

8.9 WASTE MANAGEMENT

8.9.1 INTRODUCTION

This section describes the potential effects on human health and the environment from both hazardous and nonhazardous wastes generated during construction, operation and maintenance (O&M) of the proposed Kings River Conservation District Community Power Plant (KRCDD CPP). It also describes waste disposal sites for the hazardous and nonhazardous wastes and methods that will be employed to manage the generated wastes. The section also includes a discussion of all applicable federal, state and local laws, ordinances, regulations and standards (LORS), a discussion of potential impacts, proposed mitigation measures and the potential for cumulative impacts.

8.9.2 AFFECTED ENVIRONMENT

8.9.2.1 Project Description

KRCDD is proposing to develop the KRCDD CPP, a nominal 565-megawatt (MW) natural gas-fired combined cycle base load power plant. The plant will be located near the City of Parlier, in Fresno County on an approximately 32-acre project site. The site is located in an area currently zoned for agriculture and currently being used predominately for agricultural purposes (vineyards). Existing structures on the project site include a vacant rural dwelling, detached garage and barn. Approximately 15 acres of a 40-acre parcel to the immediate south of the project site will be used for temporary staging and parking during construction. The KRCDD CPP project site, construction staging area and associated linear facilities as described below are shown on Figure 1-3 in Chapter 1, Executive Summary.

Natural gas for the KRCDD CPP will be provided by a new approximately 26-mile long 20-inch underground pipeline interconnection to the Southern California Gas Company (SCG) Line 7000 near the City of Visalia, California. The new gas pipeline will primarily follow existing roads and be located in public right-of-way. Five construction staging areas have also been identified for use during construction of the gas pipeline, each with an approximate size of 200 feet by 200 feet.

The KRCDD CPP will deliver electric power to the Pacific Gas & Electric Company (PG&E) transmission grid through a new approximately five mile-long 230-kilovolt (kV) radial transmission line between the on-site 230-kV switchyard site and PG&E's McCall Substation. The transmission line will cross both private property and public right-of-way.

The primary source of process makeup water for the KRCDD CPP will be recycled water delivered by new underground pipeline interconnections to the Parlier Wastewater Treatment



Plant (WWTP) and the Sanger WWTP effluent percolation and evaporation ponds located on Lincoln Avenue (i.e., Lincoln Ponds). The Parlier WWTP is located adjacent to the north of the plant site, and the interconnection will be located at the northern plant site boundary. The proposed interconnection to the Sanger Lincoln ponds is approximately five miles north and will be located primarily along existing roadways. Currently, two options are being considered for the water pipeline interconnection to Lincoln Ponds (i.e., Water Supply Pipeline Option 1 and Option 2). Up to four new shallow wells recovering percolated effluent will provide a back-up cooling water supply.

Potable water for domestic use will be supplied by a new groundwater well to be installed on the project site. There is no offsite linear associated with the potable water supply. Domestic wastewater will be discharged to the Parlier WWTP. The sewer interconnection is located on the northern boundary of the project site with no offsite linear.

8.9.2.2 Phase I Environmental Assessment

A Phase I Environmental Assessment of the KRCD CPP project site was prepared in accordance with American Society for Testing and Materials (ASTM) “Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process” (Standard Designation E 1527-05), published November 2005. The objective of the Phase I was to identify recognized environmental conditions (RECs) located either at the project site or on adjacent properties, which could present material risk of harm to public health or to the environment. A site reconnaissance was conducted on September 20, 2006. The following REC was identified in connection with the site:

Underground Storage Tank

Reportedly, one unregistered 500-gallon gasoline underground storage tank (UST) was installed onsite. The date the UST was installed is unknown. One empty 500-gallon tank that has been removed from the subsurface and set upon the ground is also located adjacent to and west of the onsite barn. Subsurface staining was observed beneath and adjacent to the UST. The former UST is believed to have been sitting on the ground for at least 15 years (Twining Laboratories, 2006). The condition of subsurface soils in the area is unknown.

In addition to the REC, the following environmental concerns were also identified in association with the KRCD CPP project site:

City of Parlier WWTP

The City of Parlier WWTP is located adjacent to the site on the north/northeast. This facility receives municipal wastewater and operates using aerated evaporation and percolation ponds



under Waste Discharge Requirements (WDRs) issued by the Regional Water Quality Control Board (RWQCB). According to RWQCB records, groundwater at this facility is approximately 55 feet below ground surface and flows in a southwesterly direction. The groundwater monitoring network consists of ten monitoring wells located at the Parlier WWTP. Groundwater quality around the WWTP site has been high in nitrogen concentrations that exceed water quality objectives. The quality of background water, upgradient of the WWTP, is also good. Field observations noted during the Phase I site reconnaissance confirmed that ponds at the WWTP are bermed to prevent surface discharges to adjoining properties. The Phase I reports that due to its proximity to the site, its status and its location hydraulically upgradient to the KRCDD CPP site, that a release from the WWTP could potentially impact the groundwater under the site.

Southeast Regional Disposal Site

The Southeast Regional Disposal Site is located adjacent to and east of the project site at 12716 East Dinuba Avenue. The facility was a class III landfill that operated between 1970 and 1990 and formerly accepted municipal waste from nearby Fresno County cities. The Fresno County Public Works Department currently operates the facility. Final closure in 1998 included the placement of a two-foot thick cap. As a corrective action to remediate groundwater pollution, 19 groundwater monitoring wells were also installed onsite. Volatile Organic Carbons (VOCs) including trichloroethane (TCA) and tetrachloroethylene (PCE) were detected at groundwater samples obtained from the wells at concentrations, which exceeded maximum contaminant levels (MCLs). Therefore, a corrective action system was initiated to remediate groundwater pollution. This corrective action system withdraws groundwater from the down-gradient boundary of the facility. The groundwater is then conveyed to a spray field where VOCs are volatilized by air stripping. The corrective action system also acts to hydrodynamically control the water table to inhibit the flow of polluted groundwater down gradient. According to RWQCB reports, the facility is effectively removing constituents of concern from the degraded groundwater. A Water Quality Protection Standard for inorganic constituents of concern has also been established at the site. According to a RWQCB inspection report, the facility is in compliance with its WDRs and there are no recorded violations. A gas extraction system is also operating to extract methane from the facility and no methane has been detected at the site since February 2005. The Phase I reports that due to its proximity to the site, the fact that groundwater has risen to the base of the facility, and its location hydraulically upgradient from the KRCDD CPP site, that a release from the facility could potentially impact the groundwater under the site.

Onsite Well and Septic Tank

A domestic water well and septic tank are reportedly associated with the onsite vacant dwelling. There was also one agricultural well and associated electrical pump observed onsite. If the water well and/or septic system are not properly abandoned, there is the potential for environmental



concern associated with the systems acting as direct conduits for contaminants to impact the groundwater under the site.

Past Agricultural Uses

Since the site has a history of agricultural use, the possibility exists that onsite soils may have been impacted by agricultural chemicals. The extent (if any) of impacts to the site is unknown.

Asbestos Containing Materials

It is unknown whether or not any of the onsite dwellings contain any asbestos containing material (ACM).

Additional information on the REC and above-noted environmental concerns is included in the Phase I Environmental Assessment, which is included as Appendix 8.9-1. The Phase I Environmental Assessment makes the following recommendations:

- Conduct soil sampling in the area of the unregistered 500-gallon UST to determine the presence or absence of subsurface impacts by petroleum hydrocarbons, including in the area of soil staining.
- Remove and dispose of the 500-gallon UST in accordance with applicable federal, state and local guidelines.
- Properly destroy/remove the domestic and agricultural wells and septic system in accordance with applicable federal, state and local guidelines prior to site development.
- Collect and analyze soil samples onsite to determine if environmentally persistent agricultural chemicals have impacted onsite soils.
- Conduct an asbestos survey of the onsite dwellings prior to any demolition. On properties with a history of agricultural use, subsurface pipelines may exist. It was common for these pipelines to contain ACMs (ex. Transite pipe). In the event that subsurface structures are encountered during development or excavation of the site, care should be exercised in determining whether or not they contain ACMs. If ACM is encountered, it should be removed, handled, transported and disposed of in accordance with applicable federal, state and local guidelines.
- Prior to site development, all miscellaneous debris, drums, and containers of unknown substances should be removed from the site and properly disposed of.

Additional information on the above-noted recommendations is also included in the Phase I Environmental Assessment, which is included as Appendix 8.9-1.



8.9.2.3 Phase II Environmental Assessment

In response to some of the recommendations in the Phase I Environmental Assessment, a limited soil investigation was conducted at the project site. Results of the soil investigation are summarized in a Phase II Environmental Assessment (Twining Laboratories, 2007). The purpose of the soil investigation was to collect soil samples for analysis of persistent agricultural chemicals as a preliminary screen to assess whether or not surface soils at the site have been impacted by former agricultural activities. As part of the investigation, soil samples were taken at six composite locations (24 samples in all) across the project site at approximate depths of one-half foot. The samples were then analyzed for persistent agricultural chemicals including organochlorine pesticides. Results of this preliminary soil screening showed no detectible concentrations of organochlorine pesticides. Additional recommendations of the Phase I Environmental Assessment, as discussed in above in Section 8.9.2.2 will be implemented as appropriate. The Phase II Environmental Assessment is included as Appendix 8.9-2.

8.9.3 ENVIRONMENTAL CONSEQUENCES - WASTE GENERATION INVENTORY

Table 8.9-1 includes a summary of the wastes produced by the KRCD CPP as well as the proposed methods of disposal.

Table 8.9-1 Waste Generation and Management KRCD CPP			
Source of Waste	Description/Composition	Quantity Generated	Disposal Method
Construction	Debris – e.g., Wood, Concrete, Metal	50 Cubic Yards/Month	Transported to offsite landfill
Emissions Control System	Spent Selective Catalytic Reduction and Oxidation Catalyst Blocks	Varies – partial catalyst replacement approximately every 3-5 Years.	Recycled to catalyst suppliers
Drilling Mud	Drill cuttings, drilling additives (bentonite), water	1000-1500 cubic yards	Transported to offsite landfill
Zero Liquid Discharge (ZLD) System	Dissolved salts from incoming supply water	Solids 1500 Tons/Year	Transported to offsite landfill or treatment facility
Sanitary Drains	Sanitary Waste	50,000 Gallons/month	Parlier WWTP
Closed Loop Cooling (Chiller) System	Propylene Glycol	500 Gallons/Year	Transferred to/from drums and transported offsite for Recycling
Tertiary System Filters	Solids from incoming recycled water	3,000,000 gallons/month	Parlier WWTP



Table 8.9-1 Waste Generation and Management KRCDD CPP			
Source of Waste	Description/Composition	Quantity Generated	Disposal Method
Equipment Lubrication Systems	Waste Oils	Not routinely generated	As required, transferred to/from drums and transported off-site for recycling
Transformers	Waste Oil	Not Routinely Generated	As required, transferred to/from to drums and transported off-site for recycling
Fuel Gas System	Fuel Gas Condensate	200 Gallons/Month	Periodic accumulation of oils in fuel gas filters. Transported off-site for recycling
Municipal Solid Waste	Debris – e.g., Paper, Plastic, Food	20 Cubic Yards/Month	Transported to offsite landfill

8.9.3.1 Construction Phase

The construction of the KRCDD CPP will generate wastes typical for the construction of natural gas-fired power plants. Wastes will include both nonhazardous and hazardous materials. The construction of the offsite linear facilities, including the electric transmission line, natural gas and water pipelines will result in the generation of both nonhazardous and hazardous wastes. The demolition of the onsite structures, which include a vacant rural dwelling, detached garage and barn will also result in the generation of nonhazardous and potentially hazardous wastes.

Non-Hazardous Wastes

Solid wastes generated from construction activities will include paper, wood, glass and plastic generated from packing material, waste lumber, insulation, concrete and empty non-hazardous containers. Demolition and removal of the onsite vacant rural dwelling, detached garage and barn will also generate waste materials. The management of these wastes will be the responsibility of the construction contractor(s). Waste materials will be recycled where practical. Wastes that cannot be recycled will be placed in onsite dumpsters and removed and properly disposed of on a regular basis by Sunset Waste Systems, the waste hauler servicing the area of the county where the KRCDD CPP is located.

Also, according to the results of the Phase I Environmental Assessment, there is the potential that subsurface soils were impacted by petroleum hydrocarbons due to the presence of a UST which has been sitting on the soil surface for many years. Therefore, there is the potential that contaminated soils may have to be removed from the site. Results of the limited Phase II soil analysis concluded it does not appear that agricultural chemicals have impacted onsite soils.



Environmental Data Resources, Inc. (EDR) also conducted a corridor study of the KRCD CPP project area which included searches of online databases that document hazardous materials records. Results of the EDR study showed the potential for encountering contaminated soils during excavation for the gas pipeline and transmission pole foundations. A copy of the EDR corridor study is included as Appendix 8.12-3 to Section 8.12, Soils. If contaminated soils are encountered, they will be characterized to determine appropriate soil handling and disposition protocols and managed in accordance with applicable LORS. The soils may then be recycled or disposed of as a non-hazardous waste at a Class II landfill or soil recycling facility or disposed of as a hazardous waste at a Class I landfill.

The proposed natural gas pipeline route will require approximately 16 crossings of road and canals. It is assumed that some of the crossings will be installed by trenching and the majority of the crossing will be installed by boring. The installation of the natural gas pipeline will also require a crossing of the Kings River, which will be installed using horizontal directional drilling (HDD) to avoid impacts to the river, its bed or its banks. Drilling mud, consisting of nontoxic bentonite clay will be used to both lubricate and cool the drilling bit. Any wastes generated as a result of borings or HDD will be disposed of at a Class II or Class III landfill.

Nonhazardous wastewater will also be generated during construction activities and include sanitary wastewater, equipment wash water, and storm water runoff. Wastewater will also be generated from the hydrostatic testing of the natural gas pipeline. Hydrostatic testing water will also be collected, tested and appropriately disposed of in accordance with applicable permitting requirements. Sanitary wastewater will be collected in portable, self-contained toilets. Equipment wash water will be contained at specifically designated wash areas and then disposed of off-site. Storm water runoff will be managed in accordance with a General Construction Permit and approved Storm Water Pollution Prevention Plan (SWPPP) that will be approved by the appropriate regulatory agencies prior to construction. Additional information on the requirements of the SWPPP is included in Section 8.5, Water Resources. A draft outline of the SWPPP is included as Appendix 8.5-3 in Section 8.5, Water Resources.

Non-Hazardous Waste Disposal

Nonhazardous solid wastes (i.e., municipal solid waste or garbage) generated as a result of the KRCD CPP will be recycled or disposed of in an approved Class III landfill. Several non-hazardous solid waste disposal and recycling facilities are located in the general area of the KRCD CPP as shown below in Table 8.9-2. These facilities will accept non-hazardous wastes, including multiple types of construction wastes.



Table 8.9-2 Solid Waste Disposal and Recycling Facilities KRCD CPP						
Waste Disposal or Recycling Site	Class Type ¹	Permitted Capacity	Maximum Capacity & Frequency	Remaining Capacity	Cease Operation Date	Waste Types
City of Clovis Landfill 15679 Auberry Road Fresno, CA 93626	III	2.6 million cubic yards	354 tons per day	100,00 cubic yards as of April 2006	8/31/2017	Industrial, mixed municipal
Coalinga Disposal Site 30825 Lost Hills Road Coalinga, CA 93210	III	3.3 million cubic yards	200 tons per day	1.9 million cubic yards as of July 2005	12/31/2029	Agricultural, Construction, Demolition, Dead Animals, Industrial, Mixed Municipal, Tires
American Avenue Disposal Site 18950 W. American Avenue Tranquillity, CA 93668	II & III	32 million cubic yards	2,200 tons per day	29.4 million cubic yards as of July 2005	8/31/2031	Agricultural, Asbestos, Construction, Demolition, Industrial, Mixed Municipal, Tires, Tire Shreds
American Remedial Technologies 2680 Imperial Highway Lynwood, CA 90262	III	300,000 tons per year	25,000 tons per month	Not available	Not available	Contaminated Soils
Kettleman Hills Landfill Chemical Waste Management Inc. 35251 Old Skyline Road Kettleman City, CA 93239	I & II	10.7 million cubic yards	8,000 tons per day	6 million cubic yards	Not available	Contaminated Soils, Industrial
Clean Harbors Buttonwillow LLC 2500 West Lokern Road Buttonwillow, CA 93206	I	14.3 million cubic yards	10,482 tons per day	Not available	1/1/2040	Contaminated Soils, Industrial
Source: California Integrated Waste Management Board, 2006 Definitions: Class I landfills - Accept certain municipal liquid and solid hazardous wastes. Class II landfills - Do not take hazardous waste, accept some designated wastes. Class III landfills - Accept solid waste that is not expected to produce substances that may cause an adverse effect.						



According to the results of the Phase I Environmental Assessment, there is the potential that subsurface soils were impacted by petroleum hydrocarbons due to the presence of a UST, which has been sitting on the soil surface for many years. Therefore there is the potential that contaminated soils may have to be removed from the site. As listed in Table 8.9-2, there are several soil treatment and soil recycling facilities in California that will accept these types of wastes. The acceptable levels for treatment and recycling are established by the individual facility and will be determined and complied with prior to disposal.

Hazardous Wastes

Small quantities of hazardous wastes will be generated during construction and will include liquid wastes (flushing and cleaning fluids) and solvents, waste paint and oil, oily rags, waste batteries and used welding materials. Based on the results of the Phase I, there is also the potential that the demolition/removal of the onsite structures could contain ACMs or lead-based paint. Existing structures containing lead-based paint will be removed and disposed of at an appropriate disposal facility. An asbestos survey of the onsite dwellings will also be conducted prior to demolition. There is also the potential that subsurface pipelines could contain ACM. In the event that subsurface structures are encountered during development or excavation of the site, an asbestos survey will be conducted to determine whether or not they contain ACM. Based on the results of any surveys, a licensed asbestos abatement contractor will manage any ACM. Any ACM will be removed, handled, transported and disposed of in accordance with applicable federal, state and local guidelines.

Hazardous Waste Disposal

The construction contractor will be considered the generator of any hazardous construction waste and will be responsible for proper handling of hazardous wastes in compliance with all applicable LORS. The LORS include appropriate training, accumulation limits and times, reporting and recordkeeping. Hazardous wastes will then be transported by a permitted hazardous waste transporter and disposed of at an approved Class I landfill. Several hazardous solid waste disposal facilities are located in the general area of the KRCDD CPP as shown above in Table 8.9-2.

The closest commercial hazardous waste facility to the KRCDD CPP is the Kettleman Hills Landfill, which is operated by Chemical Waste Management Incorporated. This landfill is located approximately three miles from Kettleman City in Kings County. The Kettleman Hills Landfill accepts Class I, II and III wastes, has no capacity restrictions and accepts virtually all solid, semisolid and liquid hazardous wastes, with the exception of biological agents, infectious wastes, radioactive materials, compressed gases and explosives (Department of Toxic Substance Control (DTSC), 2003).



Other Class I landfills include the Buttonwillow Landfill, which is operated by Clean Harbors, LLC and is located in Kern County. Buttonwillow Landfill accepts both non hazardous waste and is permitted as a Class I landfill.

8.9.3.2 Operation and Maintenance Phase

Ongoing O&M of the KRCDD CPP will generate wastes resulting from routine O&M activities typical of a natural gas-fired power plant. Varying quantities of non-hazardous and hazardous solids and liquids will be generated periodically as discussed below.

Non-Hazardous Wastes

The majority of solid wastes will include rags, turbine air filters, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, typical refuse generated by workers and small office operations and other miscellaneous solid wastes. The quantity generated is estimated to be approximately 50 cubic yards per year.

Zero Liquid Discharge Treatment System

The KRCDD CPP will have primary and secondary wastewater collection systems. The primary wastewater collection system will collect process wastewater from all of the equipment, including the heat recovery steam generators (HRSGs), cooling tower, and water treatment equipment. Process wastewater will be reclaimed and reused, to the extent possible, in the ZLD system. The leftover concentrated solids solution from the ZLD system crystallizer will be treated in a filter press to remove excess water leaving a dry (less than ten percent water) salt precipitate (cake). The cake will be non-hazardous and will be taken off-site for disposal in a municipal landfill. Expected annual waste generation is 1500 tons per year.

Non-Hazardous Wastewater

Water balance diagrams for the KRCDD CPP are included as Figures 2-12 and 2-13 in Chapter 2, Project Description. These diagrams illustrate the expected waste stream and flow rates for the project. The wastewater collection system will collect sanitary wastewater from sinks, toilets and other sanitary facilities to be discharged to the Parlier WWTP, which is adjacent to the project site on the north.

Plant Drain and Oil/Water Separator

General plant drains will collect area washdown, sample drains, and drainage from equipment areas. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping and routed to the primary wastewater collection system. Drains that potentially could contain oil or grease will first be routed through an oil/water separator. Water from the primary wastewater collection system will be reclaimed to the cooling tower basin. Wastewater from



combustion turbine generator water washes will be collected in a holding tank. If cleaning chemicals were not used during the water wash procedure, the wastewater will be discharged to the oil/water separator. Wastewater containing cleaning chemicals will be trucked offsite for disposal at an approved wastewater disposal facility.

Hazardous Wastes

Hazardous wastes generated by the KRCDD CPP will include waste lubricating oil, used oil filters, used catalysts from the selective catalytic reduction (SCR) system, oxidation catalysts, and chemical cleaning wastes. Several methods will be used to properly manage and dispose of hazardous wastes generated by the KRCDD CPP. Waste lubricating oil will be recovered and reclaimed by a waste oil recycling contractor. Spent lubrication oil filters will be disposed of in a Class I landfill. Spent SCR and oxidation catalysts will be reclaimed by the supplier or disposed of in accordance with regulatory requirements. Workers will be trained to handle hazardous wastes generated at the site.

Chemical cleaning wastes will consist of alkaline and acid cleaning solutions used during pre-operational chemical cleaning of the HRSGs, acid cleaning solutions used for chemical cleaning of the HRSGs after the units are put into service, and turbine wash and HRSG fireside washwaters. These wastes, which are subject to high metal concentrations, will be temporarily stored onsite in portable tanks, and disposed of offsite by the chemical cleaning contractor in accordance with applicable regulatory requirements.

Hazardous wastes that will be generated during O&M of the KRCDD CPP are summarized in Table 8.9-3.

Hazardous Waste Stream	Estimated Quantity	Method of Disposal
Empty Hazardous Materials Containers	500 lbs/yr	Recycle
Lubricating Oils	300 lbs/yr	Cleaned up using sorbent and rags and disposed of by a certified oil recycler
Lubricating Oil Filters	500 lbs/yr	Recycled by a certified oil recycler
Spent Batteries	100 lbs/yr	Recycle
Laboratory Analysis Waste	250 gals/yr	Recycled by a certified recycler
SCR Catalyst Units	700 lbs every 5-7 years	Recycled by an SCR manufacturer or disposed of in a Class I landfill



Table 8.9-3 Hazardous Wastes Generated KRCD CPP		
Hazardous Waste Stream	Estimated Quantity	Method of Disposal
Carbon Monoxide (CO) Catalyst Units	700 lbs every 5-7 years	Recycled by a CO manufacturer
Oily Rags	200 lbs/yr	Recycled by a certified oil recycler
Oil Sorbents	150 lbs/yr	Recycled or disposed of by a certified oil recycler
Cooling Tower Sludge	2 tpy	Disposal in a Class II landfill if nonhazardous or disposal in a Class I landfill in hazardous
Acronyms: lbs/yr - pounds per year gals/yr – gallons per year tpy – tons per year lbs - pounds		

Hazardous Waste Disposal

Hazardous wastes will be collected by a licensed hazardous waste hauler and disposed of at an appropriate hazardous waste facility. Hazardous wastes will be transported offsite using a hazardous waste manifest. Copies of manifest reports, waste analyses, exception reports, destruction certifications, etc. will be kept onsite and accessible for inspection for three years.

8.9.4 WASTE MANAGEMENT METHODS AND MITIGATION MEASURES

The handling and management of wastes generated by the KRCD CPP will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The first priority will be to reduce the quantity of waste generated by implementing appropriate pollution prevention methods (i.e. high-efficiency cleaning). The next level of waste management will involve the reuse or recycling of wastes (i.e. used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste non-hazardous (i.e. neutralization). Finally, offsite disposal will be used to dispose of residual wastes that cannot be reused, recycled or treated. The following sections present methods for managing both non-hazardous and hazardous wastes generated by the KRCD CPP.

8.9.4.1 Construction Phase Impacts

Non-hazardous solid waste generated during KRCD CPP construction activities will be collected in onsite dumpsters and periodically collected up by Sunset Waste Systems, the waste hauler servicing the area of the county where the KRCD CPP is located. Waste will then be taken to one of Sunset Waste Systems Fresno County transfer stations for ultimate disposal in a Fresno

County landfill (see Table 8.9-2). Sunset Waste Systems will also collect recyclable materials from the site. These materials will then be transported to one of their three Fresno County transfer stations where recyclables are processed (i.e., either in the cities of Fresno, Visalia or Delano).

Wastewater generated during construction will include sanitary wastes, and potentially equipment washwater and storm water runoff. Sanitary wastes during construction will be collected in portable self-contained toilets. Equipment washwater will be contained in designated wash areas and will then be disposed of offsite. Storm water runoff will be managed in accordance with a General Construction Permit and a SWPPP, which will be prepared prior to construction. Additional information on the requirements of the SWPPP and a draft outline of the plan are included in Section 8.5, Water Resources and Appendix 8.5-3, respectively. 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 (i.e., 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 may be used whenever possible to minimize the quantity of hazardous waste generated. The construction contractor will be considered the generator of any hazardous construction waste and will be responsible for proper handling of hazardous wastes in compliance with all applicable LORS. The LORS include appropriate training, accumulation limits and times, reporting and recordkeeping. The waste will then be transported by a permitted hazardous waste transporter and disposed of at an approved Class I landfill. Several hazardous solid waste disposal facilities are located in the general area of the KRCDD CPP as shown above in Table 8.9-2.

Any soils removed from site and any liquid wastes generated during construction will be characterized to determine whether or not they require disposal as a hazardous or non-hazardous waste. Best management practices (BMPs) including stockpile liners, stockpile covering, secondary containment, and truck loading will be implemented as appropriate based on applicable regulatory requirements and approved management plans.

Any lead-based paint or ACMs discovered during demolition of any of the onsite dwellings will also be removed and disposed of at an appropriate disposal facility in accordance with applicable federal, state and local guidelines.



8.9.4.2 Operation and Maintenance Phase Impacts

Both nonhazardous solid wastes as well as varying quantities of liquid and solid hazardous wastes will be generated during ongoing KRCDD CPP O&M. Handling and mitigation of such wastes is described below.

Nonhazardous Wastes

Sanitary sewer disposal for the KRCDD CPP will be provided by the City of Parlier WWTP via a sewer interconnection at the fenceline of the project site.

Nonhazardous solid waste will be collected by Sunset Waste Systems and taken to one of its Fresno County transfer stations for ultimate disposal in a Fresno County landfill. Whenever possible, recycling will be implemented to minimize the quantity of nonhazardous wastes that must be disposed of in a landfill.

Hazardous Wastes

To avoid the potential effects on human health and the environment from the handling and disposal 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 also be employed:

- If hazardous wastes are stored onsite for more than 90 days a hazardous waste storage extension application or proper permit will be obtained.
- 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 remain accessible for inspection for at least three years.
- Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization; and
- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever possible, and wastes will be recycled whenever possible.



Specifically, hazardous waste handling will include the following practices, which 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 T&J Arco Station in the City of Parlier. Used oil filters and oily rags will be recycled; and
- Used SCR and oxidation catalysts will be recycled by the supplier, if possible, or disposed of in a Class I landfill as shown in Table 8.9-2.

Chemical cleaning wastes will consist of alkaline cleaning solutions used during combustion turbine and pipeline wash. These wastes, which are subject to high metal concentrations, will be stored temporarily onsite in portable containers and disposed of offsite, in accordance with applicable regulatory requirements. Disposal may consist of offsite treatment, recovery of metals, and/or landfilling.

8.9.4.3 Cumulative Impacts

The KRCDD CPP facility will generate nonhazardous solid waste that will add to the total waste generated in both Fresno County and in California. However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by the project. It is estimated that the KRCDD CPP will generate approximately 200 tons of solid waste during construction, ten tons during demolition/removal of onsite structures and about 1525 tons a year from ongoing O&M (including approximately three tons of hazardous waste). Compared to the total amount of solid waste landfilled in Fresno County in the year 2005 of 627,729 tons, the KRCDD CPP contribution will represent less than one-half of one percent of total county waste disposal (California Integrated Waste Management Board, 2007). Also, as shown in Table 8.9-2, the Class I, II and III landfills in the in area of the KRCDD CPP have adequate recycling and disposal capabilities to handle the waste generated by the project in addition to waste generated by other existing facilities. Because of these adequate recycling and disposal capabilities and capacities, the impact of the KRCDD CPP on solid waste recycling and disposal capacity is not significant.

Hazardous waste generated will consist of waste oil, filters, SCR and oxidation catalysts, and fluids used to clean the 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, as shown in Table 8.9-2, therefore, the impact of the KRCDD CPP on hazardous waste recycling, treatment, and disposal capability is not significant.

8.9.4.4 Facility Closure

When the KRCDD CPP is closed, both nonhazardous and hazardous wastes must be properly handled. Closure can be temporary or permanent. Temporary closure will be for a period of time greater than the time required for normal maintenance. 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 will consist of a cessation in operations with no intent to restart and could be due to 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.

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 California Energy Commission (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 prior to project startup. 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 below in Section 8.9.5.

Where the temporary closure is in response to plant 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 a Risk Management Plan (RMP), as described further in Section 8.8, Hazardous Materials. Procedures include methods to control releases, notification of applicable authorities and the public, emergency response, and training for plant 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.



Permanent Closure

The planned life of the KRCD CPP is 30 years, though operation could be longer. When the plant 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 all project components. 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 decommissioning activities.

8.9.4.5 Monitoring Program

Waste management impacts caused by construction and O&M of the KRCD CPP are expected to be minimal, and extensive monitoring programs will not be required. Generated waste, both nonhazardous and hazardous, will be monitored during construction and O&M in accordance with the monitoring and reporting requirements mandated by the regulatory permits to be obtained.

8.9.5 LAWS, ORDINANCES, REGULATIONS AND STANDARDS

The handling of both hazardous and nonhazardous wastes at the KRCD CPP will be governed by federal, state, and local LORS. The applicable LORS 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 hazardous and nonhazardous wastes. The applicable LORS are summarized below in Table 8.9-4.

Table 8.9-4 Waste Management LORS KRCD CPP		
Regulation/Program	Description	Project Applicability/ AFC Section Reference
Federal		
Resource Conservation and Recovery Act (RCRA), Title 40 Code of Federal Regulations (CFR), Subtitle D	RCRA's primary goals are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. RCRA Subtitle D identifies state and local	All solid wastes from the KRCD CPP will be collected and disposed by a qualified collection company.



Table 8.9-4 Waste Management LORS KRCD CPP		
Regulation/Program	Description	Project Applicability/ AFC Section Reference
	governments as the primary planning entities for regulating, and implementing the management of non-hazardous solid waste, such as household garbage and non-hazardous industrial solid waste.	See Section 8.9.3 and Table 8.9-2
RCRA Subtitle C	Establishes a federal program to manage hazardous wastes from cradle to graves to ensure that hazardous waste is handled in a manner that protects human health and the environment.	Qualified contractors will handle all hazardous wastes generated by the KRCD CPP. See Section 8.9.3
Clean Water Act (CWA)	Protects the nation’s water by restoring and maintaining the water’s chemical, physical and biological properties and regulated discharge of wastewater and pollutants into Waters of the United States.	The KRCD CPP will operate as a zero-discharge facility and will not discharge industrial wastewater to the surface or the ground. Sanitary sewer will be discharged to the adjacent Parlier WWTP. See Section 8.9.4
State		
California Code of Regulations (CCR), Title 22, §66262.34	Regulates the onsite accumulation of hazardous waste to 90-days without a permit.	If store hazardous wastes are onsite for more than 90-days a hazardous waste storage extension application or permit will be obtained. See Section 8.9.4.2
California Integrated Waste Management Act (CIWMA), Public Resources Code (PRC) §40000 et seq.	Implements RCRA regulations for non-hazardous wastes and controls solid waste collectors, recyclers and depositors with the intention of reducing, recycling and reusing solid waste generated in an efficient and cost effective manner and to conserve water, energy and other natural resources.	Solid waste generated by the KRCD CPP be will be handled by qualified contractors in conformance with the CIWMA. See Section 8.9.3
California Health and Safety Code, Sections 25100, et. seq. - Hazardous Waste Control Law (HWCL)	The HWCL empowers the DTSC, a division of Cal-EPA to administer the state's hazardous waste program and implement the federal program in	Hazardous waste generated by the project will be will be handled by qualified contractors in conformance



Table 8.9-4 Waste Management LORS KRCD CPP		
Regulation/Program	Description	Project Applicability/ AFC Section Reference
	California. The HWCL controls the storage, treatment and disposal of hazardous wastes.	with the HWCL. See Sections 8.9.3 and 8.9.4
Porter-Cologne Water Quality Control Act, California Water Code Section 13000 et seq.	Controls the discharge of wastewater to surface and groundwater and delegates the control of pollutant discharges to surface and groundwater from the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) and identifies water quality criteria to protect the state’s waters.	The KRCD CPP will operate as a zero-discharge facility and will not discharge industrial wastewater to the surface or the ground. Sanitary sewer will be discharged to the adjacent Parlier WWTP See Sections 8.9.3 and 8.9.4
Local		
Fresno County Department of Community Health (FCDCH) - Environmental Health Division	Provides primary enforcement responsibility for regulatory functions covering hazardous waste generators.	Will ensure that the KRCD CPP complies with applicable Fresno County provisions. See Section 8.9.5.3
FCDCH - Environmental Health Division	Regulates the construction, repair and removal/closure of a UST through a permit process.	Any USTs located buried on the KRCD CPP project site will be removed in accordance with applicable provisions. See Sections 8.9.2
Fresno County General Plan – Public Facilities Element	Discusses public facilities including water, sewage collection and treatment, drainage and solid waste.	Will ensure that the KRCD CPP complies with applicable Fresno County provisions. See Section 8.9.5.3

8.9.5.1 Federal

The Resource Conservation and Recovery Act (RCRA), which was enacted by Congress in 1976, has a primary goal to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. RCRA regulates the management of solid waste (e.g., garbage), hazardous waste, and USTs holding petroleum products or certain chemicals. The RCRA provides the basic framework for federal regulation of nonhazardous and hazardous waste. RCRA’s Subtitle D establishes state

responsibility for regulating nonhazardous and hazardous wastes, while Subtitle C controls the generation, transportation, storage and disposal of hazardous waste through a comprehensive “cradle to grave” system of hazardous waste management techniques and requirements. The United States Environmental Protection Agency (USEPA) is responsible for implementing the law, and the implementing regulations are set forth in 40 CFR 260, et seq. The law allows USEPA to delegate the administration of the RCRA programs to various states provided that state programs meet the federal requirements. California’s program was authorized by USEPA on August 1, 1992, and the California EPA’s DTSC is responsible for administering the program.

The Clean Water Act (CWA) 33 USC, Section 1251 et seq. provides the regulatory framework for managing the discharge of wastewater to surface waters. The USEPA has nationwide authority to implement the CWA, but states may be authorized to administer various aspects of the National Pollutant Discharge Elimination System (NPDES) as well as pretreatment programs. California is authorized under the CWA to administer the NPDES program, implement publicly owned treatment works’ pretreatment programs, oversee federal facilities, and issue general permits.

8.9.5.2 State

The DTSC has the primary responsibility for enforcement and implementation of HWCLs in California and will be the implementing agency for compliance with CCR Title 22. Title 22 regulates the accumulation of hazardous waste on a site. Hazardous wastes cannot be stored onsite for more than 90 days without an approved hazardous waste storage extension application or without obtaining the proper permit.

Nonhazardous solid waste is regulated by the CIWMA, PRC, Section 40000 et seq. This law provides a system of solid waste management 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, to protect the environment, and to improve landfill safety. In Fresno County, it is the responsibility of the Fresno County Local Enforcement Agency (LEA) is to protect the health, safety and well-being of the public and to preserve and improve the quality of the environment by assuring proper storage and disposal of solid waste. The authority to act as the LEA was given to the Fresno County Department of Community Health (FCDCH), Environmental Health System by the Fresno County Board of Supervisors in the form of an official designation on March 3, 1992.

The RCRA allows states to develop their own programs to regulate hazardous waste. California has developed its own program by passage of the HWCL, California Health and Safety Code,



§ 25100 et seq. The California HWCL is the State's equivalent to RCRA and closely parallels RCRA by regulating the generation, storage, transportation, treatment and disposal of hazardous waste in the State. The primary authority for enforcement of HWCL and RCRA itself lies with the State DTSC, which is a department of the California Environmental Protection Agency (EPA). However, the FCDCH, Environmental Health Division provides most regulatory functions covering hazardous waste generators.

8.9.5.3 Local

As stated above, the purpose of the Fresno County LEA is to protect the health, safety and well-being of the public and to preserve and improve the quality of the environment by assuring proper storage and disposal of solid waste; to minimize the presence of vectors related to solid waste handling and disposal methods; and to respond to public complaints relating to the accumulation, storage, collection, processing and disposal of solid waste in Fresno County. The FCDCH - Environmental Health Division regulates the construction, repair and removal/closure of underground storage tanks through a permit process.

8.9.6 INVOLVED AGENCIES AND CONTACTS

Several agencies, including the USEPA at the federal level and California EPA at the state level regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by the KRCDD CPP. The hazardous waste laws, however, are administered and enforced primarily through local agencies. For the KRCDD CPP, the primary agency for hazardous waste issues will be the FCDCH - Environmental Health Division, which is the Certified Unified Program Agency (CUPA) for the project area (see Section 8.8, Hazardous Materials for additional discussion). The agencies and persons to contact for each type of waste are shown in Table 8.9-5.

Agency	Contact Person, Title and email	Phone Number
FCDCH – Environmental Health Division 1221 Fulton Mall Fresno, CA 93721	Note 1 dch@co.fresno.ca.us	(559) 445-3271
Fresno County Fire Protection District (FCFPD) Fire Station 83 - Selma 11500 E. Mountain View Selma, CA 93662	Jeremiah Wittwer, Firefighter	(559) 896-3378



Table 8.9-5 List of Waste Management Agency Contacts KRCDD CPP		
Agency	Contact Person, Title and email	Phone Number
DTSC Clovis Field Office 1515 Tollhouse Road Clovis, CA 93611-0522	Dale Hoverman, Supervising Environmental Scientist dhoverma@dtsc.ca.gov	(559) 297-3901
Notes: 1. The Fresno Department of Community Health declined to provide individual contact information		

8.9.7 REQUIRED PERMITS AND SCHEDULES

Table 8.9-6 lists the hazardous waste-related permits that will be required for the KRCDD CPP.

Table 8.9-6 Waste Management Permit and Schedules KRCDD CPP		
Agency	Permit/Applicability	Schedule for Permit
FCDDCH	Permit to abandon and remove a UST.	Prior to tank removal.

8.9.8 REFERENCES

California Integrated Waste Management Board, Solid Waste Information System. 2007. 2005 Landfill Summary Tonnage Report. 2006. Website at:
<http://www.ciwmb.ca.gov/Landfills/Tonnages>

California Integrated Waste Management Board, Solid Waste Information System. 2006. Internet site at: <http://www.ciwmb.ca.gov/SWIS/Search.asp>.

Fresno County Department of Community Health. 2007. Information on Fresno County Landfills. Internet Site at:
<http://www.fresnohumanservices.org/CommunityHealth/EnvironmentalHealth/SolidWaste>
[e](#).

Fresno County Department of Planning and Public Works. Solid Waste Collection Services. Website at: <http://www.co.fresno.ca.us/4510/4360/SolidWaste.htm>.

Fresno County General Plan, October 2000. Internet site at:
http://www.co.fresno.ca.us/4510/4360/General_Plan/Background_Report_June04.pdf.

Rutan attorneys at Law. 2007. Information on Waste Management Regulations. Internet site:
<http://www.rutan.com>.



Sunset Waste Systems. 2007. Article entitled - Proposals for interim recycling contract shared with council members last week. Website at: <http://www.pcquote.com>

State of California Used Oil Recycling Program. 2007. Internet site:
<http://www.ciwmb.ca.gov/UsedOil/Centers>.

Thermal Remediation Solutions. 2007. Information on soil recyclers. Internet site at: <http://trs-azusa.com/>.

USEPA. 2007. Internet site at: <http://www.epa.gov/region09/waste/dsummary.htm>.

