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## 5.16 Waste Management

This section addresses waste management issues related to the MSP. In addition to describing Project waste streams and the impacts of their management/disposal, this section also describes existing site environmental conditions based on a Phase 1 Environmental Site Assessment (ESA).

### 5.16.1 LORS Compliance

Table 5.16-1 and the following subsections summarize the waste management LORS applicable to the MSP. The project will comply with the applicable LORS during construction and operation.

**Table 5.16-1. Summary of Applicable Waste Management LORS**

LORS	Applicability	Where Discussed in AFC
<b>Federal</b>		
Solid Wastes: Title 40, Code of Federal Regulations (CFR), Subchapter I	Establishes the criteria for characterizing hazardous waste, hazardous waste generator requirements, and management of oil and universal waste.	Section 5.16.1.1
Hazardous Materials: Title 49, CFR , Subchapter C	Establishes standards for the transportation of hazardous wastes.	Sections 5.16.1.1 and 5.6.1.1
Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act (RCRA) of 1976, et al) and subsequently amended in 1978, 1980 and 1984: Title 42, United States Code (U.S.C.), §§ 6901, et seq.	Provides the basic framework for Federal regulation of non-hazardous and hazardous waste.	Sections 5.16.1.1 and 5.6.1.1
Comprehensive Environmental Response, Compensation and Liability Act: (Superfund) Title 42, U.S.C., §§ 9601, et seq.	Establishes mechanisms for the cleanup of accidental spills or releases of pollutants into the environment.	Section 5.16.1.1

LORS	Applicability	Where Discussed in AFC
Clean Water Act of 1977 (including 1987 amendments) §§ 402, 33 U.S.C., §§ 1342, 40 CFR Subchapter D	Establishes requirements for discharges of wastewater and storm water along with spill prevention of petroleum products.	Sections 5.16.1.1 and 5.16.1.2
<b>State</b>		
Hazardous Waste Control Act of 1972, as amended. Title 22, California Health and Safety Code (HSC), Division 20, Chapter 6.5	Establishes the framework for managing hazardous waste in California.	Sections 5.16.1.2
Environmental Health Standards for the Management of Hazardous Waste: Title 22, California Code of Regulations (CCR), Division 4.5.	Establishes the requirements for disposal and management of hazardous waste in California.	Sections 5.16.1.2
Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program): HSC, Chapter 6.11 §§ 25404 – 25404.9	Establishes the framework for six environmental and emergency response programs and includes the mechanism for implementing the CUPA program.	Section 5.16.1.2
Unified Hazardous Waste and Hazardous Materials Management Regulatory Program: Title 27, CCR, Division 1, Subdivision 4, Chapter 1, §§ 15100, et seq.	Establishes specific Certified Unified Program Agency (CUPA) reporting requirements for businesses.	Section 5.16.1.2
California Integrated Waste Management Act of 1989: Public Resources Code, Division 30, §§ 40000, et seq.	Establishes mandates and standards for management of solid waste.	Sections 5.16.1.2
California Integrated Waste Management Board: Title 14, CCR, Division 7	Establishes minimum standards for solid waste handling and disposal.	Section 5.16.1.2

LORS	Applicability	Where Discussed in AFC
Hazardous Waste Source Reduction and Management Review Act of 1989 (also known as SB 14): HSC, Division 20, Chapter 6.5, Article 11.9, §§ 25244.12, et seq.	Establishes the State's hazardous waste source reduction activities.	Section 5.16.1.2
Hazardous Waste Source Reduction and Management Review. Title 22, CCR, §§ 67100.1 et seq.	Further clarification of the State's hazardous waste source reduction activities.	Section 5.16.1.2
Porter Cologne Water Quality Control Act : California Water Code Division 7, Chapter 4, Article 4, Section 13260 et seq	Requires filing with the appropriate RWQCB Report of Waste Discharge that could affect the water quality of the state, unless the requirement is waived pursuant to California Water Code section 13269 (a).	
<b>Local</b>		
Health and Safety San Bernardino County Ordinance Title 3	Establishes requirements for the use, generation, storage, and disposal of hazardous materials and wastes within the County	Section 5.16.1.3

### 5.16.1.1 Federal

Federal waste management LORS are described below.

#### Solid Wastes, Title 40 CFR, Subchapter I

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

- Part 246 addresses source separation for materials recovery guidelines;

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

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

#### **Hazardous Materials Regulations, Title 49, CFR, Subchapter C**

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

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

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

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

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

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

The Clean Water Act authorizes the EPA to regulate discharges of wastewater and storm water into surface waters by using permits. Specifically, 40 CFR Part 110 and 112 address discharge of oil and oil pollution prevention, Part 117 addresses reportable quantities for hazardous substances, and Parts 122, 125, and 129 addresses National Pollutant Discharge Elimination System (NPDES) permit program. Spill prevention control and countermeasure plans are required for facilities storing petroleum products at quantities above the regulatory threshold (40 CFR 112). Stormwater permits administered by the State of California are described in more detail in Section 5.17, Water Resources

### 5.16.1.2 State

Applicable State of California LORS are described below

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

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

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

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

The standards addressed by Title 22, CFR include:

- Identification and Listing of Hazardous Waste (Chapter 11, §§66261.1, et seq.);
- Standards Applicable to Generator of Hazardous Waste (Chapter 12, §§66262.10, et seq.);
- Standards Applicable to Transporters of Hazardous Waste (Chapter 13, §§66263.10, et seq.);
- Standards for Universal Waste Management (Chapter 23, §§66273.1, et seq.);
- Standards for the Management of Used Oil (Chapter 29, §§66279.1, et seq.); and
- Requirements for Units and Facilities Deemed to Have a Permit by Rule (Chapter 45, §§67450.1, et seq.)

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

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

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

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

The state agencies responsible for these programs set the standards for their programs while local governments implement the standards. San Bernardino County Fire Department is the CUPA and has jurisdiction of the Project.

The Waste Management analysis provided in this section only considers application of the Hazardous Waste Generator/Tiered Permitting element of the Unified Program. Other elements of the Unified Program may be addressed in AFC Section 5.6, Hazardous Materials Handling and/or Section 5.18, Worker Safety.

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

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

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

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

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

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

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

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

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

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

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

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

### **Porter Cologne Water Quality Control Act, California Water Code Division 7, Chapter 4, Article 4, Section 13260 et seq**

This law requires filing with the appropriate RWQCB a report of waste discharge (ROWD) that could affect the water quality of the State, unless the requirement is waived pursuant to Water Code Section 13269(a). The report shall describe the physical and chemical characteristics of the waste that could affect its potential to cause pollution or contamination. The report shall include the results of all tests required by regulations adopted by the board, any test adopted by the Department of Toxic Substances Control (DTSC) pursuant to Section 25141 of the Health and Safety Code for extractable, persistent, and bio-accumulative toxic substances in a waste or other material, and any other tests that the SWRCB or RWQCB may require. The WDR permit is discussed in more detail in Section 5.17, Water Resources.

#### **5.16.1.3 Local**

### **San Bernardino County Ordinances, Title 3 Health and Safety**

These regulations govern the use, generation, storage, and disposal of hazardous materials and wastes within the County. The San Bernardino County Fire Department serves as the

local CUPA authorized to implement the provisions of the California Unified Program elements (noted above in the State LORS section). San Bernardino County Public Works Department, Solid Waste Division, has developed a solid waste program to oversee the handling, processing, and disposal of non-hazardous solid wastes to safeguard public health. Solid waste facilities include sanitary landfills, transfer stations, materials recovery facilities, and non-hazardous contaminated soil facilities. Septic (pumping) businesses, toilet rental agencies, and refuse haulers are also regulated by San Bernardino County Public Works Department, Solid Waste Division.

**Table 5.16-2. Agencies and Agency Contacts**

Agency Contact	Phone/E-mail	Permit/Issue
Gloria Conti, Staff Duty Officer 5796 Corporate Avenue Cypress CA 90630-4732	(714) 484-5400 gconti@dtsc.ca.gov	Hazardous waste management
Richard W. Booth, PG, CHg , Senior Engineering Geologist Lahontan RWQCB South Lake Tahoe Office 2501 Lake Tahoe Blvd., South Lake Tahoe, CA 96150	(530) 542-5574 RBooth@waterboards.ca.gov	Waste discharge requirements (WDR), Storm Water Pollution Prevention Plans (SWPP)
Peter Brierty, Assistant Chief/Fire Marshal San Bernardino County Fire Department 520 S. "E" Street San Bernardino CA 92415	(909) 386-8401 pbrierty@sbcfire.org	Hazardous waste management and nonhazardous waste management

#### 5.16.1.4 Required Permits and Permit Schedule

As a generator of hazardous waste, the Project will be required to obtain an EPA identification number from the DTSC. As an operator of a bioremediation unit for handling and using contaminated soil on site, the Project will require a waste discharge requirements (WDR) permit from the Lahontan RWQCB. WDR and stormwater permitting is described in more detail in Section 5.17, Water Resources. In addition, a Hazardous Materials Handler and Hazardous Waste Generator permit will be required from the San Bernardino County Fire Department, Hazardous Materials Division. San Bernardino County Fire Department also requires permits for the installation and operation of underground storage tanks (USTs) and above ground storage tanks (ASTs). Permitting for ASTs is

described in more detail in Section 5.6, Hazardous Materials. Table 5.16-3 identifies the waste management permits required for the Project.

**Table 5.16-3. Permits Required and Permit Schedule**

Permit/Approval	Schedule
EPA ID No. and register as a Hazardous Waste Generator with DTSC	Takes 3-5 businesses days once the application form has been received.
Hazardous Waste Handler and Generator Permit from San Bernardino Fire Department, Hazardous Materials (CUPA) Program	Takes approximately 30 days for approval once needed information submittal (e.g., Business Plan) is complete.

### 5.16.2 Affected Environment

The Project involves the construction and operation of a 250 MW concentrated solar electric generating facility on a former agricultural site in an unincorporated area of San Bernardino County approximately 10.6 miles northwest of Hinkley CA. Waste management-related baseline conditions of the site are described in a Phase I ESA, summarized below in Section 5.16.2.3 and included as AFC Appendix I.

**Table 5.16-4. Solid and Hazardous Waste Disposal Facilities**

Waste Disposal Site	Title 23 Class	Maximum Permitted Capacity	Current Operating Capacity <sup>1</sup>	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Barstow Sanitary Landfill 32553 Barstow Road Barstow, CA	Class III	3,584,500 cubic yards	760 tons/day	924,401 cubic yards	2012	No
Victorville Sanitary Landfill 18600 Stoddard Wells Road Victorville, CA	Class III	83,200,000 cubic yards	3,000 tons/day	82,200,000 cubic yards	2047	No
California Street Landfill 2151 Nevada Street Redlands, CA	Class III	10,000,000 cubic yards	829 tons/day	6,800,000 cubic yards	2042	No

Waste Disposal Site	Title 23 Class	Maximum Permitted Capacity	Current Operating Capacity <sup>1</sup>	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Mid Valley Sanitary Landfill 2390 N Alder Ave Rialto, CA	Class III	62,000,000 cubic yards	7,500 tons/day	35,270,000 cubic yards	2033	No
Landers Sanitary Landfill 59200 Winters Rd Landers, CA 92285	Class III	3,080,000 cubic yards	1,200 tons/day	1,100,000 cubic yards	2013	No
Victor Valley Materials Recovery Facility 1700 Abby Road Victorville, CA	N/A	N/A	600 tons/day	N/A	Not Available	No
McKittrick Waste Treatment Site 56533 Hwy 58 McKittrick, CA	Class II	2,092,000 cubic yards	1,180 tons/day	841,498 cubic yards	2029	No
3Kettleman Hills – B18Nonhaz Codisposal Landfill 36251 Old Skyline Road Kettleman City, CA	Class I, II	10,700,000 cubic yards	8,000 tons/day	6,000,000 cubic yards	Not Available	No
Clean Harbors Buttonwillow Landfill 2500 West Lokern Road Buttonwillow, CA	Class I	14,300,000 cubic yards	10,500 tons/day	Not Available	2040	No
Source: CIWMB/SWIS, December 2009 <sup>1</sup> Maximum Permitted Throughput						

### 5.16.2.1 Non-Hazardous Solid Waste Disposal Sites

Non-hazardous solid waste generated at the Project site during both the construction and operation phases will be taken offsite for recycling or disposal to a permitted Class III landfill. As noted above, there are five class III landfills located in San Bernardino County within approximately 100 miles of the Project site: Barstow, Victorville, California Street, Mid Valley and Landers landfills. The Victor Valley Materials Recovery Facility (MRF) accepts mixed materials for recycling. The maximum landfill capacity, daily operating capacity, and remaining capacity of each landfill is listed in Table 5.16-4., Hazardous Waste Disposal Sites.

### 5.16.2.2 Hazardous Waste Disposal Sites

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

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

- Clean Harbors Buttonwillow Landfill (Kern County) located on Lokern Road between State Highways 33 and 58 is a treatment, storage and disposal facility that accepts Class I solid wastes and Class II solid and liquid wastes. The permitted capacity of this landfill is 14.3 million cubic yards with an estimated 34 years of operational life remaining (Bouie, 2006). The EPA Identification Number for this facility is CAD980675276.
- Chemical Waste Management Landfill located in Kettleman Hills (Kings County) on State Highway 41 approximately two miles west of Interstate 5. The Class I portion of this landfill has approximately 6.0 million cubic yards remaining capacity of a total permitted capacity of 10.7 million cubic yards. The remaining life of this landfill is approximately 30 years (Yarborough 2006). The EPA Identification Number for this facility is CAD000646117.

The permitted, operating, and remaining capacities of these landfills are described in Table 5.16-4. It is expected that hazardous wastes generated during the construction and operational phases of the Project will be disposed at the Buttonwillow landfill.

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

### 5.16.2.3 Phase I Environmental Site Assessment

A Phase I ESA was prepared by qualified professional staff in May 2009 in order to identify, to the extent feasible, recognized environmental conditions (RECs) relevant to development of the Project. The Phase I ESA was performed in conformance with the general scope and limitations of ASTM Standard Practice E 1527-05. The properties consist of approximately 1765 acres of developed agricultural farming and vacant undeveloped desert. A portion of the property has been known in the past as the Lockhart Ranch.

### **Site History**

Historical research reveals the parcels assessed have historically been used for agricultural production and cattle ranching since at least the 1930's. The majority of the area is significantly disturbed from past agricultural and ranching activities which ceased in the Project area in approximately 1999.

### **Incidents and Notifications**

The subject property is not listed in any researched environmental database. No sources of concern were identified on the site or surrounding properties during the visit to the Project area and vicinity during the EAS preparation.

### **Summary of Findings and Conclusions**

Based on a site visit; the review of governmental environmental databases, files, and historical documents; and interviews conducted during the Phase I ESA process with selected individuals, determined no recognized environmental conditions were identified on the property evaluated and within the Project boundaries.

#### **5.16.3 Environmental Impacts**

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

- Offsite treatment or disposal of non-hazardous solid wastes must not significantly impact available landfill, recycling or treatment program capacities;
- Offsite disposal of hazardous wastes must not significantly impact available Class I landfill capacity; and
- The facility must comply with all applicable LORS regarding management of non-hazardous and hazardous wastes.

Additionally, according to CEQA Guidelines, a project has a significant impact if it:

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

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

To ensure that public health and safety and the environment are protected, a facility closure plan will be prepared prior to Project closure. The closure plan will ensure that the management, recycling, and/or disposal of non-hazardous and hazardous wastes associated with facility closure activities are performed in accordance with applicable LORS. See AFC Section 3.0 for additional information on facility closure.

### 5.16.3.1 Construction

Table 5.16-5 summarizes the anticipated waste streams generated during Project construction, along with appropriate management methods for treatment or disposal.

**Table 5.16-5. Summary of Construction Waste Streams and Management Methods**

Waste Stream and Classification <sup>1</sup>	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				On-site	Off-site
Construction waste - Hazardous	Empty hazardous material containers	1 cubic yard per week (cy/wk)	Intermittent	None. Accumulate onsite for <90 days	Return to vendor or dispose in a permitted waste disposal facility
Construction waste - Hazardous	Solvents, used oil, paint, oily rags	175 gallons	Every 90 days	None. Accumulate onsite for <90 days	Recycle or use for energy recovery
Heat Exchanger cleaning waste - Hazardous	Chelant type solution	1,000 gallons	One time event during commissioning	None	Dispose to permitted hazardous waste facility
Spent batteries – Universal Waste	Lead acid, alkaline	20 in 2 years	Intermittent	None. Accumulate onsite for <90 days	Recycle
Construction waste - Nonhazardous	Scrap wood, concrete, steel, glass, plastic, paper	40 cubic yards / week	Intermittent	None	Recycle wherever possible, otherwise dispose to Class III landfill
Sanitary waste - Nonhazardous	Portable chemical toilets – sanitary waste	200 gallons / day	Periodically pumped to tanker truck by licensed contractors	None	Ship to sanitary wastewater treatment plant
Office waste - Nonhazardous	Paper, aluminum, food	1 cy/wk	Intermittent	None	Recycle or dispose to Class III landfill
<sup>1</sup> Classification under Title 22, CCR § 66261.20 et seq.					

### **Hazardous Waste Disposal**

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

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

### **Universal Waste Disposal**

Information on universal wastes anticipated to be generated during Project construction is provided in Table 5.16-5. Universal wastes and unusable materials will be handled, stored, and managed per California Universal Waste requirements.

### **Non-Hazardous Solid Waste Disposal**

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

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

#### **5.16.3.2 Operation**

The operation of the MSP is expected to generate sanitary wastewater, non-hazardous wastes, and small quantities of hazardous wastes. Operation of Project linear facilities (gas pipeline, transmission line) will generate minimal quantities of waste. The types of waste and their estimated volumes are summarized in Table 5.16-6 and described below the table.

Table 5.16-6. Summary of Operation Waste Streams and Management Methods

Waste Stream and Waste Management Method Classification <sup>1</sup>	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				On-Site	Off-Site
Used Hydraulic Fluid, Oils and Grease – Non-RCRA Hazardous	HTF system, turbine, and other hydraulic equipment	50,000 gallons /year	Intermittent	Accumulated for <90 days	Recycle
Effluent from oily water separation system – Non-RCRA Hazardous	Plant wash down area / oily water separation system	3,000 gallons /year	Intermittent	None	Recycle
Oily rags, oil absorbent, and oil filters – Non-RCRA Hazardous	Various	Five 55-gallon drums / month	Intermittent	Accumulated for <90 days	Sent offsite for recovery or disposed at Class I landfill
Soil contaminated with HTF (> Design Levels - RWQCB) – Non-RCRA Hazardous	Solar array equipment leaks	10 cubic yards per year	Intermittent	Accumulated of < 90 days	Sent offsite for disposal at a Class I landfill
Soil contaminated with HTF (< Design Levels - RWQCB) - Non-RCRA Hazardous	Solar array	750 cubic yards/year	Intermittent	Bioremediation unit	Dispose to waste management facility
Spent batteries – Universal Waste	Rechargeable and household types	<10 / month	Continuous	Accumulate for <1 year	Recycle
Spent batteries – Hazardous	Lead acid	20 every 2 years	Intermittent	Accumulated for <90 days	Recycle
Spent fluorescent tubes – Universal Waste	Facility lighting	< 50 / year	Intermittent	Accumulate for <1 year	Recycle
Spent Demineralizer resin – Nonhazardous	Demineralizer	250 cubic feet	Once every 3 years	None	Recycle

Cooling Tower Blowdown – Designated Liquid Waste	Cooling tower	42,486 gallons /day	Continuous when plant is operating	Evaporation Ponds	None
Cooling Tower Basin Sludge - Nonhazardous	Cooling tower	10 tons/year	Annually	None	Dispose to waste management facility
Spent softener resin - Nonhazardous	Water Softener	500 ft /year	Once every 3 years	None	Recycle
Cooling Tower Solids (Filter Press discharge) – Hazardous	Filter press solids, dewatered sludge cake	8,937 pounds per day	Continuous	None	Dispose to waste management facility
Sanitary wastewater - Nonhazardous	Toilets, washrooms	2,500 gallons /day	Continuous	Septic leach field	None
<sup>1</sup> Classification under Title 22, CCR § 66261.20 et seq.					

### **Hazardous Waste Disposal**

Information on hazardous wastes anticipated to be generated during Project operation is provided in Table 5.16-6. A summary of that information is provided below:

- Used hydraulic fluids, oils, greases, oily filters and oily rags, and associated wastes: Used oils, greases, and oily effluent from the water separation systems will be accumulated and maintained onsite in secure hazardous waste accumulation areas within secondary containment. These wastes will be recycled whenever possible. Used oil and recovered oil from the oil/water separator will be recycled by a licensed oil recycler. Oily rags and oil absorbent (used to contain small spills) will be generated as a normal part of maintenance activities. These wastes will be recycled or shipped off site for energy recovery or disposal in a Class I landfill.
- The Project will include bioremediation/land farm units to treat soil contaminated with HTF in the event of a leak or spill. The proposed bioremediation and land farm facilities will cover an area of approximately 1.5 acres on each plant site. Appropriate contamination levels for bioremediation and land farming of site-specific soils will be determined by Lahontan-approved testing to ensure the adequacy of the bioremediation/land farm unit design for HTF-contaminated soil. Contaminated soil that exceeds this level will be disposed of at an appropriate waste facility.

The bioremediation/land farm area will be designed in accordance with Lahontan RWQCB requirements and will include a leak detection system and monitoring wells. Treatment in the bioremediation units involves the addition of nitrogen and phosphorous (i.e., fertilizers) as nutrients to the HTF-contaminated soil to stimulate

consumption of HTF by indigenous bacteria. The soil will remain in the bioremediation/land farm unit until concentrations are reduced to appropriate levels for use as fill material on the site.

- Cleaning solutions: Waste cleaning solutions, such as solvents and other chemical cleaning solutions will be generated during routine equipment maintenance and repair. These waste cleaning solutions will be collected and recycled by a licensed contractor on a regular basis.
- Spent batteries: Lead-acid batteries will be returned to the vendor. Other spent batteries will be accumulated onsite in labeled containers and recycled at least annually per California Universal Waste requirements.

Hazardous wastes and unusable hazardous materials will be stored in a hazardous waste accumulation area. Hazardous waste areas will include secondary containment with a capacity to hold the volume of the largest container plus ten percent. Hazardous waste accumulation area regulations will be followed (e.g., weekly inspections). Wastes will be transported for recycling or disposal in accordance with all Federal, State, and local hazardous waste generator requirements. Hazardous wastes will be transported by a licensed hazardous waste hauler using a Uniform Hazardous Waste Manifest and disposed or recycled at an appropriately-permitted facility. Copies of manifests, reports, waste analysis, exception reports, land disposal restrictions and other related documents will be maintained onsite for as required.

### Liquid Designated Waste

The cooling system for heat rejection from the steam cycle consists of a surface condenser, circulating water system, and a wet cooling tower. The surface condenser receives exhaust steam from the LP section of the STG and condenses it to liquid for return to the SSG. Wastewater from the SSG and demineralization system is sent to the cooling tower basin. The cooling tower blowdown (i.e., discharge) will be piped to onsite surface impoundments (evaporation ponds) for dewatering. The ponds are being designed so that the residual solids will not require removal for the duration of the Project's operating life. If solids removal is necessary for pond maintenance reasons, the removed solids will be shipped to an appropriate offsite disposal facility.

As discussed in the Project Description, the MSP will have four evaporation ponds with a nominal surface area of 5 acres each for a total of 20 acres. Multiple ponds are planned to allow plant operations to continue in event that a pond needs to be taken out of service for some reason, e.g., needed maintenance. Each pond will have enough surface area so that the evaporation rate exceeds the cooling tower blowdown rate at maximum design conditions and at annual average conditions. As noted above, the planned pond depth (capacity) is intended to avoid the need for residual solids removal during the life of the Project. While most of the waste constituents in the liquid waste stream are not classified as hazardous, the combination of constituents along with the possibility of small quantities of heavy metals should classify the waste discharge as hazardous. The ponds will be designed in accordance with Lahontan RWQCB requirements and will incorporate dual liners, a leak detection system and monitoring wells.

### **Universal Waste Disposal**

Information on hazardous wastes anticipated to be generated during Project operation is provided in Table 5.16-6. Universal Wastes and unusable materials will be handled, stored and managed per California Universal Waste Requirements:

#### **Non-Hazardous Waste: HTF-Contaminated Soil**

Non-hazardous solid waste generated during operation of the power plant is likely to include soil contaminated with HTF from spills and leaks in the HTF system. Management of HTF-contaminated soil is based on the HTF concentrations in the soil. Soils with concentrations above the design level approved by the RWQCB would be shipped off site for disposal at a permitted Class I landfill. A facility-specific Waste Discharge Requirements (WDR) permit from the Lahontan RWQCB is required to operate a bioremediation unit and land farm unit. Soils with concentrations below the RWQCB design level will be treated on-site in an approved bioremediation/land farm facility.

#### **Non-Hazardous Waste Disposal:**

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

It is anticipated that disposal of non-hazardous solid waste from the Project will represent only a minimal increase (a small fraction of one percent) relative to the capacities of the local Class III landfills (see Table 5.16-5). Therefore the quantities of non-hazardous solid waste from the Project will not adversely impact available landfill capacity and can be considered insignificant.

Sanitary waste generated at the MSP will be sent to an onsite septic system and leach field, there will be no offsite liquid discharges from the Project. Stormwater will be managed as described in Section 5.17, Water Resources.

### **5.16.3.3 Cumulative Impacts**

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

### **5.16.4 Mitigation Measures**

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

**WM-1** - A detailed Construction Waste Management Plan for all wastes generated during Project construction will be prepared 60 days prior to the start of onsite activities. The plan will be comprehensive to ensure that compliance is maintained with local, State and Federal regulations. The plan will include:

- A description of all construction waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Management methods to be used for each waste stream, including temporary onsite storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.
- Spill control and management procedures will be included covering spill containment, collection, and treatment.

**WM-2** – A detailed Operation Waste Management Plan for all wastes generated during MSP operations will be prepared 60 days prior to the startup of the facility. The plan will be comprehensive to ensure that compliance is mandated with local, State, and Federal regulations. The plan shall include:

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

Spill control and management procedures will be included in the detailed Hazardous Waste Management Plan to be developed for the Project. The purpose of the spill

control and management procedures is to avoid accidental mixing of incompatible chemicals and spills during transfer of chemicals. The design of spill control and management procedures will include containment, collection, and treatment systems.

**WM-4 Prior** to onsite construction activities, construction employees will receive waste training, specifically on the Construction Waste Management Plan to ensure compliance with Federal, State, and Local requirements emphasizing the protection of workers, the public, and the environment. As the project transitions from construction to operation, facility personnel will receive waste training prior to generating, handling, storing, or shipping hazardous waste. Facility employees will be trained on the Operation Waste Management Plan, including waste minimization.

**WM-5** The applicant will obtain a hazardous waste generator identification number from the Department of Toxic Substances Control (DTSC) prior to generating any hazardous waste during construction and operations.

### 5.16.5 References

- California Integrated Waste Management Board (CIWMB), 2009. Solid Waste Information System (SWIS) Internet Website, May.
- Stephanie Odenbach, 2009. San Bernardino County Fire Department, Hazardous Materials Division, Personal communication. May.
- DeMenno/Kerdoon. 2009, [www.demennokerdoon.com](http://www.demennokerdoon.com), May.
- Patrice Copeland, 2009. Regional Water Quality Control Board Lahontan Region. Personal communication. May.
- DTSC, 1995. Letter to Mr. David Rib, KJC Operating Company, re: Request for Reclassification of Therminol Contaminated Soil as Nonhazardous Pursuant to Section 66260.200(f), Title 22, California Code of Regulations (22 CCR) – Waste Evaluation Unit File # F143 (WEU File # F143). April 4.
- DTSC, 2009. Department of Toxic Substances Control, Gloria Conti, Regulatory Assistance Officer, Personal communication, May.
- Enviro Chek, 2009, Phase I Environmental Site Assessment of MSP, San Bernardino County, California, May.