Rural Fire District and the Mountainview Fire District (McDaniel 2002).

#### **8.13.2.4 Codes**

The design, engineering, and construction of hazardous waste storage and handling systems will be in accordance with all applicable codes and standards, including:

- The Uniform Fire Code
- The Uniform Building Code
- The Uniform Plumbing Code
- California Building Code
- California Fire Code
- Turlock Municipal Code

#### **8.13.3 Environmental Condition of Site**

A Phase I Environmental Site Assessment (ESA) was conducted by ENSR Corporation in accordance with the ASTM Standard E 1527, Standard Practice for Environmental Site Assessments. According to a report prepared by ENSR describing the results of the Phase I ESA, the 69-acre parcel is currently used for corn production. For the past 15 years, the site has reportedly been leased for growing agricultural crops, including corn, oats, and alfalfa. The site has also been used by Foster Farms to store rice hulls and sawdust for chicken bedding. The ESA report, dated September 2002, concluded that present and past activities were mainly agricultural in nature. The report recommended that soil samples be collected to determine the presence of, and to assess the potential health risks associated with, agricultural chemicals that may have been applied to the site. The report recommended that the soils be tested for metals and organochlorine pesticides. A copy of the ESA report is included in Appendix 8.13A.

A Phase II Environmental Site Assessment performed by ENSR Corporation detected no pesticide residues in soils. Low levels of metals were detected in soils, but these were deemed as naturally occurring compounds indigenous to the soils in the area. A copy of the Phase II ESA is included in Appendix 8.13B.

## 8.13.4 Project Waste Generation

Wastewater, solid nonhazardous waste, and liquid and solid hazardous waste will be generated at the WEC site during facility construction and operation. Solid nonhazardous waste will also be generated during the construction of the electric transmission lines, the natural gas supply pipeline, and water pipelines.

### 8.13.4.1 Construction Phase

During construction, the primary waste generated will be solid nonhazardous waste. However, some nonhazardous liquid waste and hazardous waste (solid and liquid) will also be generated. Most of the hazardous wastes will be generated at the plantsite, but a minimal quantity of hazardous waste will be generated during construction of the electric transmission lines, natural gas supply pipeline, and City of Turlock potable water and recycled water supply pipelines. The types of waste and their estimated quantities are described below.

#### 8.13.4.1.1 Nonhazardous Solid Waste

Listed below are nonhazardous waste streams that could potentially be generated from construction of the generating facility, the electric transmission lines, the natural gas supply pipeline, and the water supply pipelines.

##### ***Paper, Wood, Glass, and Plastics***

Approximately 60 tons of paper, wood, glass, and plastics will be generated from packing materials, waste lumber, insulation, and empty nonhazardous chemical containers during project construction. These wastes will be recycled where practical. Waste that cannot be recycled will be disposed of weekly in a Class III landfill. Onsite, the waste will be placed in dumpsters.

##### ***Concrete***

Approximately 40 tons of excess concrete will be generated during construction. Waste concrete will be disposed of weekly in a Class III landfill or at clean fill sites, if available.

##### ***Metal***

Approximately 15 tons of metal, including steel from welding/cutting operations, packing materials, and empty nonhazardous chemical containers, and aluminum waste from packing materials and electrical wiring will be generated during construction. Waste will be recycled where practical, and nonrecyclable waste will be deposited in a Class III landfill.

##### ***Drilling Mud***

Some drilling could be required to install natural gas and water pipelines. Drilling mud, consisting of nontoxic bentonite clay, would be used to lubricate and cool the drilling bit. Up to 300 tons could be used in the drilling and will require disposal at a Class II or III landfill.

#### 8.13.4.1.2 Nonhazardous Wastewater

Nonhazardous wastewater generated will include sanitary wastewater, stormwater runoff, wastewater from pressure-testing the gas supply pipeline, and water from excavation dewatering. Sanitary waste will be collected in portable, self-contained toilets. Equipment washwater will be contained at specifically designated wash areas and will be disposed of offsite. Stormwater runoff will be managed in accordance with the contractor-developed stormwater pollution prevention plan that will be approved by the appropriate agencies before starting construction.

The gas supply pipeline hydrostatic test water will be filtered to collect any sediment and welding fragments. The water will be collected, tested, and disposed of by the pipeline contractor.

#### **8.13.4.1.3 Hazardous Waste**

Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Some hazardous solid waste, such as welding materials and dried paint, may also be generated.

Flushing-and-cleaning waste liquid will be generated when pipes and boilers are cleaned and flushed. Passivating fluid waste is generated when high-temperature pipes are treated with either a phosphate or nitrate solution. The volume of flushing-and-cleaning and passivating liquid waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, and paint waste is expected to be minimal.

The construction contractor will be considered the generator of hazardous construction waste and will be responsible for proper handling of hazardous waste in compliance with all applicable federal, state, and local laws and regulations. This responsibility will include licensing, personnel training, accumulation limits and times, and reporting and recordkeeping. The hazardous waste will be collected in satellite accumulation containers near the points of generation. It will be moved daily to the contractor's 90-day hazardous waste storage area located at the site construction laydown area. The waste will be removed from the site by a certified hazardous waste collection company and delivered to an authorized hazardous waste management facility, before expiration of the 90-day storage limit.

#### **8.13.4.2 Operation Phase**

During WEC facility operation, the primary waste generated will be nonhazardous solid waste. However, varying quantities of both solid and liquid hazardous waste will also be generated periodically. The types of waste and their estimated quantities are discussed below.

##### **8.13.4.2.1 Nonhazardous Solid Waste**

The majority of solid waste will be salts removed by the WEC's ZLD system. The WEC will also produce facility wastes, typical of power generation facility operations and maintenance activities. These will include rags, turbine air filters, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The quantity generated is estimated to be about 50 cubic yards per year (approximately 35 tons per year). Large metal parts will be recycled.

##### ***Zero-Liquid-Discharge Treatment System***

Cooling tower blowdown will be sent to the ZLD system. Here, water will be recovered and reused as makeup for the demineralized water system or returned to the cooling tower. The remaining solid waste residual, or salt cake, will be collected and disposed of in a suitable offsite landfill, once it has been tested to confirm that it is nonhazardous. If the salt cake is found to be hazardous, it will be disposed of at a hazardous waste landfill. A detailed description of the ZLD system is presented in Subsection 2.2.9.1.2.

During baseload operation at average ambient conditions, an average of 8 tons per day of salt cake will be generated and transported to an offsite landfill for disposal. During

baseload operation at high ambient temperatures, an estimated 10 tons per day of salt cake will be generated. Expected annual salt cake generation is estimated at 2,830 tons.

#### 8.13.4.2.2 Nonhazardous Wastewater

Water balance diagrams, provided in Figures 2.2-6a and 2.2-6b, illustrate the expected waste streams and flow rates for the WEC. The wastewater collection system will collect sanitary wastewater from sinks, toilets, and other sanitary facilities to be discharged to an onsite septic system and leachfield.

#### *Plant Drains-Oil/Water Separator*

General facility drainage will consist of area washdown, sample drains, equipment leakage, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping, and will be routed to the facility wastewater collection system. Drains that could contain oil or grease will first be routed through an oil/water separator. Water from the plant wastewater collection system will be recycled to the cooling tower basin. Wastewater from combustion turbine water washes will be collected in a holding tank for testing. If the wastewater is suitable for reuse, it will be pumped to the cooling tower basin. If the water is unsuitable for reuse, it will be trucked offsite for disposal at an approved wastewater disposal facility.

#### 8.13.4.2.3 Hazardous Waste

Hazardous waste generated will include waste lubricating oil, used oil filters, spent catalyst, and chemical cleaning wastes. The catalyst units will contain heavy metals that are considered hazardous. Chemical cleaning wastes will be generated from periodic cleaning of the HRSGs and associated piping. They will consist of alkaline and acidic cleaning solutions used during chemical cleaning of the HRSG boiler system turbine wash and HRSG fireside washwaters. These wastes generally contain high concentrations of heavy metals and will be collected for offsite disposal.

The chemical-feed-area drains will collect spillage, tank overflows, effluent from maintenance operations, and liquid from area washdowns. After neutralization, if required, water collected from the chemical storage areas will be directed to the cooling tower basin. The quantity of this effluent is expected to be minimal.

Wastes that will be generated at the facility are summarized in Table 8.13-2.

**TABLE 8.13-2**  
Hazardous Wastes Generated at the WEC Facility

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Lubricating oil	Small leaks and spills from the gas-turbine lubricating-oil system	Hydrocarbons	300 lbs/yr	Hazardous	Cleaned up using sorbent and rags—disposed of by certified oil recycler
Lubricating oil filters	Gas-turbine lubricating-oil system	Paper, metal, and hydrocarbons	600 lbs/yr	Hazardous	Recycled or disposed of by certified oil recycler
Laboratory analysis waste	Water treatment	Sulfuric acid	400 gals/yr	Hazardous	Recycled by certified recycler

**TABLE 8.13-2**  
Hazardous Wastes Generated at the WEC Facility

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
SCR catalyst units	SCR system (warranty is 3 years—use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	600 lbs every 3 to 5 yrs	Hazardous	Recycled by SCR manufacturer or disposed of in Class I landfill
CO catalyst units	CO catalyst (use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	600 lbs every 3 to 5 yrs	Hazardous	Recycled by manufacturer
Oily rags	Maintenance, wipe-down of equipment, etc.	Hydrocarbons, cloth	200 lbs/yr (~500 rags/yr)	Hazardous	Recycled or disposed of by certified oil recycler
Oil sorbents	Cleanup of small spills	Hydrocarbons	150 lbs/yr	Hazardous	Recycled or disposed of by certified oil recycler
Cooling tower sludge	Deposited in cooling tower basin by cooling water	Dirt from air	100 tons/yr	Could be hazardous, but usually not	Class II landfill if nonhazardous; Class I if hazardous
Salt cake	ZLD system	Salt from brine concentration	2,830 tons/yr	Could be hazardous, but usually not	Class II/III landfill if nonhazardous; Class I if hazardous
Chemical feed area drainage	Spillage, tank overflow, area washdown water	Water with water treatment chemicals	Minimal	May be hazardous if corrosive	Onsite neutralization, if required, then discharged to cooling tower basin

### 8.13.5 Waste Disposal Sites

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste [MSW], or garbage) will be recycled or deposited in a Class III landfill. Hazardous wastes, both solid and liquid, will be delivered to a permitted offsite treatment, storage, and disposal (TSD) facility for treatment or recycling, or will be deposited in a permitted Class I landfill. The following subsections describe the waste disposal sites feasible for disposal of WEC wastes.

#### 8.13.5.1 Nonhazardous Waste

Turlock Scavenger Company provides garbage collection services for residents of the City of Turlock and for some commercial and industrial facilities in the project site area (Hoeh 2002). While Turlock Scavenger holds the franchise with the City of Turlock for residential pickup, commercial and industrial facilities contract directly with providers of garbage collection services (Hoeh 2002). Other garbage collection services in the area of the project include Bertolletti Disposal Service, Gilton Solid Waste Management, and Waste Management, Inc.

Turlock Scavenger operates a solid waste transfer station located at 1100 South Walnut Road in Turlock and a recycling center at 1020 South Walnut Road. The disposal facility typically used by Turlock Scavenger is the Fink Road Landfill in Crows Landing (Hoeh 2002). This facility is owned and operated by Stanislaus County. The facility is located in western Stanislaus County, approximately 3.5 miles west of the Town of Crows Landing and 25 miles southwest of the City of Modesto. Adjacent to and within the boundaries of the Fink Road Landfill is the Covanta Waste-to-Energy Cogeneration Facility operated by Ogden Martin Systems. The waste-to-energy plant burns approximately 800 tons of solid waste per day from residential and commercial facilities in both the City and the County (Hoeh 2002). According to the CIWMB, there are no open enforcement actions against either the Fink Road Landfill or the Covanta Waste-to-Energy Cogeneration Facility and no violations have been issued to these facilities for the past 2 years (CIWMB 2002a).

The Fink Road Landfill has adequate capacity to handle and dispose of solid waste generated by the WEC facility, as shown in Table 8.13-3. In 2001, the Fink Road Landfill accepted 183,107 tons of solid waste for landfill disposal. According to the Stanislaus County Department of Public Works, the landfill has enough capacity until 2017 for garbage and until 2023 for waste-to-energy ash from the co-generation facility. The total capacity of the landfill is 6.8 million tons and there are plans for expansion (City of Turlock 2002).

The most likely alternatives to the Fink Road Landfill and Covanta waste-to-energy plant are other landfills located outside Stanislaus County. These include the Forward, Inc. and the Austin Road/Forward, Inc. landfills in Manteca and the Highway 59 Disposal Site in Merced. Regional landfills and transfer stations are shown in Table 8.13-3.

**TABLE 8.13-3**  
Solid Waste Disposal Facilities for WEC Waste

Landfill/MRF/ Transfer Station	Location	Class	Permitted Capacity <sup>a</sup>	Permitted Throughput <sup>a</sup>	Remaining Capacity <sup>a</sup>	Estimated Closure Date <sup>a</sup>	Comments <sup>b</sup>
Fink Road Landfill	Crows Landing, CA	II, III	2,400 yd <sup>3</sup> /day	1,500 tons/day	11.4 million yd <sup>3</sup>	2011 <sup>c</sup>	No violations
Covanta Stanislaus, Inc	Crows Landing, CA	Transformation Facility	3,200 tons/day	1,700 tons/day	NA	NA	No violations
Turlock Transfer	Turlock, CA	Transfer Station	1,872 tons/day	1,872 tons/day	NA	NA	No violations
Forward Inc.	Manteca, CA	I, II, III	15.9 million yd <sup>3</sup>	6,680 tons/day	9.3 million yd <sup>3</sup>	2006	No violations
Austin Road/Forward Landfill	Manteca, CA	III	18.2 million yd <sup>3</sup>	1,200 tons/day	1.6 million yd <sup>3</sup>	2053	No violations
Highway 59 Disposal Site	Merced, CA	III	30 million yd <sup>3</sup>	900 tons/day	2.9 million yd <sup>3</sup>	2030	No violations

<sup>a</sup> CIWMB (2002c).

<sup>b</sup> CIWMB (2002a).

<sup>c</sup> The official estimated closure date on record with the state is January 1, 2011 (CIWMB 2002c); however, Stanislaus County is currently attempting to expand the landfill's capacity (Stanislaus County 1999).

Because adequate landfill capacity exists, disposal of solid nonhazardous waste will not be a constraint on WEC development.

### **8.13.5.2 Hazardous Waste**

Hazardous waste generated at WEC will be stored at the facility for fewer than 90 days. In addition, hazardous waste may be transferred to and temporarily stored at the TID corporate yard. The waste will then be transported by a permitted hazardous waste transporter to a TSD facility. These facilities vary considerably in what they can do with the hazardous waste they receive. Some can only store waste, some can treat the waste to recover usable products, and others can dispose of the waste by incineration, deep-well injection, or landfilling. (Incineration and deep-well injection are not permitted in California.)

According to the California Environmental Protection Agency's (CalEPA) DTSC, there are 45 facilities in California that can accept hazardous waste for treatment or disposal (DTSC 2001). The closest commercial hazardous waste disposal facility is the Kettleman Hills facility, described below. Other TSD facilities in the area include the 45,000-tons-per-year Safety-Kleen Corporation facility in Reedley.

For ultimate disposal, California has the following three hazardous waste (Class I) landfills.

#### **8.13.5.2.1 Clean Harbors' (Formerly Safety-Kleen's) Buttonwillow Landfill in Kern County**

New capacity was recently added to this facility, which was purchased in September 2002 by Clean Harbors (Marks 2002). This landfill has a current permitted capacity of 14.3 million cubic yards, as of July 2002 (CIWMB 2002c). The currently projected closure date for the landfill is 2040 (CIWMB 2002c). Buttonwillow is permitted to accept industrial wastes and contaminated soils (DTSC 2001).

#### **8.13.5.2.2 Clean Harbors' (Formerly Safety-Kleen's) Westmoreland Landfill in Imperial County**

This landfill has used much of its permitted capacity and may be converted to a transfer facility given the Buttonwillow facility's recent increase in capacity (Marks 2002). The annual deposit rate is currently about 50,000 cubic yards (DTSC 2001). The landfill's conditional use permit (CUP) prohibits the acceptance of some types of waste, including radioactive (except geothermal) waste, flammables, biological hazard waste (medical), PCB, dioxins, air- and water-reactive wastes, and strong oxidizers.

#### **8.13.5.2.3 Waste Management's Kettleman Hills Landfill in Kings County**

This landfill has 5 to 6 million cubic yards of remaining permitted capacity for hazardous waste (Class I)(Yarbrough 2002). It also accepts Class II and Class III wastes. According to Waste Management Inc., the landfill will be open for at least another 25 years, although they could permit additional capacity, if necessary. The Class I landfill is permitted for and will accept all hazardous wastes except radioactive, medical, and unexploded ordnance (UXO). The Class II and III waste disposal facility has a planned closure date of 2010. It is permitted to accept up to 1,400 tons per day of solid waste and contaminated soil (CIWMB 2002c).

#### **8.13.5.2.4 Additional Commercial Hazardous Waste Treatment and Recycling Facilities**

In addition to hazardous waste landfills, there are numerous offsite commercial liquid hazardous waste treatment and recycling facilities in California. These facilities include ENSCO West's treatment facility in Wilmington (270,000 gallons per day), Romic Environmental's recycling facility in East Palo Alto (155,000 gallons per day), D/K

Environmental's treatment facility in Vernon (75,000 gallons per day), Onyx Environmental's thermal treatment facility in Azusa (517,000 gallons per day), and U.S. Filter Recovery Services' facility in Vernon (33,000,000 gallons per month) (DTSC 2001). These facilities have sufficient capacity to recycle and/or treat hazardous waste generated in California. Most hazardous waste generated at the WEC site will be generated from the flushing and cleaning of pipelines and the HRSG prior to facility startup. All hazardous waste will be removed and delivered to a TSD facility. Used oil will be collected by a permitted oil recycler.

Because adequate landfill and treatment facility capacities exist, disposal of solid and liquid hazardous waste will not be a constraint on WEC development.

### **8.13.6 Waste Management Methods and Mitigation**

The handling and management of waste generated by WEC will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The first priority will be to reduce the quantity of waste generated through pollution prevention methods (e.g., high-efficiency cleaning methods). The next level of waste management will involve reusing or recycling wastes (e.g., used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste nonhazardous (e.g., neutralization). Finally, offsite disposal will be used to dispose of residual wastes that cannot be reused, recycled, or treated.

The following subsections present methods for managing both nonhazardous and hazardous waste generated by WEC.

#### **8.13.6.1 Construction Phase**

Nonhazardous solid waste generated during construction will be collected in onsite dumpsters and picked up periodically by Turlock Scavenger. The waste will then be taken to the Fink Road Landfill or another local landfill. Recyclable materials can be segregated and transported by construction contractors or other private haulers to an area recycling facility. Turlock Scavenger provides drop boxes or debris boxes for large quantities of recyclables.

Wastewater generated during construction will include sanitary waste and could include equipment washwater and stormwater runoff. Sanitary waste will be collected in portable, self-contained toilets. Equipment washwater will be contained at designated wash areas and will be disposed of offsite. Stormwater runoff will be managed in accordance with a stormwater management permit, which will be obtained prior to the start of construction. The generation of nonhazardous wastewater will be minimized through water conservation and reuse measures.

Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing-and-cleaning fluids, passivating fluids, and solvents. Some solid waste in the form of welding materials and dried paint may also be generated. Nonhazardous materials will be used whenever possible to minimize the quantity of hazardous waste generated. The construction contractor will be the generator of hazardous construction waste and will be responsible for proper handling in compliance with all applicable federal, state, and local laws and regulations, including licensing, training of personnel, accumulation limits and times, and reporting and recordkeeping. The hazardous waste will

be collected in satellite accumulation containers near the points of generation. This waste will be moved daily to the contractor's 90-day hazardous waste storage area, located at the plant construction laydown area. The waste will be delivered to an authorized hazardous waste management facility, before expiration of the 90-day storage limit.

### **8.13.6.2 Operation Phase**

The primary waste generated during the operation phase will be salt cake from the ZLD process. The salt cake is expected to be nonhazardous. Other nonhazardous solid waste will also be generated, as well as varying quantities of liquid and solid hazardous waste. Handling and mitigation of these wastes is described in the following subsections.

#### **8.13.6.2.1 Nonhazardous Wastes**

Wastewater from facility sinks, toilets, and showers will be disposed of using a septic tank/leach field system.

Nonhazardous solid waste or refuse will be collected and deposited in a local landfill. Whenever practical, recycling will be implemented throughout the facility to minimize the quantity of nonhazardous waste that must be disposed of in a landfill.

#### **8.13.6.2.2 Hazardous Wastes**

To avoid the potential effects on human health and the environment from handling and disposing of hazardous wastes, procedures will be developed to ensure proper labeling, storage, packaging, recordkeeping, and disposal of all hazardous wastes. The following general procedures will be employed:

- WEC will be classified as a hazardous waste generator. TID has an existing EPA ID number, CAD 981367691, that will also be used to manifest hazardous waste from the WEC facility. Most hazardous waste generated in the District is delivered by TID staff to a central area at TID's corporate yard for temporary storage until arrangements for offsite disposal are made by the Safety and Hazardous Waste Department. Hazardous waste from WEC will be stored onsite or transported to the TID corporate yard and stored for less than 90 days before offsite disposal or recycling.
- Hazardous wastes will be accumulated at the generating facility according to CCR Title 22 requirements for satellite accumulation.
- Hazardous wastes will be stored in appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas will be sized to hold the full contents of the largest single container and, if not roofed, sized for an additional 20 percent to allow for rainfall. These areas will be inspected daily.
- Hazardous wastes will be collected by a licensed hazardous waste hauler, using a hazardous waste manifest. Wastes will only be shipped to authorized hazardous waste management facilities. Biannual hazardous waste generator reports will be prepared and submitted to the DTSC. Copies of manifests, reports, waste analyses, and other documents will be kept onsite and will remain accessible for inspection for at least 3 years.
- Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization.

- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever practical, and wastes will be recycled whenever practical.

Specifically, hazardous waste handling will include the following practices. Handling of hazardous wastes in this way will minimize the quantity of waste deposited to landfills:

- Waste lubricating oil will be recovered and recycled by a waste oil recycling contractor, such as Evergreen Oil, Inc. Spent oil filters and oily rags will be recycled.
- Spent SCR and oxidation catalysts will be recycled by the supplier, if possible, or disposed of in a Class I landfill.
- Chemical cleaning wastes will consist of alkaline and acid cleaning solutions used during pre-operational chemical cleaning of the boiler system of the HRSGs, acid cleaning solutions used for chemical cleaning of the HRSG after the unit is put into service, and turbine wash and HRSG fireside washwaters. These wastes, which are subject to high metal concentrations, will be stored temporarily onsite at WEC or the TID corporate yard in portable tanks and disposed of offsite, in accordance with applicable regulatory requirements. Disposal may consist of offsite treatment, recovery of metals, and/or landfilling.

### **8.13.6.3 Facility Closure**

When WEC is closed, both nonhazardous and hazardous wastes must be handled properly. Closure can be temporary or permanent. Temporary closure would be for a period of time greater than the time required for normal maintenance, including overhaul or replacement of the combustion turbines. Causes for temporary closure could be a disruption in the supply of natural gas, flooding of the site, or damage to the plant from earthquake, fire, storm, or other natural causes. Permanent closure would consist of a cessation in operations with no intent to restart operations and could result from the age of the plant, damage to the plant beyond repair, economic conditions, or other unforeseen reasons. Handling of wastes for these two types of closure are discussed below.

#### **8.13.6.3.1 Temporary Closure**

For a temporary closure, where there is no release of hazardous materials, facility security will be deployed on a 24-hour basis, and the CEC will be notified. Depending on the length of shutdown necessary, a contingency plan for the temporary cessation of operations will be implemented. This plan will be prepared as described in the plant closure section. The plan will be developed to ensure conformance with all applicable LORS and the protection of public health and safety and the environment. The plan, depending on the expected duration of the shutdown, could include draining all chemicals from storage tanks and other equipment and the safe shutdown of all equipment. All wastes will be disposed of according to applicable LORS, as discussed in Subsection 8.13.2.

Where the temporary closure is in response to facility damage, or where there is a release or threatened release of hazardous waste or materials into the environment, procedures will be followed as set forth in an RMP. The RMP is described in Subsection 8.12.8.4. Procedures include methods to control releases, notification of applicable authorities and the public, emergency response, and training for generating facility personnel in responding to and

controlling releases of hazardous materials and hazardous waste. Once the immediate problem of hazardous waste and materials release is contained and cleaned up, temporary closure will proceed as described for a closure where there is no release of hazardous materials or waste.

#### **8.13.6.3.2 Permanent Closure**

The planned life of the generation facility is 30 years, although operation could be longer. When the facility is permanently closed, the handling of nonhazardous and hazardous waste and hazardous materials will be part of a general closure plan that will attempt to maximize the recycling of facility components (see Section 4.0). Unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment containing chemicals will be drained and shut down to protect public health and safety and the environment. All nonhazardous wastes will be collected and disposed of in appropriate landfills or waste-collection facilities. All hazardous wastes will be disposed of according to applicable LORS. The site will be secured 24 hours per day during the WEC decommissioning activities.

#### **8.13.7 Cumulative Impacts**

The WEC facility will generate nonhazardous solid waste that will add to the total waste generated in Stanislaus County and in California. However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by WEC. It is estimated that WEC will generate approximately 850 tons of solid waste during construction and about 14,000 tons a year from operations (including approximately 3 tons of hazardous waste). Compared to the total amount of 694,617 tons of solid waste landfilled in Stanislaus County in the year 2000, WEC's contribution will represent approximately 2 percent of total county waste generation (CIWMB 2001b). Therefore, the impact of the project on solid waste recycling and disposal capacity is not significant.

Stanislaus County has implemented alternative waste management programs for solid waste and was recently recognized by the California Integrated Waste Management Board for achieving the statewide goal of 50 percent diversion from landfilling of municipal solid waste (CIWMB 2002d).

Hazardous waste generated will consist of waste oil, filters, SCR and oxidation catalysts, and fluids used to clean the HRSGs and piping. The waste oil and catalysts will be recycled. Cleaning and flushing fluids will be removed and disposed of offsite. Cleaning and flushing will occur only periodically. Hazardous waste treatment and disposal capacity in California is more than adequate. Therefore, the effect of WEC on hazardous waste recycling, treatment, and disposal capability is not significant.

#### **8.13.8 Monitoring**

Because the environmental impacts caused by construction and operation of the facility are expected to be minimal, extensive monitoring programs will not be required. Generated waste, both nonhazardous and hazardous, will be monitored during project construction and operation in accordance with the monitoring and reporting requirements mandated by the regulatory permits to be obtained for construction and operation.

### 8.13.9 Involved Agencies

Several agencies, including USEPA at the federal level and CalEPA at the state level, regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by WEC. The hazardous waste laws, however, are administered and enforced primarily through local agencies. For WEC, the primary agency for hazardous waste issues will be the Stanislaus County Department of Environmental Resources, which is the designated CUPA for the area. The agencies and persons to contact for each type of waste are shown in Table 8.13-4.

**TABLE 8.13-4**  
Agency Contacts for WEC Waste Management

Topic	Agency	Address	Contact	Title	Telephone
<b>Nonhazardous Waste</b>					
Solid Waste	County of Stanislaus Department of Environmental Resources	3800 Cornucopia Way, Suite C Modesto, CA 95358	Ron DeLong	Manager, Solid Waste Management Program	(209) 525-6781
<b>Hazardous Waste</b>					
Hazardous	County of Stanislaus Department of Environmental Resources	3800 Cornucopia Way, Suite C Modesto, CA 95358	Jim Simpson	Manager, Hazardous Materials Program	(209) 525-6753

### 8.13.10 Permits Required and Permit Schedule

Table 8.13-5 lists the permits required by Stanislaus County.

**TABLE 8.13-5**  
Permits Required and Permit Schedule for WEC Waste Management

Permit	Applicability	Schedule for Permit
Flammable or Combustible Liquids Storage Permit	Stanislaus County Fire Code requires that businesses obtain permits for the use and storage of flammable and combustible liquid wastes.	Before storing flammable or combustible liquid wastes at the site.

### 8.13.11 References

California Integrated Waste Management Board (CIWMB). 2002a. "Inventory of Solid Waste Facilities Violating State Minimum Standards." June 5.

CIWMB. 2002b. "Landfill Tipping Fees and Tonnage Data. 2001 County Summary Tonnage Report." June 20.

CIWMB. 2002c. Solid Waste Information System (SWIS) Database. September 5 and 10.

CIWMB, 2002d. Press Release: "Central Valley Communities Cut Waste, Reach Goal: Diversion Rates Approved for Fresno, Merced, and Stanislaus County Cities." July 26.

City of Turlock. 2002. *City of Turlock General Plan, 1992-2012*. Prepared September 1992, adopted March 1993, reviewed 2002. p. 6-24.

California Environmental Protection Agency, Department of Toxic Substance Control (DTSC). 2001. *California Commercial Offsite Hazardous Waste Management Facilities*. February 14.

Hoeh, D. 2002. Personal communication between Denton Hoeh, Solid Waste Management Program Staff, and Karen Parker of CH2M HILL. Stanislaus County Department of Environmental Resources, Solid Waste Program. September 6.

Marks, K. 2002. Personal communication between K. Marks and Karen Parker of CH2M HILL regarding Safety Kleen Environmental. September 3.

Stanislaus County. 1999. *Stanislaus County Department of Public Works, Draft Environmental Impact Report for Fink Road Landfill Expansion*.

Yarbrough, T. 2002. Personal communication between T. Yarbrough, Sales Representative, Chemical Waste Management, Inc., and Karen Parker of CH2M HILL. September 3.