

CHAPTER 21

HAZARDOUS MATERIALS

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This section assesses chemical usage, energy consumption, and potential hazards that may arise as a result of the proposed project. This section summarizes a hazardous waste site database search conducted for the project area.

ENVIRONMENTAL SETTING

Numerous sites in the Palmdale area generate, use, or store hazardous substances, including USAF Plant 42 and the PWRP. The USAF Plant 42 operations include assembly of test aircraft and pilot training. Hazardous materials and wastes used and generated on site include various petroleum products, paints, solvents, and corrosives.¹ USAF Plant 42 is listed on the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as a potentially contaminated site.

Chemical Usage

Chemicals used in the wastewater treatment process at the PWRP include aluminum sulfate (alum), ammonia, ferrous chloride, and sodium hypochlorite (NaOCl). These process chemicals are stored in above-ground storage tanks on site. In addition to process chemicals, District No. 20 also maintains several above-ground storage tanks for propane, diesel, and gasoline. Table 21-1 summarizes the current and projected chemical quantities used at the PWRP for the following years: 2004, 2014, and 2025. Projected chemical usage was estimated assuming that quantities would increase commensurate with projected flow rates. Chemicals are delivered to the PWRP on a regular basis.

Primary through tertiary treatment and disinfection require the storage and use of the following chemicals.

Table 21-1
Current and Projected Average
Annual Chemical Usage (gallons)

	YEAR 2004	YEAR 2014	YEAR 2025
Process Chemicals			
Alum	----	28,000	40,000
Ammonia Hydroxide	----	30,000	45,000
Anionic Polymer	----	100,000	130,000
Cationic Polymer	----	750,000	1,000,000
Ferric Chloride	----	170,000	230,000
Ferrous Chloride	40,000	135,000	190,000
Sodium Bisulfite	----	210,000	300,000
Sodium Hypochlorite	125,000	500,000	700,000
Other Chemicals			
Propane	200 ^c	300	400
Diesel	38,000	41,000	41,000
Gasoline	11,000	12,000	12,000

Source: District No. 20.

- **Aluminum sulfate**, commonly known as alum, is a metal coagulant that enhances sedimentation. It is used during the tertiary treatment process in the final sedimentation step. Alum is a grayish-white, crystallized solid.
- **Ammonia** is used seasonally in conjunction with NaOCl in the disinfection process. In the event of high nitrogen levels, ammonia is added to induce production of chloramines, which aids disinfection. In the event of a spill, ammonia can vaporize into the air, remaining low to the ground. Low-lying ammonia clouds can be hazardous to nearby areas. The PWRP utilizes aqueous ammonia which is less volatile than other forms of ammonia such as anhydrous ammonia.
- **Ferric chloride** acts as a coagulant in advanced primary treatment. It is a noncombustible, corrosive liquid that is irritating to unprotected skin and mucous membranes. Inhalation risks are low due to its low vapor pressure. Ingestion may cause

¹ U.S. EPA, Office of Wastewater Management, <http://cfpub.epa.gov/s-percpad/cursites/scrchrs/lt.efm>.

nausea and vomiting. It is stable under normal use and storage. Spills are neutralized with lime, soda ash, or sodium bicarbonate. Although ferrous chloride is not listed as an acutely hazardous material, it can become dangerous if heated to decomposition or on contact with acids or acid fumes, when it can emit toxic chloride fumes.

- **Sodium Hypochlorite** (NaOCl) is a liquid form of chlorine. NaOCl is used as a chlorination technique for disinfection purposes. NaOCl solutions are used in place of gaseous chlorine, an acutely toxic chemical. NaOCl solutions are unstable and some chlorine vapor can be released in the event of a spill. Chlorine vapor production from using NaOCl is minimal and poses minimum public health risk in comparison to using pressurized gaseous chlorine. NaOCl is stored in large tanks and fed using metering pumps to control chemical dosage. Because NaOCl degrades with time, the volume in storage must be balanced by the amount used.

Integrated Emergency Response Program

In accordance with federal Occupational Safety and Health Administration regulations, District No. 20 has implemented an Integrated Emergency Response Plan and an Injury and Illness Prevention Program applicable to each of the wastewater treatment facilities. The latter includes a Business Management Plan that requires District No. 20 to provide a list of hazardous materials stored on site to the local fire department.

Hazardous Waste Disposal

Hazardous wastes generated on site include by-products of the laboratory analysis methods. These spent chemicals include volatile organic chemicals. No other hazardous materials are generated at the PWRP. The small quantity of hazardous materials from the laboratory facility is collected and disposed of by a licensed hazardous waste hauler.

REGULATORY BACKGROUND

Hazardous materials handling is subject to numerous laws and regulations at all levels of government. Federal and state laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and in the event that such materials are accidentally released into the environment, to prevent or to mitigate injury to human health or the environment. A few of the requirements pertaining to the operations of District No. 20 are included below.

Worker safety is regulated through the federal OSHA as well as at the state level, through Cal OSHA) Federal OSHA, established in CFR Title 29, requires 40 hours of training for hazardous materials operators, plus eight hours of refresher training per year. The training includes personal safety, hazardous materials storage and handling procedures, and emergency response procedures.

The Business Plan Act requires that businesses that store hazardous materials on site prepare an inventory and submit it to local health and fire departments.

The U.S. Department of Transportation (DOT) regulates hazardous materials transportation. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials emergencies are the CHP and local fire departments.

Transport of Hazardous Materials

The transport of hazardous materials and explosives through Palmdale is regulated by the California Department of Transportation (Caltrans). SR-14 and SR-138 allow vehicles transporting hazardous materials/wastes. Table 21-2 identifies designated truck routes within the City of Palmdale. Figure 13-2 shows these routes on a regional map. The City ordinance regulates vehicles exceeding 10,000 pounds gross weight and prohibits their use on undesignated city streets, except when delivering or otherwise servicing

uses on such streets. City streets and County areas are generally not designated as hazardous materials/wastes transportation routes, but a permit may be granted on a case-by-case basis by the city or County. Transporters of hazardous waste are required to be certified by Caltrans and manifests are required to track the hazardous waste. The Los Angeles County Fire Department is responsible for responding to hazardous materials accidents at all locations within the city, except at USAF Plant 42, where the Air Force Fire Department is the responsible agency.²

**Table 21-2
Designated Truck Routes**

A	10 th Street West from Avenue P to Avenue M
B	Sierra Highway from SR-14 to Avenue M
C	50th Street East from Palmdale Boulevard. to Avenue M
D	Avenue M from the SR-14 to 50th Street East
E	Avenue P from 10th Street West to 50th Street East
F	City Ranch Road, Tierra Subida, Rayburn Road, and Avenue R from the Palmdale Dump to Sierra Highway
G	Avenue S from SR-14 to Sierra Highway
H	SR-138 from Sierra Highway to Fort Tejon Road
I	Avenue T from Fort Tejon Road to 90th Street East

Source: City of Palmdale, General Plan, 1993.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Significance criteria under CEQA Guidelines state that a project will normally have a significant effect on the environment if it will create a potential public hazard, involve the use, production, or disposal of materials that pose a hazard to people, animals, or plant populations in the area affected, or if it would interfere with emergency response plans or emergency evacuation plans with regard to hazardous materials and chemicals.

Impact 21-1: The project will result in a minimal increase in chemicals stored including pesticides and could encounter contaminated soils during excavation activities.

The project will require storage and use of additional amounts of a corrosive chemical solution of NaOCl (bleach). This solution will be used to disinfect effluent from the PWRP. NaOCl does not present a potential for fire or explosion, but does present a risk of release through accidental spill. To ensure safe transportation of the solution, the transporter will be required to conform with all applicable state and federal requirements including DOT, Caltrans, and OSHA standards. Spill containment areas will also be constructed around the storage tanks and under the tanker unloading station to contain any possible leakage and to minimize the possibility of spills. Safety equipment required by state and federal regulations, such as eye wash and shower stations, will also be located on site.

The chemicals used at the PWRP do not pose a significant health risk to surrounding land uses. No liquid or gaseous chlorine is currently or will in the future be stored on site. Treatment chemicals will be stored as liquids or solids on site in above ground storage containers in accordance with chemical storage regulations. The new chemicals needed for tertiary treatment will be added to the business plan submitted to the local fire department. Complying with hazardous material transportation and storage regulations would ensure that the project would not result in significant hazards from chemical use.

The increase in agriculture would likely increase the use of pesticides on crops. Pesticides would be stored in above ground storage containers on the agricultural lands. Since much of rural area near the proposed project area is currently used for agriculture, the expanded agricultural operations would not substantially alter conditions in the area.

² City of Palmdale, Draft EIR, 1993.

There is no history of accidental release of chemicals at the PWRP. District No. 20 has prepared an emergency response plan designed to prevent and mediate the effects of any accidental releases of hazardous materials stored and used at the PWRP. In the event of such an accident, the release of hazardous materials would be immediately reported to local fire emergency personnel and appropriate County and state agencies.

During excavation of soil at the PWRP and along the pipeline routes, contaminated soils may be encountered. Implementation of Mitigation Measure 12-2 would ensure that any contaminated soils encountered during construction would be handled and disposed of appropriately.

Mitigation Measures

Mitigation Measure 21-1: The FMP will include standards and procedures for the safe handling, storage, and disposal of pesticides, including providing worker safety education, providing secondary containment, providing protection from weather (including extreme heat and rain), and conducting periodic inspections of storage areas and application events.

Mitigation Measure 21-2: If contaminated soils are encountered during construction, they shall be disposed of in accordance with applicable waste disposal regulations in coordination with the California Department of Toxic Substances Control.

Significance After Mitigation

Less than significant.