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5.13 WASTE MANAGEMENT

Hydrogen Energy International LLC (HEI or Applicant) is jointly owned by BP Alternative Energy North America Inc., and Rio Tinto Hydrogen Energy LLC. HEI is proposing to build an Integrated Gasification Combined Cycle (IGCC) power generating facility called Hydrogen Energy California (HECA or the “Project”) in Kern County, California. The Project will produce electricity while substantially reducing greenhouse gas emissions by capturing carbon dioxide (CO₂) and transporting it for enhanced oil recovery (EOR) and sequestration.

The 315-acre Project Site is located approximately 6.5 miles west of the outermost edge of the city of Bakersfield and 2 miles northwest of the unincorporated community of Tupman in western Kern County, California, as shown in Figure 2-1, Project Vicinity Map. The Project Site is adjacent to an oil producing area known as the Elk Hills Oil Field Unit. The Project Site is currently undeveloped. Existing surface elevations vary from about 445 feet above mean sea level (msl) in the southwest corner to about 310 feet above msl in the northeast corner.

The Project will gasify petroleum coke (or blends of petroleum coke and coal, as needed) to produce hydrogen to fuel a combustion turbine operating in combined cycle mode. The gasification component feeds a 390 gross megawatt (MW) combined cycle plant. The net electrical generation output from the Project will provide California with approximately 250 MW of low-carbon baseload power to the grid. The gasification component will also capture approximately 90 percent of the carbon dioxide from the syngas at steady-state operation, which will be transported and used for EOR and sequestration (storage) in the Elk Hills Oil Field Unit. In addition, approximately 100 MW of natural gas generated peaking power will be available from the Project.

The Project Site and linear facilities comprise the affected study area and are entirely located in Kern County, California. These Project components are described below.

Major on-site Project components will include, as shown on Figure 2-4, Plot Plan:

- Solids Handling, Gasification, and Gas Treatment
 - Feedstock delivery, handling and storage
 - Gasification
 - Sour shift/gas cooling
 - Mercury removal
 - Acid gas removal
- Power Generation
 - Combined-cycle power generation
 - Auxiliary combustion turbine generator
 - Electrical switching facilities
- Supporting Process Systems
 - Natural gas fuel systems

- Air separation unit (ASU)
- Sulfur recovery unit
- Zero liquid discharge
- Carbon dioxide compression
- Wastewater injection wells
- Raw water treatment plant
- Other plant systems

The Project also includes the following off-site facilities, as shown on Figure 2-5, Project Location Map:

- **Electrical Transmission Line** – An electrical transmission line will interconnect the Project to Pacific Gas & Electric’s (PG&E) Midway Substation. The interconnection voltage is expected to be 230 kilovolts (kV). The Project is considering two alternative transmission routes, both of which extend from the western edge of the Project Site to the north, and west to the north side of the substation. Transmission Alternative 1 is approximately 9 miles long and Transmission Alternative 2 is approximately 9.5 miles long.
- **Natural Gas Supply** – A natural gas interconnection will be made with either PG&E or Southern California Gas Company natural gas pipelines, both of which are located southeast of the Project Site. The natural gas pipeline will be approximately 7 miles in length. The interconnect will consist of one tap off the existing natural gas line, one meter set, one service pipeline service connection, and a pressure limiting station located on the Project Site.
- **Water Supply Pipelines** – The Project will utilize brackish groundwater supplied from the Buena Vista Water Storage District (BVWSD) located to the northwest. The raw water supply pipeline will be approximately 18 miles in length. Potable water for drinking and sanitary use will be supplied by West Kern Water District located near the State Route 119 (SR 119)/Tupman Road intersection (southeast of the Project Site). The potable water supply pipeline will be approximately 5.5 miles in length.
- **Carbon Dioxide Pipeline** – The carbon dioxide pipeline will transfer the carbon dioxide captured during gasification from the Project Site southwest to the custody transfer point. The Project is considering two alternative pipeline routes. Alternative 1 is approximately 2 miles in length, while Alternative 2 is approximately 2.5 miles in length.

The Project components described above are shown on Figure 2-5, Project Location Map, which depicts the region, the vicinity, the Project Site and its immediate surroundings for Project components.

All temporary construction equipment laydown and parking, including construction parking, offices, and construction laydown areas, will be located on the Project Site.

This section presents a discussion of potential impacts from the generation, storage, and disposal of hazardous and non-hazardous wastes from the Project. Included in the discussion are descriptions of waste streams that will be generated during construction and operation; descriptions of applicable waste disposal sites to be used by the Project; waste mitigation

methods to minimize impacts to the environment; and applicable laws, ordinances, regulations, and standards (LORS).

5.13.1 Affected Environment

5.13.1.1 Project Site

A Phase I Environmental Site Assessment (ESA) of the Project Site has been prepared in accordance with American Society for Testing and Materials (ASTM) Practice E 1527-05. The ESA report is included in this AFC as Appendix M. The objective of the Phase I ESA was to identify Recognized Environmental Conditions (RECs) that may exist on the Project Site. In January 2008, URS conducted a site reconnaissance of the subject property and reviewed available documents from HEI and Occidental of Elk Hills Inc. Based upon the information collected and observations made during the ESA, URS identified no RECs in connection with this Project. An environmental database review was conducted to identify sites within a 1-mile radius of the Project Site for potential environmental concerns. No surrounding properties of potential concern were noted.

Properties surrounding the subject property include: undeveloped property to the north and east owned by several private, corporate, and government entities; undeveloped property to the south owned by Chevron and Occidental of Elk Hills Inc., and undeveloped property to the west owned by Chevron. For more details regarding this Project, see Section 2.0, Project Description.

As described in more detail below in Section 5.13.2, Environmental Consequences, the Project will generate hazardous and non-hazardous wastes during the construction and operational phases of the Project that are typical of an IGCC power plant.

Facility employees will receive hazardous materials training as required by the Occupational Safety & Health Administration (OSHA), Hazard Communication Standard. Additionally, employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization procedures in accordance with CCR Title 22.

5.13.1.2 Non-Hazardous Solid Waste Disposal

Existing non-hazardous solid waste disposal facilities in the general area of the Project Site are listed in Table 5.13-1, Waste Recycling/Disposal Facilities. Several available Class III landfills are listed in Table 5.13-1. They accept non-hazardous wastes and inert solid wastes, including construction/demolition wastes. Liquid wastes are not accepted by these landfills. Industrial process solid waste is accepted on a case-by-case basis.

There are several soil treatment and soil recycling facilities in California that accept hydrocarbon-impacted soil that is classified by the generator as a non-hazardous waste per the Resource Conservation and Recovery Act (RCRA) and the California Code of Regulations (CCR) Title 22. Acceptable levels for treatment or recycling are established by the individual facilities. Soil treatment and/or recycling facilities are listed in Table 5.13-1, Waste Recycling/Disposal Facilities.

5.13.1.3 Hazardous Solid Waste Disposal

Hazardous waste generated at the Project Site will be taken off site for recycling or disposal by a permitted hazardous waste transporter to a permitted treatment, storage, and disposal facility or Class I landfill. There are two Class I landfills located in California: Clean Harbors Buttonwillow Landfill in Kern County and Chemical Waste Management's Kettleman Hills Landfill in Kings County. The permitted, operating, and remaining capacities of these landfills are described in Table 5.13-1, Waste Recycling/Disposal Facilities. Hazardous waste generated during construction and operational phases at the Project is not expected to significantly impact available landfill capacity.

5.13.2 Environmental Consequences

The analysis of impacts related to waste management from the Project is based on significance criteria summarized as follows:

- Non-hazardous solid wastes must not significantly alter available landfill, recycling, or treatment program capacities.
- Non-hazardous liquid wastes must not cause a publicly owned treatment system to violate any applicable waste discharge requirements.
- Hazardous solid wastes must not significantly alter available Class I landfill capacity.
- The facility must comply with all applicable laws regarding the handling of hazardous wastes.

Additionally, according to the California Environmental Quality Act (CEQA) Appendix G, Guidelines, a project has a significant impact when it:

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

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

SECTION FIVE

Environmental Information

**Table 5.13-1
Waste Recycling/Disposal Facilities**

Solid Recycling/Waste Disposal Site	Title 23 Class	Permitted Throughput	Permitted Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Taft Sanitary Landfill (Solid Waste Facility) 13351 Elk Hills Road Taft, CA 93626	Class III	419 tons per day	8.8 million cubic yards	6.7 million cubic yards	2123	No
Bakersfield Metropolitan (Bena) Sanitary Landfill Facility (SLF) (Solid Waste Facility) 2951 Neumarkel Road Caliente, CA 93518	Class III	4.5 thousand tons per day	53 million cubic yards	44.8 million cubic yards	2038	No
Shafter-Wasco Sanitary Landfill (Solid Waste Facility) 17621 Scofield Avenue Shafter, CA 93668	Class III	880 tons per day	11.6 million cubic yards	7.9 million cubic yards	2027	No
U.S. Borax Inc. Refuse Waste Pile (Solid Waste Facility) 14486 Borax Road Boron, CA 93516	Class III	443 tons per day	8.5 million cubic yards	1.4 million cubic yards	2023	No
McKittrick Waste Treatment Site (Solid Waste Facility) 56533 Highway 58 McKittrick, CA 93251	Class II	1.2 thousand tons per day	2.1 million cubic yards	84.1 thousand cubic yards	2029	No
Chemical Waste Management Kettleman Hills Landfill (Solids Waste Facility) 36251 Old Skyline Road Kettleman City, CA 93239	Class I	8 thousand tons per day	10.7 million cubic yards	6 million cubic yards	Not available	No

SECTION FIVE

Environmental Information

**Table 5.13-1
Waste Recycling/Disposal Facilities**

Solid Recycling/Waste Disposal Site	Title 23 Class	Permitted Throughput	Permitted Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Clean Harbors Buttonwillow Landfill (Solid Waste Facility) Lokern Road Kern County, CA	Class I	10,48 thousand tons per day	14,29 million cubic yards	Not available	2040	No
American Remedial Technologies (Solids Recycling) 2680 Seminole Avenue Lynwood, CA 90262	Not Applicable	25 thousand tons per month	300 thousand tons per year	Not applicable	Not applicable	No
TPS Technologies, Inc. (Soil Recycling) 12328 Hibiscus Avenue Adelanto, CA 92301	Not Applicable	Not applicable	350,000 tons per year	Not applicable	Not applicable	No
Thermal Remediation Solutions (Solids Recycling) 1211 West Gladstone Avenue Azusa, CA 91702	Class III	200,000 tons per year	2,000 tons per day	Not applicable	Not applicable	No

Source: CIWMB, 2008.

5.13.2.1 Construction

Project Site Construction

The Project will generate wastes typical for the construction of an IGCC power generation plant. Table 5.13-2, Summary of Construction Waste Streams and Management Methods, summarizes the anticipated waste streams generated during construction, along with appropriate management methods for treatment or disposal. A waste management plan that encompasses hazardous and nonhazardous wastes will be prepared prior to construction.

**Table 5.13-2
Summary of Construction Waste Streams
and Management Methods¹**

Waste Stream	Waste Classification	Amount	Disposal Method
Used Lube Oils, Flushing Oils	Hazardous or Non-hazardous	7 55-gallon drums per month	Recycle
Hydrotest Water (One time per commissioning, reuse as practical, test for hazardous characteristics)	Hazardous or Non-hazardous	2.8 million gallons total	Characterize. Drain non-hazardous to the Detention Basin. Dispose of hazardous at a hazardous waste disposal facility.
Chemical Cleaning Wastes (Chelates, Mild Acids, TSP, and/or EDTA – During Commissioning)	Hazardous or Non-hazardous Recyclable	525,000 gallons total	Hazardous or non-hazardous waste disposal facility.
Solvents, Used Oils, Paint, Adhesives, Oily Rags	Hazardous ² Recyclable	160 gallons per month	Recycle or dispose of as hazardous waste.
Spent Welding Materials	Hazardous	260 pounds per month	Dispose at a hazardous waste landfill.
Used Oil Filters	Hazardous	100 pounds per month	Dispose at a hazardous waste landfill.
Fluorescent/Mercury Vapor Lamps	Hazardous Recyclable	50 units per year	Recycle
Misc. Oily Rags, Oil Absorbent	Non-hazardous or Hazardous Recyclable	1 55-gallon drum per month	Recycle or dispose at a hazardous waste landfill.
Empty Hazardous Material Containers	Hazardous Recyclable	1 cubic yard per week	Recondition, recycle, or dispose at a hazardous waste landfill.
Used Lead/Acid and Alkaline Batteries	Hazardous Recyclable	1 ton per year	Recycle
Sanitary Waste from Workforce (Portable Chemical Toilets)	Non-Hazardous	390 gallons per day	Pump and dispose by sanitary waste contractor.
Site Clearing – Grubbing, Excavation of Non-Suitable Soils, Misc. Debris	Non-Hazardous	Minimal	Reuse Soils or dispose at a non-hazardous waste landfill.

**Table 5.13-2
Summary of Construction Waste Streams
and Management Methods¹**

Waste Stream	Waste Classification	Amount	Disposal Method
Scrap Materials, Debris, Trash (Wood, Metal, Plastic, Paper, Packing, Office Waste, etc.)	Non-Hazardous	40 cubic yards per week	Recycle or dispose at a hazardous waste landfill.

Source: HECA Project

Notes:

¹ All Numbers are estimates

² Under California regulations

- CTG = combustion turbine generator
- EDTA = ethylene diamine tetra-acetic acid
- STG = steam turbine generator
- TSP = trisodium phosphate

Non-hazardous Waste

Solid waste generated from construction activities may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, and empty non-hazardous containers. These wastes will be segregated, where practical, for recycling. Non-recyclable wastes will be placed in covered dumpsters and removed on a regular basis by a certified waste handling contractor for disposal in accordance with all applicable LORS. With the implementation of Mitigation Measures WM-2, described in Section 5.13.4, below, impacts related to non-hazardous waste will be less than significant.

Hazardous Waste

Small quantities of hazardous wastes will likely be generated over the course of construction. These wastes may include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Hazardous wastes generated during Project construction will be handled and disposed of in accordance with applicable LORS and in accordance with Mitigation Measures WM-3 through WM-7. Hazardous wastes will be either recycled or disposed of in a licensed Hazardous Waste disposal facility, as appropriate. Managed and disposed of properly, these wastes will not cause significant environmental or health and safety impacts. Most of the hazardous waste, such as turbine-cleaning wastes, and used oil generated during construction can be recycled. The hazardous wastes that cannot be recycled are not expected to significantly impact the capacity of the Class I landfills in California. With the implementation of Mitigation Measures WM-3 through WM-7, described in Section 5.13.4, below, impacts related to hazardous waste will be less than significant.

Wastewater

Wastewater generated during construction of the Project will include sanitary wastes, equipment wash water, and storm water runoff. Construction-related wastewater will be managed according to appropriate LORS.

*Off-site Structures Construction***Non-hazardous and Hazardous Waste**

During the installation of the electrical transmission line, the natural gas pipeline, the carbon dioxide pipeline, and the water supply line, non-hazardous soils and surface demolition debris (e.g., concrete, asphalt, and piping) are anticipated. These wastes will be transported and disposed at an appropriate disposal facility. If contaminated soils are encountered during installation, these soils will need to be managed in accordance with applicable LORS. Soil sampling will likely be required to characterize the waste. Soil may be recycled or disposed as a non-hazardous waste at a Class III landfill or soil recycling facility, or disposed as hazardous waste at a Class I landfill. The disposal option will depend on the characterization of the waste per RCRA and CCR Title 22 criteria. Waste disposal facilities are listed in Table 5.13-1, Waste Recycling/Disposal Facilities.

Non-hazardous and hazardous wastes are not expected to be encountered at paved parking and equipment staging locations. If site grading is necessary to utilize unpaved parking and equipment staging locations, then non-hazardous soil and debris (trash, asphalt) may be generated. With the implementation of Mitigation Measures WM-1 through WM-7, described in Section 5.13.4, below, impacts will be less than significant.

*5.13.2.2 Operations and Maintenance**Project Operations*

Operation of the plant will generate wastes resulting from processes, routine plant maintenance, and office activities typical of IGCC power generation operations. The operating waste streams and management methods are summarized in Table 5.13-3, Summary of Operating Waste Streams and Management Methods, and are described in more detail below. Non-hazardous wastes during operation of the power plant will be recycled to the greatest extent practical, and the remainder removed on a regular basis by a certified waste-handling contractor. Operation of the electrical transmission line, the natural gas pipeline, the carbon dioxide pipeline, and the water supply line will not generate a material amount of waste. The types of waste and their estimated quantities are shown in Table 5.13-3, Summary of Operating Waste Streams and Management Methods. A waste management plan that encompasses hazardous and nonhazardous wastes will be prepared prior to operations.

**Table 5.13-3
Summary of Operating Waste Streams and Management Methods¹**

Waste Stream	Waste Classification	Anticipated Annual Amount	Disposal Method
Spent Claus Sulfur Recovery Catalyst (Activated Alumina)	Non-Hazardous	7 tons	Dispose at a non-hazardous waste landfill.
Claus Catalyst Support Balls (Activated Alumina)	Non-Hazardous	3 tons	Recycle
Spent Sour Shift Catalyst (Cobalt Molybdenum)	Non-Hazardous	67 tons	Send to reclaimer for metals recovery.
Spent Titania (TiO ₂)	Non-Hazardous	2 tons	Send to reclaimer for metals recovery.

**Table 5.13-3
Summary of Operating Waste Streams and Management Methods¹**

Waste Stream	Waste Classification	Anticipated Annual Amount	Disposal Method
Spent Hydrogenation Catalyst (Cobalt Molybdenum)	Non-Hazardous	2 tons	Send to reclaimer for metals recovery.
Hydrogenation Catalyst Support Balls (Alumina Silicate)	Non-Hazardous	1 ton	Recycle
Spent SCR Catalyst (Titanium, vanadium, tungsten, combustion contaminants, and inert ceramics)	Hazardous	TBD	Return to supplier to reclaim/dispose.
Spent CO/VOC oxidation catalyst (Noble metals, other inerts, and combustion contaminants)	Non-Hazardous	TBD	Send to reclaimer for noble metals recovery.
Amine Regenerator Carbon Filter TGTU (Activated Carbon)	Hazardous	26 tons	Stabilize and dispose at a hazardous waste landfill.
Spent Mercury Removal Carbon Beds (Impregnated activated carbon)	Hazardous	14 tons	Stabilize and dispose at a hazardous waste landfill.
Sour Water Carbon Filter (Activated Carbon)	Hazardous	48 tons	Stabilize and dispose at a hazardous waste landfill
ZLD Filter Cake (Inorganic and organic salts)	Hazardous	5200 tons	Stabilize and dispose at a hazardous waste landfill
Refractory Brick and Insulation	Probably Non-Hazardous	360 tons	Characterize and dispose at a non-hazardous or hazardous waste landfill.
MDEA Sludge TGTU	Hazardous	2,000 gallons	Dispose at an incinerator or hazardous waste landfill.
Sour Water Sludge	Hazardous	30 tons	Dispose at an incinerator or hazardous waste landfill.
Waste Char and Ash	Non-Hazardous	160 tons	Dispose at a non-hazardous waste landfill.
Amine Absorber Residues TGTU (Iron and salts)	Non-Hazardous	20 cubic yards	Dispose at a non-hazardous waste landfill.
Spent Caustic	Hazardous	400,000 gallons	Offsite treatment to oxidize sulfides to sulfates. Adjust pH and dispose as non-hazardous. Hazardous waste disposal facility. May need to adjust pH first and re-characterize.
Spent Sulfuric Acid	Hazardous	14,000 gallons	
Off-Line Combustion Turbine Wash Wastes (Detergents and residues)	Hazardous or Non-Hazardous	15,000 gallons	Characterize and dispose as non-hazardous or hazardous waste.
HRSG Wash Water (Infrequent) (Detergent, residues, neutralized acids)	Hazardous or Non-Hazardous	100,000 gallons	Characterize and dispose as non-hazardous or hazardous waste
Raw Water Treatment Sludge and Used Water Filter Media	Non-Hazardous	TBD	Characterize and dispose as non-hazardous or hazardous waste.
Used Oil	Hazardous or Non-Hazardous	8000 gallons	Recycle. Expected to meet the regulatory exemption for used oil when recycled.

**Table 5.13-3
Summary of Operating Waste Streams and Management Methods¹**

Waste Stream	Waste Classification	Anticipated Annual Amount	Disposal Method
Spent Grease	Hazardous	16 55-gallon drums	Characterize and dispose as hazardous waste.
Miscellaneous Filters and Cartridges	Hazardous or Non-Hazardous	150 cubic yards	Characterize and dispose as non-hazardous or hazardous waste.
Miscellaneous Solvents	Hazardous	2 55-gallon drums	Recycle or disposal as hazardous waste.
Flammable Lab Waste	Hazardous	2 55-gallon drums	Characterize and dispose as hazardous waste.
Waste Paper and Cardboard Combined Industrial Waste	Non-Hazardous	320 cubic yards	Recycle
(Used PPE, materials, small amounts of refractory, slurry debris, etc.)	Non-Hazardous	320 cubic yards	Dispose at a non-hazardous waste landfill.
Gasification solids (Solid slag-like product)	Anticipated to be excluded or Non-Hazardous	51,000-248,200 standard tons (wet); 25,550-124,100 standard tons (dry)	Reuse, reclaim sellable metals, or characterize and dispose at a non-hazardous or hazardous waste landfill.

Source: HECA Project

Notes:

¹All numbers are estimates.

HRSG = heat recovery steam generator

MDEA = methyldiethanol amine

PPE = personal protective equipment

SCR = selective catalytic reduction

TGTU = tail gas treating unit

ZLD = zero liquid discharge

Non-hazardous Solid Waste

The following types of non-hazardous solid waste may be generated: paper, wood, plastic, cardboard, deactivated equipment and parts, defective or broken electrical materials, empty non-hazardous containers, and other miscellaneous solid wastes including the typical refuse generated by workers.

Office paper, newsprint, aluminum cans, wood, insulation, yard debris, concrete, gravel, scrap metal, cardboard, glass, plastic containers, and other non-hazardous waste material will be segregated and recycled to the extent practical, and the remainder will be removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. With the implementation of the Mitigation Measures described in Section 5.13.4.2, below, impacts related to non-hazardous waste during operation will be less than significant.

Gasification Solids

The gasifier will produce a solid slag-like by-product called “gasification solids”. These solids are made of ash from the petroleum coke, fluxant, and unconverted carbon that exit the gasifier in the solid phase.

Because the power plant has not yet been constructed, the gasification solids have not yet been generated. Consequently, the composition can only be projected, based on feed materials. Although other IGCC power plants generate similar solids, there is no exact match between gasification equipment, process specifications, and feed material blends.

Reuse potential is being evaluated and includes possibilities in the cement industry, aggregate or road base industry, metal reclaiming (for vanadium and nickel), and/or blending with petroleum coke to form a sellable fuel.

Gasification solids produced from the use of a feedstock that is at least 50 percent coal will be excluded from hazardous waste regulations and requirements, per the exclusions in the federal and California regulations. In addition, based on information from similar IGCC operations, the gasification solids are not anticipated to be characteristically hazardous under the federal regulations, even when the feedstock is less than 50 percent coal. Gasification solids that are produced from feedstocks of less than 50 percent coal will be characterized and managed in accordance with applicable LORS.

Liquid Wastes

There will be no direct surface water discharge of industrial wastewater or storm water. Process wastewater will be treated on site and recycled within the gasification and power plant systems. Other wastewaters from cooling tower blowdown and raw water treatment will be collected and directed to on-site underground injection wells that do not impact underground sources of drinking water. The water is expected to be non-hazardous.

The process condensate from gasification is recycled to the maximum practical extent. Gasification blowdown that cannot be recycled is sent to a zero liquid discharge (ZLD) unit where it is treated and recovered as high purity water and a solid filter cake. Any contaminants in the gasification blowdown water are concentrated in the filter cake and are not allowed to mix with the cooling tower blowdown and reject water from the raw water treatment plant.

Sanitary wastewater from the Project restrooms, showers, and kitchens will be disposed of in an on-site leach field. No municipal system is available in the immediate area to serve the Project.

Sour Water/Black Water

Process water produced within the gasification process must be treated to remove dissolved gases (carbon dioxide, ammonia [NH₃], hydrogen sulfide [H₂S] and other trace contaminants) before being recycled to the Slurry Preparation area or the Sour Shift and Gas Cooling unit. The dissolved gases are driven from the water using steam-stripping techniques. The steam provides heat and a sweeping medium to strip (expel) the gases from the water. The sour gas is directed to the Claus SRU.

Zero Liquid Discharge

Most of the gray water from the Fine Gasification Solids Handling System is recycled to the gasification process as wash water or slurry water. A small fraction of the gray water is blown down to the ZLD unit to maintain the Gasification Unit water chemistry within corrosion limits.

The process wastewater from the gasification unit will be treated in a ZLD system which will include a mechanical vapor compression evaporator and crystallization unit. The pure distillate produced from the evaporator will be returned to the gasification or power block for reuse. The solid crystals produced in the crystallizer will be trucked to an approved off-site material disposal facility.

The gasifier wastewater feed first enters a clarification/softening system to reduce precipitant levels for scale-free evaporator operation. Lime and soda ash are used in the clarifier. Small silos for storage of solids or delivery of liquid reagents (slaked lime and soda ash) will be used. A thickener tank and filter will be provided to concentrate clarifier sludge and produce a filter cake for off-site disposal in accordance with applicable federal, state, and local regulations. Polymer additives for the clarifier will be used as necessary. The clarified water will be fed to the evaporator.

The evaporators will concentrate the wastewater to a volume that is about 25 times less than the evaporator feed. The evaporator waste is primarily sodium chloride and sodium formate and is dried into crystallized solids using steam-heated dryers. The dryers and associated equipment will be located in an enclosure protected from the wind and other elements.

The evaporator/crystallizer distillate is recycled to the gasifier system and the crystallized solids are removed by truck for approved off-site disposal. The thickener overflow and filter press filtrate are recycled back to the clarifier/softener system for re-processing.

Deep Well Injection

The Project will have on-site Class I non-hazardous Deep Well Injection (DWI) System for disposal of non-hazardous plant wastewater. The majority of this disposal stream will be cooling tower blowdown and reject water from the water treatment plant. The DWI system will consist of collection piping to route all streams to a common sump system. From the sumps the wastewater will be routed to DWI pumps. The deep well pump discharge will be routed to a system of deep wells, of capacity sufficient to handle the maximum expected Project wastewater rate of about 1,800 gallons per minute (gpm). The total number of deep wells is expected to be approximately 20 (15 operating plus five spares). See Section 5.14, Water Resources, for more information regarding DWI.

Storm Water Management

Storm water management for the Project will be designed to avoid direct discharge to surface waters. Clean storm water runoff will be routed to an on-site storm water retention pond before it is used as makeup water to the cooling towers. Potentially contaminated water will be treated as appropriate and either used for cooling tower makeup or used for gasifier slurry water makeup.

Project Site storm water runoff in non-process areas will be routed to a retention pond capable of holding the site runoff from a once-in 50 years, 24-hour duration storm event. Any rainfall in excess of this event would overflow to the existing off-site drainage.

Storm water from non-process areas should be relatively clean and can be used as makeup water with little treatment. Runoff from process areas will be separately collected and treated or (at a minimum) tested to determine if contaminant concentrations are within the acceptable criteria for reuse.

Storm water generated at the Project will be managed as follows:

- Non-contact storm water runoff outside the power block and process areas will be routed to the storm water retention pond. After solids have settled and water is determined to be suitable for reuse, storm water will be filtered for suspended solids removal before being used as cooling tower makeup water. If this collected storm water is determined to be contaminated and unsuitable for cooling tower use then it will be reused in the slurry preparation area.
- Storm water that may be contaminated with oil will be separately collected and routed to an oil/water separator. Recovered waste oil from the separator will be disposed off site in accordance with applicable LORS. The separated water will be reused or disposed as described above.
- Storm water runoff from chemical and oil storage areas will be held within the associated secondary containment. Storm water held in these areas will first be tested. If it is acceptable for cooling water makeup, then it will be routed to the retention pond. Oily storm water will be routed through an oil/water separator.
- The solids handling water collection system will capture runoff (storm water and washdown water) from solids handling areas, which include gasification, gasifier solids temporary storage, and inactive feedstock storage. The collection facility will be constructed of concrete, and will provide for mobile equipment access to remove accumulated solids. Water that accumulates within the solids handling collection facility will be reused as make-up to gasification.

A Storm Water Pollution Prevention Plan (SWPPP) will be developed prior to operations. The Project storm water runoff will be managed in accordance with this plan, which will include the measures outlined above. With the implementation of these measures, impacts related to storm water management will be less than significant.

Hazardous Wastes

Various types of hazardous wastes will be generated during operation activities, including spent catalysts, filters and filter cake, sludge, spent caustics and solvents, used oils from equipment maintenance; and oil-contaminated materials such as spent oil filters, rags, or other cleanup materials. Spent catalysts will be returned to the manufacturer for metals reclamation or disposed of in accordance with applicable LORS. Used oil generated will be recycled. Waste filters and filter cake, sludge, spent caustics and solvents, and all other hazardous wastes requiring disposal will be disposed of in a licensed hazardous waste disposal facility. Other occasional waste streams include alkaline- or acid-cleaning solutions used during chemical cleaning of equipment. Table 5.13-3, Summary of Operating Waste Streams and Management Methods, summarizes the hazardous waste to be generated from operation of the Project.

Hazardous wastes will be collected by a licensed hazardous waste hauler and disposed of at a licensed hazardous waste facility. Hazardous wastes will be transported off site using a hazardous waste manifest. Copies of manifest reports, waste analysis, exception reports, destruction certifications, etc., will be kept on site and accessible for inspection for 3 years. Land disposal restriction notices/certificates will be kept on site and accessible for inspection for 5 years.

With the implementation of the Mitigation Measures described in Section 5.13.4.2, below, impacts related to hazardous waste during operations will be less than significant.

5.13.2.3 Abandonment/Closure

Premature closure or unexpected cessation of plant operations will be outlined in the Project's closure plan. The plan will outline steps to secure hazardous and non-hazardous materials and wastes. Such steps will be consistent with best management practices and the Hazardous Materials Business Plan (HMBP) described in Section 5.12, Hazardous Materials, and according to applicable LORS. The plan will include monitoring of vessels and receptacles of hazardous material and wastes, safe cessation of processes using hazardous materials or hazardous wastes, and inspection of secondary containment structures.

Planned permanent closure impacts will be incorporated into the Project closure plan and evaluated at the end of the generating stations' economic operation. The power plant closure plan will document non-hazardous and hazardous waste management practices including: the inventory, management, and disposal of hazardous materials and wastes, and permanent closure of permitted hazardous materials and waste storage units.

5.13.3 Cumulative Impacts Analyses

The Class I, Class II, and Class III landfills and soil and water recycling facilities in the Project area have adequate recycling and disposal capacities for the Project. Therefore, cumulative impacts from the Project Site and other projects in the region are not expected to be significant.

5.13.4 Mitigation Measures

5.13.4.1 Construction

Waste Mitigation (WM) Measure-1

Prior to the initiation of the Project construction phase, construction employees will receive waste-related training. Training will focus on the recognition and proper handling of subsurface soil contamination as well as contingency procedures to be followed to provide worker safety and protect the public.

WM-2

A detailed waste management plan for waste generated during construction will be prepared at least 60 days prior to rough grading to assure proper storage, labeling, packaging, recordkeeping, manifesting, waste minimization principles, and disposal of hazardous materials and waste. A

waste management plan will also be prepared for operation of the Project. The waste management plan will include:

- A description of each hazardous waste stream
- Waste classification procedures
- Waste container and label requirements
- Accumulation, handling, transport, treatment, and disposal procedures for each waste
- Waste minimization procedures
- Preparedness, prevention, contingency, and emergency procedures
- Personnel training

WM-3

Hazardous wastes will be accumulated on site for fewer than 90 days (or other accumulation periods as allowed by 22 CCR, § 66262.34 for hazardous waste generators) and will be managed in accordance with state and federal hazardous waste generator requirements. Hazardous wastes, as well as hazardous materials that are spilled or otherwise become unsuitable for use, will be stored in an appropriately segregated hazardous waste storage area surrounded by a containment structure to control leaks and spills. The containment area will be constructed according to local codes and requirements. Hazardous waste containers and labels will be maintained according to applicable regulations. The hazardous waste storage areas will be inspected and maintained at least weekly, as required.

WM-4

Hazardous wastes will be collected by a licensed hazardous waste hauler and disposed of at a hazardous waste facility. Hazardous wastes are transported off site using a hazardous waste manifest. Copies of manifest reports, waste analysis, exception reports, destruction certifications, etc., will be kept on site and accessible for inspection for 3 years. Land disposal restriction notices/certificates will be kept on site and accessible for inspection for 5 years.

WM-5

Spill control and management procedures will be included in the emergency response procedures developed for the Project prior to operation. 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 the containment, collection, and treatment systems. The spill response procedures are discussed further in Section 5.12, Hazardous Materials Handling.

WM-6

Facility employees will receive hazardous materials training as required by the Occupational Safety & Health Administration (OSHA), Hazard Communication Standard. Additionally, employees will be trained in hazardous waste procedures, spill contingencies, and waste

minimization procedures in accordance with CCR Title 22. Hazardous waste training includes the following subjects:

- Hazardous waste characteristics
- Use and management of containers
- Waste packing
- Marking and labeling
- Accumulation/storage areas
- Inspections
- Emergency equipment preparedness and prevention
- Contingency plan
- Emergency response procedures
- Spill response and containment
- Hazardous waste manifesting and transportation requirements
- Waste minimization practices

WM-7

Procedures to minimize hazardous waste generation will be established. Employees will be trained in procedures to reduce the volume of hazardous wastes generated at the Project. The procurement of hazardous materials will be controlled to minimize surplus materials on site and to prevent unused materials from becoming “off-spec.” Non-hazardous materials will be used in lieu of hazardous materials whenever possible. Hazardous materials will be reused whenever possible. Hazardous wastes will be recycled whenever possible.

Implementation of the above waste management procedures for handling demolition and construction-related debris, and hazardous wastes, where encountered, will mitigate demolition and construction-related impacts to a less-than-significant level. No further mitigation is proposed.

5.13.4.2 Operations

Project Site

The Applicant will update the waste management procedures for construction of the Project Site and implement them for operations at the power plant. In addition, the Applicant will develop and implement procedures and requirements as outlined in the HMBP. These procedures and programs will minimize potential site operations-related impacts.

Off-Site Structures

Periodic inspection and maintenance of the electrical transmission line, the natural gas pipeline, the carbon dioxide pipeline, and the water supply line in accordance with applicable LORS, will mitigate potential operations-related impacts associated with the linear facilities.

5.13.4.3 Monitoring Program

Environmental impacts related to waste management issues caused by construction and operation of the Project are expected to be minimal. Therefore, extensive monitoring programs are not required. Monitoring of generated waste volumes and characteristics during construction and operation of the Project will be conducted in accordance with monitoring and reporting requirements in the appropriate permits that will be obtained for construction and operation.

5.13.5 Laws, Ordinances, Regulations, and Standards

5.13.5.1 Federal

RCRA, 42 United States Code (USC), § 6901 to § 6992k, provides the basic framework for federal regulation of non-hazardous and hazardous waste. RCRA's Subtitle D establishes state responsibility for regulating non-hazardous wastes, while Subtitle C controls the generation, transfer, storage, and disposal of hazardous waste through a comprehensive "cradle to grave" system of hazardous waste management techniques and requirements. The U.S. Environmental Protection Agency (USEPA) is responsible for implementing the law, and the implementing regulations are set forth in 40 Code of Federal Regulations (CFR) 260 *et seq.* The law allows USEPA to delegate the administration of the RCRA programs to the various states provided that the state programs meet the federal requirements. California's program was authorized by USEPA on August 1, 1992, and the California EPA's Department of Toxic Substances Control (DTSC) is responsible for administering the program.

The Clean Water Act (CWA) 33 USC, § 1251 *et seq.* provides the regulatory framework for managing the discharge of wastewater to waters of the U.S. 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.

5.13.5.2 State

Non-hazardous solid waste is regulated by the California Integrated Waste Management Act, Public Resources Code, § 40000 *et seq.* The law 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. Local agencies are required to develop and establish recycling programs, reduce paper waste, purchase recycled products, and implement integrated waste management programs that conform to the state's requirements. County of Kern, Environmental

Health Services Department (EHSD) has the authority to assure the proper storage and disposal of solid waste in Kern County.

Wastewater is regulated under California’s Porter-Cologne Water Quality Control Act, which established a statewide system for water pollution control, Water Code, § 13000 *et seq.* The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are the principal agencies responsible for control of water quality and issuing permits under the NPDES program.

Accumulation of hazardous waste on site is regulated under CCR, § 66262.34. Hazardous waste cannot be stored on site for more than 90 days, so any hazardous waste stored on site at the Project will have to be appropriately transferred within that time period.

As stated previously, RCRA allows states to develop their own programs to regulate hazardous waste. California has developed its own program by passage of the California Hazardous Waste Control Law, California Health and Safety Code, § 25100 *et seq.* It should be noted that California’s Hazardous Waste Control Law includes non-RCRA hazardous wastes. In addition, the law specifies two hazardous waste criteria (Soluble Threshold Limit Concentration and Total Threshold Limit Concentration) that are not required under RCRA. Primary authority for the statewide administration and enforcement of California’s Hazardous Waste Control Law rests with the DTSC. However, the County of Kern EHSD provides most regulatory functions covering those who generate hazardous waste.

5.13.5.3 Local

For hazardous waste, the designated Certified Unified Program Agency (CUPA) for the Project area is the County of Kern EHSD. They have delegated authority to administer state and federal programs. In addition, the EHSD regulates the storage of hazardous materials in underground storage tanks (USTs) and cleanup of petroleum releases from USTs. The EHSD will be contacted in the event of a release of hazardous wastes or materials to the environment. The EHSD assumes enforcement responsibility for the implementation of Title 23 of the CCR and regulates the generation and storage of hazardous waste for the Project area.

The following summarizes the applicable LORS that govern the handling of non-hazardous and hazardous wastes. The LORS applicable to the handling of waste at the Project Site are also summarized in Table 5.13-4, Summary of LORS – Waste Management.

**Table 5.13-4
Summary of LORS – Waste Management**

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Federal Jurisdiction				
RCRA Subtitle C and D, 42 USC § 6901 to § 6992k, and § 6.12.2.1	Regulate non-hazardous and hazardous wastes. Laws implemented by the state.	Section 5.13.5.1	DTSC	DTSC Duty Officer Clovis Field Office 559-297-3901
40 CFR § 260 <i>et seq.</i>	Implementing regulations for RCRA Subtitle C law. Implemented by USEPA by delegating to the state.	Section 5.13.5.1	DTSC	DTSC Duty Officer Clovis Field Office 559-297-3901

**Table 5.13-4
Summary of LORS – Waste Management**

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Federal Clean Water Act, 33 USC § 1251 <i>et seq.</i>	Regulates wastewater discharges to waters of the U.S. The NPDES program is administered at the state level.	Section 5.13.5.1	Central Valley RWQCB	Dale Harvey 559-445-6190
State Jurisdiction				
California Integrated Waste Management Act, Public Resources Code § 40000 <i>et seq.</i>	Implements RCRA regulations for non-hazardous waste.	Section 5.13.5.2	County of Kern EHSD	Matthew Constantine, Director 661-862-8700
Porter-Cologne Water Quality Control Act of 1998, Water Code § 13000 <i>et seq.</i>	Regulates wastewater discharges to surface and groundwater of California. NPDES program implemented by SWRCB.	Section 5.13.5.2	Central Valley RWQCB	Dale Harvey 559-445-6190
22 CCR § 66262.34	Regulates accumulation periods for hazardous waste generators. Typically hazardous waste cannot be stored on site for more than 90 days.	Section 5.13.5.2	DTSC	DTSC Duty Officer Clovis Field Office 559-297-3901
California Hazardous Waste Control Law, California Health and Safety Code § 25100 <i>et seq.</i>	Regulates hazardous waste handling and storage.	Section 5.13.5.2	County of Kern EHSD	Matthew Constantine, Director 661-862-8700
Local Jurisdiction				
County of Kern EHSD	Regulates enforcement responsibility for the implementation of Title 23, Division 3, Chapters 16 and 18 of the CCR, as it relates to hazardous material storage and petroleum UST cleanup.	Section 5.13.5.3	County of Kern EHSD	Matthew Constantine, Director 661-862-8700
County of Kern EHSD	Regulates hazardous waste generator permitting, and hazardous waste handling and storage.	Section 5.13.5.3	County of Kern EHSD	Matthew Constantine, Director 661-862-8700

**Table 5.13-4
Summary of LORS – Waste Management**

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
County of Kern General Plan Public Facilities Element	Will ensure all new development complies with applicable provisions of County Integrated Solid Waste Management Plan.	Section 5.13.5.3	Kern County Planning and Building Department	661-862-8600

Source: California Department of Toxic Substances Control, 2008; Cal/EPA, Central Valley RWQCB, 2008; County of Kern, Planning Department, 2008; County of Kern, Building Department, 2008; and Kern County Environmental Health Services Department, 2008.

Notes:

- CCR = California Code of Regulations
- CFR = Code of Federal Regulations
- DTSC = Department of Toxic Substances Control
- EHSD = Environmental Health Services Department
- LORS = laws, ordinances, regulations, and standards
- NPDES = National Pollutant Discharge Elimination System
- RCRA = Resource Conservation & Recovery Act of 1976
- RWQCB = Regional Water Quality Control Board
- SWRCB = State Water Resources Control Board
- U.S. = United States
- USC = United States Code
- USEPA = U.S. Environmental Protection Agency
- UST = underground storage tank

5.13.6 Involved Agencies and Agency Contacts

Agencies with jurisdiction to issue applicable permits or enforce LORS related to waste management are shown in Table 5.13-5, Agency Contact List for LORS.

**Table 5.13-5
Agency Contact List for LORS**

	Agency	Contact	Address	Telephone
1	DTSC	Noel Laverty DTSC Duty Officer Clovis Field Office	1515 Tollhouse Road Clovis, CA 93611	916-255-3618 559-297-3901
2	County of Kern EHSD	Matthew Constantine, Director	2700 M Street, Suite 300 Bakersfield, CA 93301	661-862-8700
3	RWQCB Central Valley Region	Dale Harvey (NPDES) Surface Water Discharges	1685 E Street Fresno, CA 93706	559-455-6190

Source: California Department of Toxic Substances Control, 2008; Cal/EPA, Central Valley RWQCB, 2008; and Kern County Environmental Health Services Department, 2008.

Notes:

DTSC	=	Department of Toxic Substances Control
EHSD	=	Environmental Health Services Department
LORS	=	laws, ordinances, regulations, and standards
NPDES	=	National Pollutant Discharge Elimination System
RWQCB	=	Regional Water Quality Control Board

5.13.7 Permits Required and Permit Schedule

The Project will apply for a USEPA hazardous waste generator identification number from the DTSC and a hazardous waste generator permit from the County of Kern EHSD.

The Project will be required to develop an HMBP for the County of Kern EHSD.

A summary of applicable permits is presented in Table 5.13-6, Applicable Permits.

**Table 5.13-6
Applicable Permits**

Responsible Agency	Permit/Approval	Schedule
DTSC	USEPA Hazardous Waste Generator Identification Number	30 days prior to generation of hazardous waste
County of Kern EHSD	Hazardous Waste Generator Program Permit	30 days prior to the generation of hazardous waste
County of Kern EHSD	Hazardous Materials Business Plan	30 days prior to the storage and use of hazardous materials

Source: California Department of Toxic Substances Control, 2008; and Kern County Environmental Health Services Department, 2008.

Notes:

DTSC	=	Department of Toxic Substances Control
EHSD	=	Environmental Health Services Department
USEPA	=	U.S. Environmental Protection Agency

5.13.8 References

- Barclays Law Publishers. ND. Barclays Official California Code of Regulations.
- California Department of Toxic Substances Control. 2008. Information downloaded from:
<http://www.dtsc.ca.gov>. March 2008.
- California Environmental Protection Agency (Cal/EPA), Central Valley Regional Water Quality Control Board (WQCB). 2008. Information downloaded from:
<http://www.waterboards.ca.gov/centralvalley>. March 2008.
- California Integrated Waste Management Board (CIWMB). 2008. Information downloaded from: <http://www.ciwmb.ca.gov/SWIS>. March 2008.
- California Stormwater Quality Association. 2004. "Stormwater Best Management Practice Handbook, Industrial and Commercial."
- County of Kern, Building Department. 2008. Information downloaded from:
<http://www.co.kern.ca.us/bid/>. March 2008.
- County of Kern, Planning Department. 2008. Information downloaded from:
<http://www.co.kern.ca.us/planning/>. March 2008.
- Environmental Data Resources Database Report. February, 2008.
- Kern County Environmental Health Services Department. Information downloaded from:
<http://www.co.kern.ca.us/eh>. March 2008.
- Kern County Waste Management Department. 2008. Information downloaded from:
<http://www.co.kern.ca.us/wd/>. March 2008.
- Office of the Federal Register. 1997. Code of Federal Regulations, Title 40, Parts 260 to 265, Revised July 1.
- URS Corporation (URS). 2008. Phase I Site Assessment.

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Adequacy Issue: Adequate Inadequate DATA ADEQUACY WORKSHEET Revision No. 0 Date _____

Technical Area: **Waste Management** Project: _____ Technical Staff: _____

Project Manager: _____ Docket: _____ Technical Senior: _____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (b) (1) (C)	A detailed description of the design, construction and operation of the facilities, specifically including the power generation, cooling, water supply and treatment, waste handling and control, pollution control, fuel handling, and safety, emergency and auxiliary systems, and fuel types and fuel use scenarios; and	Section 5.13.1.1		
Appendix B (e) (1)	A discussion of how facility closure will be accomplished in the event of premature or unexpected cessation of operations.	Section 5.13.2.3		
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	Section 5.13.2, 5.13.3, and 5.13.4		

Adequacy Issue: Adequate Inadequate DATA ADEQUACY WORKSHEET Revision No. 0 Date _____
 Technical Area: **Waste Management** Project: _____ Technical Staff: _____
 Project Manager: Docket: _____ Technical Senior: _____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (12) (A)	<p>A Phase I Environmental Site Assessment (ESA) for the proposed power plant site using methods prescribed by the American Society for Testing and Materials (ASTM) document entitled "Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process" (Designation: E 1527-93, May 1993), which is incorporated by reference in its entirety; or an equivalent method agreed upon by the applicant and the CEC Staff that provides similar documentation of the potential level and extent of site contamination. The Phase I ESA shall have been completed no earlier than one year prior to the filing of the AFC.</p>	Section 5.13.1.1 and Appendix M		
Appendix B (g) (12) (B)	<p>A description of each waste stream estimated to be generated during project construction and operation, including origin, hazardous or nonhazardous classification pursuant to Title 22, California Code of Regulations, § 66261.20 <i>et seq.</i>, chemical composition, estimated annual weight or volume generated, and estimated frequency of generation.</p>	Section 5.13.2.1, 5.13.2.2 Table 5.13-2, and 5.13-3		

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (12) (C)	A description of all waste disposal sites which may feasibly be used for disposal of project wastes. For each site, include the name, location, classification under Title 23, California Code of Regulations, § 2530 <i>et seq.</i> , the daily or annual permitted capacity, daily or annual amounts of waste currently being accepted, the estimated closure date and remaining capacity, and a description of any enforcement action taken by local or state agencies due to waste disposal activities at the site.	Section 5.13.1.2, 5.13.1.3 Table 5.13-1		
Appendix B (g) (12) (D)	A description of management methods for each waste stream, including methods used to minimize waste generation, length of on- and off-site waste storage, re-use and recycling opportunities, waste treatment methods used, and use of contractors for treatment.	Section 5.13.2.1, and 5.13.2.2 Table 5.13-2 and 5.13-3		
Appendix B (h) (1) (B)	A discussion of any measures proposed to improve adverse site conditions.	Section 5.13.4		
Appendix B (h) (1) (D) (v)	The waste disposal system and on-site disposal sites;	Section 5.13.2.1 and 5.13.2.2		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	Section 5.13.5 Table 5.13-4		

Adequacy Issue: Adequate Inadequate DATA ADEQUACY WORKSHEET Revision No. 0 Date _____
 Technical Area: **Waste Management** Project: _____ Technical Staff: _____
 Project Manager: Docket: _____ Technical Senior: _____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Section 5.13.5.4 Table 5.13-5		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Table 5.13-5 Table 5.13-4		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	Section 5.13.5.5 Table 5.13-6		