STOEL RIVES LLP
ATTORNEYS AT LAW

770 L Street, Suite 800
Sacramento, California 95814
main 916.447.0700
fax 916.447.4781
www.stoel.com

JOHN A. MCKINSEY
Direct (916) 319-4746
jamckinsey@stoel.com

December 22, 2006

TN: 38800
DOCKET
79-AFC-4C
DATE: DEC 22 2006
RECD. DEC 22 2006

VIA EMAIL AND HAND DELIVERY

Mr. Christopher Meyer
Compliance Project Manager
California Energy Commission
1516 9th Street, MS-200
Sacramento, CA 95814

Re: Bottle Rock Power Plant (79-AFC-4C)
Pre-Operation Compliance and Submittals

Dear Mr. Meyer:

Bottle Rock Power, LLC ("Bottle Rock Power") makes the following pre-operation submittals for Bottle Rock Power Plant ("BRPP") to comply with pre-operation conditions of certification ("COC") 2-10 (Public Health), 10-2 (Structural Engineering), and 11-4 (Solid Waste Management).

COC 2-10 requires Bottle Rock Power to develop a Cooling Water Management Plan to ensure that the potential for *Legionella* bacterial growth in the BRPP cooling system is kept to a minimum. The BRPP Cooling Water Management Plan, drafted according to the Cooling Technology Institute's guidelines, is enclosed for your consideration.

COC 10-2 requires Bottle Rock Power to report the location and availability of drawings, plans, test reports, and other construction/design documents. These drawings, plans, reports, and related documents are housed in the BRPP Meeting Room, located immediately adjacent to the main turbine building of BRPP.

COC 11-4 requires Bottle Rock Power to submit a Secondary Abatement Waste Disposal Plan to ensure that hazardous wastes are properly disposed of. This Waste Disposal Plan is enclosed for your consideration.

Bottle Rock Power has two outstanding pre-operation submittals to provide to the Compliance Project Manager. COC 5-1.b. (Biology) requires Bottle Rock Power to submit a Biological Resources Mitigation and Monitoring Plan ("BRMIMP"). The BRPP BRMIMP will be submitted to the Compliance Project Manager on or before December 27, 2006. COC 12-7

(Safety) requires Bottle Rock Power to submit certification from a fire safety engineer or insurance company that BRPP is in reasonable compliance with fire safety codes and standards. Completing this certification requires an evaluation of BRPP by Lake County fire officials and California Department of Forestry officials and will be completed according to local and state agency officials' availability during the coming weeks. Bottle Rock Power anticipates submitting this certification the second week of January, 2007.

If you have any questions regarding this submittal, please do not hesitate to call me.

Very truly yours,

John A. McKinsey

Bottle Rock Power, LLC

Bottle Rock Power Plant
Cooling Water Management Plan

I. INTRODUCTION

California Energy Commission (CEC) Condition of Certification (COC) 2-10 states that:

> "The project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is kept to a minimum. The Plan shall be consistent with either staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of *Legionella*" guidelines but in either case, the Plan must include sampling and testing for the presence of *Legionella* bacteria at least every six months. After two years of power plant operation, the project owner may ask the CEC CPM to re-evaluate and revise the Legionella bacteria testing requirement."

Bottle Rock Power, LLC (BRP) has developed this Cooling Water Management Plan for Bottle Rock Power Plant (BRPP) to comply with COC 2-10. The Plan is consistent with the Cooling Technology Institute's "Best Practices for Control of *Legionella*" guidelines. BRP will implement this Plan at the start of BRPP operations, including sampling and testing for the presence of *Legionella* bacteria at least every six months according to procedures detailed in the Plan. After two years of operation, BRP may request the CEC to re-evaluate *Legionella* bacteria testing requirements at BRPP and potentially revise the requirements based upon test results.

II. PLAN OVERVIEW

The Plan ensures that the potential for bacterial growth in BRPP's cooling system is kept to a minimum. This Plan will reduce health risks associated with *Legionella* in BRPP's cooling system through:

- minimizing water stagnation;
- maintaining overall system cleanliness;
- minimizing process leaks into the cooling system that provide nutrients for bacteria;
- applying scale and corrosion inhibitors as appropriate;
- using high efficiency drift eliminators on the cooling tower; and
- controlling the overall microbiological population in the cooling tower.

Existing conditions in the BRPP cooling system help to minimize the potential for the presence, incubation, and proliferation of *Legionella* bacteria. BRPP's cooling tower is equipped with high efficiency drift eliminators, which prevent the escape of water droplets from the tower that might contain *Legionella* bacteria. The cooling tower cycles of concentration demonstrate that there is minimal water stagnation in the cooling tower. The cycles of concentration reflect the degree to which dissolved solids are being concentrated in the circulating water, by comparing the level of solids in the re-circulating water to the level of solids in the original makeup water. The BRPP cooling tower cycles of concentration is 4, meaning that the circulating water has four times the solids concentration of the make up water. The lower the number of the cycles of concentration, the more effective a cooling tower is in controlling the proliferation of bacteria. (*Beychok, 1967*).

The low value for cycles of concentration helps to:

- minimize water stagnation;
- maintain system cleanliness at optimum levels;
- minimize the potential for scale build-up because the concentration of solids is minimized;
- minimize potential nutrients for bacteria; and
- controls overall bacteria populations in the cooling tower.

Collectively, the above factors work to minimize the microbiological population in the cooling tower and significantly reduce the potential for the presence, incubation, and proliferation of *Legionella* bacteria. This Cooling Water Management Plan provides environmental and operational parameters that will aid in minimizing and eliminating the risk of developing *Legionella* in the evaporative cooling water system of BRPP's cooling tower.

III. COOLING WATER MANAGEMENT PLAN COMPONENTS

Microbiological control, recordkeeping, mechanical design, and facility maintenance and operation are the core components of BRPP's Cooling Water Management Plan. Together, these practices will reduce any *Legionella* health risks associated with the BRPP cooling system.

A. Best Practices for Microbiological Control

Microbiological control represents an important aspect of *Legionella* risk minimization. BRP will implement the following best practices for microbiological control to minimize the health risks associated with *Legionella*: monitoring for *Legionella*, routine treatment with halogens, routine on-line disinfection, and emergency disinfection. These best practices will foster the safety of BRPP's cooling system by (1) directly destroying planktonic (free-swimming) bacteria, such as *Legionella*, and (2) indirectly eliminating conditions that favor *Legionella* amplification (multiplication), including eliminating bio-films and amoebae and other protozoa that feed on bio-films and serve as *Legionella* hosts.

The best practices detailed below focus on chemical control parameters. Halogens will be used as the primary disinfectant for the BRPP cooling system, as needed. Halogens which will be used in the system include: chlorine gas, liquid bleach, chlorine dioxide, and stabilized donors such as isocyanurates and hydantoins.

1. Monitoring for *Legionella*

BRP starts from the assumption that the BRPP cooling system can harbor *Legionella* or other organisms which could serve at *Legionella* hosts, and that routine, continuous microbiological control practices must be implemented to minimize the risk of *Legionella* amplification and associated illness. After the first 30 days of operation, BRP will test for *Legionella* and sample for the presence of the bacteria's biological hosts. These test results will dictate the frequency of routine microbiological monitoring necessary to prevent the occurrence of *Legionella*. Microbiological sampling will take place no less than twice a year, with more frequent sampling undertaken if heterotrophic bacteria is found at levels above the target values of Table 1. Routine microbiological monitoring will involve the following practices:

- Evaluate cooling system cleanliness and the effectiveness of microbial control by visual inspection and by regularly monitoring bulk water (planktonic) and surface (sessile) microbial populations.
- Check the cooling tower deck and tower fill for gross evidence of bio-fouling.
- Inspect the mist eliminator section of the cooling tower for biological deposits when operations permit.
- Collect suspected biological deposits for microscopic examination to confirm biological content and the presence or absence of amoebae and ciliated protozoa.
- Use dip-slides or other culturing techniques to quantify total aerobic heterotrophic bacteria populations in bulk water and on surfaces.

In the event of a *Legionella* outbreak BRP will:

- test for *Legionella* bacteria to identify potential sources of the organism.
- evaluate the effectiveness of disinfection procedures.
- utilize a laboratory experienced in performing *Legionella* analyses on environmental samples when testing is required.
- concurrently sample bulk water and surface deposits for microscopic detection of higher life forms, along with total aerobic heterotrophic counts.
    - collect bulk water samples from several locations within the system, including makeup water, hot return water, basin water, and from sample taps on heat exchangers remote from the cooling tower, if available.
    - collect deposit samples from the basin walls, tower fill, and distribution decks where evident.

When sampling *Legionella* and aerobic heterotrophic bacteria, BRP will evaluate the level of health risk according to levels found and increase the frequency of microbiological monitoring if sampling results are above the target values of Table 1 or otherwise do not conclusively indicate a low health risk:

- A low *Legionella* count with an undetectable or small population of amoebae, protozoa, and higher life forms and low bio-film counts is a good indication of a clean, well-maintained system with low risk to health.
- A low bulk water *Legionella* count along with low numbers of amoeba, protozoa, and other higher life forms in deposits, but with high bio-film counts may indicate a low present health risk but suggests the potential for future problems if steps are not taken to reduce bio-film levels. Since protozoa that promote *Legionella* amplification graze on bacteria in bio-films, the presence of significant bio-film can promote the development of higher, and thus potentially more dangerous, levels of *Legionella*.
- A low bulk water *Legionella* count associated with a large number of higher life forms indicates a strong potential for amplification, and the low *Legionella* count cannot, therefore, be interpreted to indicate a system with a low health risk.

Table 1: Target Values for *Legionella* and Aerobic Heterotrophic Bacteria

Parameter	Dip-slides	Agar Pour Plate or Petrifilm	Microscopic Exam
Planktonic Counts (Bulk Water)	<10,000 CFU/mL	<10,000 CFU/mL	No higher life forms
Sessile Counts (Surfaces)	<100,000 CFU/cm^2	<100,000 CFU/cm^2	No higher life forms
Deposits	NA	NA	No higher life forms

Results from dip-slides, agar pour plates, or Petrifilm will determine the level of colony forming units (CFU per milliliter or per square centimeter) of total aerobic heterotrophic bacteria. *Legionella* bacteria are not detected by these conventional plate count media and testing will be done by a lab equipped for such analyses. Microscopic examination for the presence of higher life forms will be accomplished with specialized microscopy equipment.

2. Routine Treatment

a. Continuous Application of Halogens

Should *Legionella* bacteria be found in the BRPP cooling system or the levels of aerobic heterotrophic bacteria rise above the target values in Table 1, BRPP will feed a source of halogen, such as chlorine or bromine, continuously to maintain free residuals of 0.5 to 1.0 ppm in the cooling tower hot return water. BRP will:

- add stabilized halogen products according to label instructions, and in amounts sufficient to maintain a measurable halogen residual.
- periodically monitor the residual at sample points throughout the cooling water system to insure adequate distribution.
- maintain a target pH of 8.5 to 9.0.

- allow no discharge system water directly to surface water unless it is dehalogenized.
- as necessary, use a bio-dispersant or bio-detergent to aid in the penetration, removal, and dispersion of bio-film and to increase the efficacy of the biocide.

b. Intermittent Use of Halogens

While continuous halogenation is always preferred to minimize the risk of *Legionella*, if continuous halogenation is not possible, intermittent use of halogen will be implemented. BRP will:

- establish a free residual monitoring program throughout the distribution system as a minimum control program.
- add stabilized halogen products according to the label instructions to achieve a measurable halogen residual.
- establish a free halogen residual of at least 1.0 ppm and hold this residual for no less than one hour each day.
- take bulk water and sessile counts and perform a microscopic examination of deposit samples to ensure that the concentration and duration of halogen residuals are adequate.
- add a bio-dispersant as necessary to aid in penetrating the bio-film and may increase the efficacy of the biocide.
- not discharge system water directly to surface water unless it has been de-halogenized
- use a non-oxidizing biocide as necessary to maintain the cleanliness of BRPP's cooling system if it is treated intermittently with halogens. The choice of non-oxidizing biocide will be based on the results of toxicant evaluations.
- re-apply as necessary, according to the results of the bio-monitoring.

3. Routine On-Line Disinfection: Hyper-halogenation

Periodic hyper-halogenation will be used as necessary to discourage development of large populations of *Legionella* and their host organisms. Hyper-halogenation involves maintaining a minimum of 5 ppm free halogen residual for at least 6 hours. Periodic on-line disinfection will be performed if BRPP's cooling system:

- has process leaks;
- has heavy bio-fouling;
- has reclaimed wastewater as makeup;
- has been stagnant for a long time;
- has total aerobic bacteria counts that regularly exceed 100,000 CFU/ml; or
- *Legionella* test results show greater than 100 CFU/ml.

5. Emergency Disinfection

The following emergency disinfection procedure, based upon OSHA and other governmental agency recommendations, may require modification based upon BRPP's

system volume and water availability.

Emergency disinfection will be performed when:

- very high *Legionella* counts exist (i.e., >1000 CFU/ml);
- Legionnaires' Disease is known or suspected and may be associated with the cooling tower; or
- very high total microbial counts (>100,000 CFU/mL) re-appear within 24 hours of a routine disinfection (hyper-halogenation).

The following procedure will be implemented when emergency disinfection is necessary:

- Remove heat load from the cooling system, if possible.
- Shut off fans associated with the cooling equipment.
- Shut off the system blowdown.
- Keep makeup water valves open and operating.
- Close building air intake vents in the vicinity of the cooling tower (especially those downwind) until the cleaning procedure is complete.
- Continue to operate the re-circulating water pumps.
- Add a biocide sufficient to achieve 25 to 50 ppm of free residual halogen.
- Add an appropriate bio-dispersant (and antifoam if needed).
- Maintain 10 ppm free residual halogen for 24 hours.
- Add more biocide as needed to maintain the 10 ppm residual.
- Monitor the system pH, since the rate of halogen disinfection slows at higher pH values.
- Add acid and/or reduce cycles in order to achieve and maintain a pH of less than 8.0 (for chlorine-based biocides) or 8.5 (for bromine-based biocides).
- Drain the system to the re-injection well.
- Refill the system and repeat the above steps.
- Inspect the tower after draining the system for a second time; if a bio-film is evident, repeat the procedure.
- When no bio-film is obvious, mechanically clean the tower fill, tower supports, cell partitions, and sump.
- Workers engaged in tower cleaning will wear (at a minimum) eye protection and a 1/2 face respirator with High Efficiency Particulate (HEPA) filters, or other filters capable of removing >1 micron particles.
- Refill and recharge the system to achieve a 10 ppm free halogen residual.
- Hold this residual for one hour and then drain the system until it is free of turbidity.
- Refill the system and charge with appropriate corrosion and deposit control chemicals, re-establish normal bio-control residuals and put the cooling tower back into service.

B. Recordkeeping

Records will be kept of all precautionary measures and treatments, monitoring results

and remedial work done to ensure the risk of *Legionella* bacteria is minimized. Sufficient information will be recorded to show the particular measures taken, including but not limited to:

- Instances of mechanical cooling tower cleaning.
- The frequency and amount of biocide addition.
- Halogen residual levels.
- Results of bio-monitoring.
- Other significant aspects of the tower operation.

C. Mechanical Design Considerations

BRPP is currently equipped with high efficiency drift eliminators. In the future, a new or retrofit of tower or component design will take account of the design considerations discussed below in choosing technologies to integrate into the cooling system to reduce the risk of *Legionella*.

1. Drift Eliminators (DE)

State-of-the-art high-efficiency nesting type eliminators should be used to minimize drift mass flow. Drift eliminators are intended to prevent escape of entrained water droplets that might contain *Legionella* bacteria from the tower. Proper installation of eliminators and air seals will minimize the drift rate. Tower design should avoid locally elevated exit air velocities at the eliminators.

2. Plenum

The plenum should be designed to maintain airflow within the tolerances of the design throughout, particularly at the center of the eliminator bank in BRPP's counterflow tower. Tower design should supply effective eliminator air seals, covering all open area beyond the eliminators themselves, since small gaps allow elevated local velocities and can lead to substantial water droplet formation and leakage.

3. Water Distribution, Falling Water, and Fill

- Tower design should provide distribution components to minimize the creation of very small droplets which are more likely to escape through the drift eliminators.
- Tower design should provide distribution components to minimize masses of water at louver or eliminator locations that might by-pass air-seals allowing circulating water to enter the exit airstream.
- Tower design should provide tower air inlet and rain zones that minimize splash-out and aerosol droplet creation.
- Tower design should use the appropriate fill for proper air and water management to control the drift rate and splash-out.
- Fill selection should be based upon expected water quality and treatment, to minimize fouling and poor water distribution of water that might encourage Legionella propagation.

4. Fan and Fan Cylinder

- Tower design should provide fan cylinder seal integrity such that no extraneous water can make its way to the fan even if the cooling tower water basin overflows.

5. Siting and Flow

- System design should place BRPP's cooling tower away from building air intakes in such a manner that cooling tower drift or splash-out is not fed into the building air supply system.
- The tower should provide good continuous water flow through and out of the tower to move water effectively.
- There should be no dead flow locations in the cooling tower basin.
- System design should provide discharge piping and equalizers to move water effectively with no dead flow locations.
- Special attention should be paid to equalizer piping to ensure these areas are not stagnant.

D. Cooling Tower Inspections and Physical Maintenance

BRPP operators will visually inspect the cooling tower frequently to maintain the tower and its components in good working order. General inspection and maintenance procedures are as follows:

- During maintenance and inspection operations, plant safety procedures will always be followed.
- Organic fouling, dirt or debris will be removed.
- Defects in the components or their installation, which may lead to emission of excessive drift or spray, will be corrected.
- Inspection will also be performed on the outside of the unit for general cleanliness, leaks, or any evidence of biomass.
    - Pools of water or small droplets emanating from the tower may be a sign of excessive drift.
    - Appearance of heavy deposits on the outside of the tower may be an indication of excessive water loss due to windage or other factors.

1. Water Treatment System

The water treatment system will be inspected for proper operation of all components.

2. Louvers

Louvers and the surrounding area will be inspected for biomass and scale.

- Louvers should be undamaged and will be positioned, as designed, to prevent spray from splashing or blowing out of the tower.
- Missing or damaged louvers will be replaced.
- Out of position louvers will be properly placed back in position, making sure retaining hardware is also correctly placed.

3. Piping Dead Legs

The circulating water piping system will be inspected for dead legs.

- Any dead legs which cannot be removed or replaced with a circulating line will be bled frequently.
- Equalizer piping between adjacent cooling tower cells will be bled frequently.

4. Cold Water Basin

The cold water basin will be inspected for build-up of organic matter, dirt, and debris.

- If any significant accumulation of debris or sludge is found, the accumulation will be removed.
- If the tower is taken out of service, the basin will be cleaned, if needed.

5. Counterflow Spray System

The spray system will be properly positioned and free of fouling.

- Missing nozzles will be replaced.
- Misaligned nozzles that spray water up into the eliminators will be correctly re-positioned.
- Leaks at piping joints or nozzles that spray water into the eliminators will be repaired.

6. Eliminators

The eliminator system is critical for controlling the water droplets leaving the cooling tower.

- Drift eliminators will be inspected for build-up of organic and inorganic material and for deterioration or damage.
- Eliminators will be cleaned as needed.
- Missing or damaged eliminators will be replaced.
- Any gaps in or between eliminators or between eliminators and casing, structural elements, air seals, or plenum framework will be corrected.

7. Fill

Fill air entrance and exit surfaces will be thoroughly inspected.

- Evidence of fouling will trigger a more extensive inspection and review of water treatment and maintenance procedures.
- Damaged or deteriorated fill will be replaced.

BOTTLE ROCK POWER, LLC

HAZARDOUS WASTE MINIMIZATION AND MANAGEMENT PLAN

CONTENTS

1. Compliance Statement
2. Minimization Goals
3. Process Descriptions
4. Definitions
5. Sampling
6. Chain of Custody
7. Certified Hazardous Waste Analysis
8. Waste Profiles
9. Disposal Options
10. Hazardous Waste Containers
11. Hazardous Storage Areas
12. Employee/Contractor Training
13. Emergency Response
14. Facility Audits
15. Record Keeping
16. Program Review
17. Approval Signatures

APPENDICES

A. Waste Disposal Facilities

B. Certified Hazardous Waste Laboratories

C. Certified Hazardous Waste Transporters

D. Hazardous Waste Management Guidelines

BOTTLE ROCK POWER, LLC

HAZARDOUS WASTE MINIMIZATION AND MANAGEMENT PLAN

Compliance Statement

Bottle Rock Power, LLC's (BRP) Hazardous Waste Minimization and Management Plan was developed to comply with federal and state environmental laws and regulations including, but not limited to, California Senate Bill 14, US DOT Hazardous Materials Management, USEPA and California Environmental Protection (Toxics) Control Laws, various corresponding regulations, and other applicable laws, ordinances, rules, regulations, and statutes.

Waste Minimization Goals

BRP will make every effort to reduce (hazardous) waste by using the principles of: source reduction, recycling, treatment, and residual disposal. Source reduction includes substituting non-hazardous starting materials whenever possible. "Green" products usually become (biodegradable) wastes. A *waste* is a material that can no longer be used for its intended purpose. Recycling may be appropriate when there is still value in the used material. Treatment renders hazardous waste non-hazardous. Examples of treatment include chemical stabilization, air-stripping, pyrolysis, and the like. After the waste stream has been consolidated, the residuals produced may be land filled as non-hazardous.

Geothermal Process Descriptions

Drilling-
Drilling wastes include but are not limited to, steam hole boring activities, generation of mud/sludge by-products, solid and oily solids, petroleum hydrocarbon/water mixtures, cutting oils, greases.

Pipeline Operations-
Pipeline operations include all steam lines (pipe) conveyances from wellhead to turbine, solid debris contaminated with oil, petroleum hydrocarbon/water mixtures, cutting oils, lubricants, H_2S abatement chemicals, mineral scale, and deteriorated pipes and valves.

Plant Operations-
Superheated steam is routed from pipelines to the turbine-generator from which it exhausts into a tube and shell or surface condenser. The steam that is condensed to hot water on the outside of the tubes is collected in the hotwell and then pumped to the cooling tower where it co-mingles with the circulating cooling water in the cooling tower basin. The hot circulating cooling water is air cooled as it cascades down through cooling tower fill material and into the cooling tower basin from where it is then pumped back through the condenser tubes for use as cooling water. Air emissions contributed by the tower occur when any pollutants

absorbed by the cooling water are 'stripped' from the hot cooling water as it falls through the tower and into the basin.

Preventative Equipment Maintenance (e.g. turbine overhauls)-
Periodic maintenance is required to replace, repair, and re-condition equipment especially that which has been in direct contact with the geothermal steam - condensate cycle. Mineral deposits containing arsenic, boron, silica and mercury often build up in/on pipelines, equipment and conveyances that increase wear and require various preventative maintenance practices such as lubrication (e.g. gear boxes, pumps, etc.).

H_2S Abatement Systems-
In order to comply with the facility's Permit to Operate issued by the Lake County Air Quality Management District (LCAQMD), the Power Plant must control (abate) hydrogen sulfide (H_2S) gas concentrations contained in both the steam supply to allowable regulatory mass emission limits. H_2S abatement systems include: direct chemical injection at the wellhead using hydrogen peroxide and sodium hydroxide (caustic soda) during drilling operations; chemical removal (scrubbing) from the non-condensible gas removed from the main condenser (Stretford); aqueous chemical oxidation (iron chelate injection) into the cooling tower basin and/or condensate lines.

Definitions

Analysis Pending means that the material has not been designated as a waste until certified hazardous waste analysis indicates that it actually is hazardous waste.

Hazardous Waste is a type of waste stream that may be specifically listed in federal and/or state environmental regulations and/or may possess one or more of the following *characteristics*: Reactive, Ignitable, Toxic and Corrosive that would render it as hazardous.

Hazardous Waste Manifest is a multiple copy document that tracks hazardous waste from cradle to grave. Each entity involved with the waste management process will have a valid EPA ID Number specific to its function (e.g. Generator, Transporter, Disposal Site Operator).

Non-RCRA is a category of hazardous waste regulated by the California Department of Toxic Substances Control.

RCRA-Waste is regulated by the United States Environmental Protection Agency (EPA).

Satellite (Workplace) Accumulation locations are secured (monitored) areas within the facility operations which may have one or more hazardous waste containers stored therein.

Note: Hazardous waste container volumes exceeding 55 gallons, 220 cu ft. or 500 pounds are not permitted to be stored in these designated areas for longer than 90 days from the date waste first placed there.

Waste is a material that can no longer be used for its intended purpose. If a material is designated a waste, then source reduction and recycling will be utilized to the maximum extent practical.

Sampling

Waste streams with varying physical properties (e.g. solid, liquid, gas, mixtures, etc.) are to be sampled using standard EPA or other equivalent methods that will yield a representative waste analysis (profile) facilitating cost-effective disposal.

Chain of Custody

A Chain of Custody (COC) form is required to track the physical progress from collection to final report whenever a sample is to be analyzed by third party laboratory services. This quality control/assurance protocol guarantees that the sample has been properly handled, identified, stored, preserved, transported to and received by an approved certified hazardous waste laboratory (see Appendix B for a current list and COC forms).

Certified Hazardous Waste Analysis

Third party laboratories performing water and/or hazardous waste analyses for BRP shall be qualified and certified by governing local, state and federal agencies having jurisdiction, such as the California Department of Health Services and US EPA. Quality control documentation shall be submitted with each report to verify the statistical validity of the data.

Waste Profiles

Disposal facilities require accurate waste characteristic determinations in order for the waste stream to be legally buried in a land fill. These waste profiles confirm the listed waste code or the toxicity, ignitability, reactivity, and corrosivity characteristics of each waste stream that is documented on the hazardous waste manifest along with the waste profile number, generator, transporter, and disposal site required information.

Disposal Options

The BRP Plant Manager or designated representative will be responsible for approving and signing the Hazardous Waste Manifest prior to disposal off-site. The specific disposal option and location will be selected based on the nature and regulatory status of the waste stream in question. Where possible, waste will be minimized or rendered non-hazardous to the maximum extent practical and disposed of in a Class III (*sanitary*) land fill.

Certain wastes containing asbestos or other special wastes may require disposal in a more restricted (protected) Class II land fill. In certain circumstances, wastes may have to be treated to remove, stabilize or isolate harmful constituents from leaching out. These treated materials are still technically hazardous wastes until the final disposal condition has been determined.

The most hazardous wastes will be disposed at a Class I landfill licensed and certified to accept RCRA and non-RCRA wastes. These Class I facilities require accurate waste profiling that is confirmed when the shipment is delivered to the disposal site. If the waste characteristics do not match the approved profile, the waste load is rejected and sent back to the site of origin at the generator's expense.

Hazardous Waste Containers

Handling-

Hazardous waste containers may include open roll top dumpsters (3-20 cubic yards.); 5, 30 and 55-gallon DOT approved drums, poly tanks, and the like. Forklifts, hand trucks and other mechanical devices (roll-off bins) will be used to assist with handling (placement) of these containers whenever possible.

Labeling-

Containers will be properly labeled (indelible ink) with the generator name, address, EPA ID number, proper DOT shipping description, physical state, chemical hazards, waste profile (if applicable), and the accumulation start date.

Hazardous Storage Areas

Satellite Accumulation collection points will be designated at various Steamfield and Power Plant locations. Waste streams managed on 90-day storage cycles will be stored in a secured part of the facility inside secondary containment and under direct supervision (control) of BRP employees. All containers taken to and removed from the storage area will be accounted for using a Container Log-In Sheet. These hazardous waste storage areas will also be clearly identified in

English and Spanish. Each area will have a fire extinguisher, emergency eye wash, first aid, and spill response kits stocked and available for use.

Facility Audits

Each hazardous waste storage area will be inspected weekly for drum staging and compatibility, available emergency response equipment, housekeeping, container breaches, releases into containment, other safety and health-related issues. Any hazards noted will be identified and corrected in a timely fashion. Audits will be performed, documented, and placed in the BRP central file.

Employee/Contractor Training

BRP employees will receive baseline training on hazardous waste management practices as described in this Plan. They will also receive such training when revisions are made as well as annual refresher training. Contractors will receive an initial orientation of the Plan, but will ultimately be responsible for the management of the waste streams that they generate unless otherwise contractually specified.

Emergency Response Procedures

These procedures include initiating the facility emergency action plan, summoning EMS, evacuation routes, responding to chemical releases, fires or explosions; and making regulatory notifications (e.g. Lake County Office of Emergency Services-Sheriff, California Department of Toxic Substances Control, US EPA, Lake County Air Management District, Central Valley Regional Water Quality Control Board, California Department of Fish and Game, and State Fire Marshall, etc.)

Record Keeping

All documentation related to hazardous waste minimization activities and management efforts (e.g. manifests, lab analysis, waste profiles, facility audits, training sign-in sheets, container logs, incident/correction reports, etc.) will be retained in the BRP active central file for three years and then archived indefinitely thereafter.

Program Review

This Plan will be revised at least every two years (biennially) or when conditions or circumstances warrant more frequent revision.

BOTTLE ROCK POWER, LLC

HAZARDOUS WASTE MINIMIZATION AND MANAGEMENT PLAN

Approval Signatures

Reviewed By: _____ Date_____

Approved By: _____ Date_____

Appendices

A. Waste Disposal (Recycle) Facilities
B. Certified Hazardous Waste Laboratories
C. Certified Hazardous Waste Transporters
D. Hazardous Waste Management Guidelines

Waste Disposal Facilities

Hazardous Waste

Chemical Waste Management- Kettlemen City, CA 93210	(559) 386-9711

Non-Hazardous Debris

Lake County Landfill 16015 Davis Ave. Clearlake, CA 95422	(707) 994-5888
Chemical Waste Management- Kettlemen City, CA 93210	(559) 386-9711
Clean Harbors-Button Willow, CA 93206	(661) 762-6200
Cotati Landfill 500 Meacham Road Petaluma, CA 94952	(707) 565-7940

Recyclers

Chico Drain Oil Service 1618 W. 5th St., Chico, CA 95926	(800) 733-9043
Safety Kleen 5750 Commerce Blvd. Rohnert Park, CA 94928	(707) 584-0415

DHS Certified Hazardous Waste Labs

Analytical Sciences 110 Liberty St., Petaluma, CA 94952	(707) 769-3128
Alpha Analytical 208 Mason St., Ukiah, CA 95482	(707) 468-0401
Sequoia Analytical 1455 McDowell Blvd., Petaluma, CA 94954	(707) 792-1865
Brelje and Race 425 S. E St., Santa Rosa, CA 95404	(707) 544-8807
ThermoChem 3414 Regional Parkway, Ste A Santa Rosa 95403	(707) 575-1310

Hazardous Waste Transporters

Den Beste Transportation Inc. Windsor, CA	(707) 838-1407
Rebo Trucking Service, Cloverdale, CA	(707) 744-8950
MPE Services P.O. Box 370 Yolo, CA 95697	(800) 245-9518

BOTTLE ROCK POWER, LLC

HAZARDOUS WASTE MINIMIZATION AND MANAGEMENT PLAN

HAZARDOUS WASTE MANAGEMENT GUIDELINES

(Used Oil)
CONTENTS
Background
Definitions
Facility Sources
Generator Requirements
Collection/Storage
Sampling/Analysis
Waste Profile/Manifesting
Transportation
Disposal Options
Record keeping
Employee Training

APPENDICES-Facility Waste Streams
Used Oil
Safety Kleen
Sandblast(ed) Sand
Sulfur Sludge
- Stretford
- Cooling Tower
- Pipeline

Oily Solids
Oily debris
Solid Contaminated Debris-Geothermal (As, Hg, etc.)
Solid Contaminated Debris- (Other)
Pipeline/Equipment Geothermal Scale