June 23, 2009

U.S. Environmental Protection Agency
Ground Water Office (WTR-9)
75 Hawthorne Street
San Francisco, CA 94105

ATTN: Nancy Rumrill

RE: Comments on Revised Draft Lahaina, HI WWRF UIC Permit Number HI50710003

Dear Ms Rumrill:

I am providing comments herein regarding the referenced Underground Injection Control (UIC) Permit that U.S. Environmental Protection Agency (EPA) has proposed issuing to the applicant, County of Maui for the Lahaina Wastewater Reclamation Facility (WWRF).

Comment No. 1 – Request for Additional Public Hearing

I want to thank the EPA for having a public hearing on the draft permit and for making changes in the proposed revised draft permit to reflect the concerns expressed by our community at the public hearing. I support in concept the injection volume/rate limitation, injection fluid limitations, the limitation of total nitrogen mass loading, the interim injection fluid limitations on fecal indicator bacteria, and the wastewater treatment requirement for attaining R-1 standards by non-chlorine disinfection. However, specific comments are submitted herein in regards to further development of these permit conditions.

I am requesting a public hearing in order that additional time is allowed to develop these comments and provide public input to EPA on the revised draft permit conditions.

Comment No. 2 - Classify facility as a major permit and provide a full Fact Sheet

In the Statement of Basis, EPA proposes mass nitrogen limitations to minimize the potential for impacts to down gradient sources of drinking water and the environment. Given the real and potential adverse impacts to public health and the environment, a greater level of detail should be provided to the public including an explanation of why the discharges are not being regulated under the Clean Water Act NPDES permits, and the technical and regulatory basis for the proposed limitations. For example, describe how the proposed injection rate limits were derived from the County injectate data or provide the technical basis for the Total Nitrogen action level of 10 mg/L.

Comment No. 3 - Part II.C. 3. Injection Volume Rate Limitation

The draft permit proposes 7.0 MGD as the average weekly injection rate and 10.0 MGD as the maximum for any one day. The Statement of Basis says the County can meet these limits based on review of last 4.5 years of flow data. It also says that the average design treatment capacity is 9 MGD if both the 1975 and 1985 sides of the plant are used and that the facility currently treats 4-6 MGD using the 1985 side only. I request that the permit limit total effluent (combined injectate and reuse flows) to the reliable plant capacity to treat to required

standards. I request that the Statement of Basis or Fact Sheet describe the current plant treatment capacity and how the limits were derived, including any consideration of current plant performance data. If allowances are included for future growth or restoration of capacity from the 1975 plant, these allocations should be explicitly identified.

According to information available on the County of Maui website, "the reliable plant capacity for liquids treatment is currently approximately 4.5 mgd on an ADW basis. The estimated ADW capacity is below the average observed flow to the plant. It is probable that the plant has not had any problems meeting permit requirements because the third clarifier has been available during peak months. If it is assumed that all secondary clarifiers are in service, the maximum month capacity is 6.6 mgd, which translates to an ADW capacity of 5.5 mgd." (Schematic **Design Report Lahaina Wastewater Reclamation Facility; CH2M** HILL, **September** 20, 2006 **Project Number:** 176853.PS.02 available on the web at http://www.co.maui.hi.us/documents/Environmental%20Management/Wastewater%20Division/wwrfreport.PDF)

Comment No. 4 - Part II.C.d Injection Fluid Limitations for BOD_5 and TSS

I request that the permit limitations reflect the minimum secondary treatment standards as defined by EPA at Code of Federal Regulations (CFR) Title 40 Part 133 (40 CFR Part 133). Specifically, for composite samples, in addition to a 30-day average concentration of 30 mg/L for BOD_5 and TSS, I request a 7-day average concentration limit of 45 mg/L for BOD_5 and TSS. I request mass limitations in addition to concentration limits for BOD_5 and TSS. I request that the proposed grab sample concentration limit of 60 mg/L limit for BOD_5 and TSS be maintained. If EPA does not honor these requests, I request an explanation of why these minimum treatment standards would not apply.

According to U.S. EPA NPDES Permit Writer's Manual [PDF Format] - Chapter 5, Section 5.2, the 1972 CWA required POTWs to meet performance-based requirements based on available wastewater treatment technology that all Publicly Owned Treatment Works were required to meet by July 1, 1977. More specifically, Section 301(b) (1) (B) of the CWA requires that EPA develop secondary treatment standards for POTWs as defined in Section 304(d) (1) of the Act. Based on this statutory requirement, EPA developed secondary treatment regulations which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD5, TSS, and pH. Secondary treatment standards, therefore, are defined by the limitations provided in Exhibit 1

EXHIBIT 1
Secondary Treatment Standards
Parameter 30-Day /Average 7-Day Average
5-Day BOD 30 mg/l 45 mg/l
TSS 30 mg/l 45 mg/l
pH 6 - 9 s.u. (instantaneous) –

Removal 85% BOD5 and TSS –

According to 40 CFR §122.45(f), permit writers must apply these secondary treatment standards as mass-based limits using the design flow of the plant. Permit writers may also apply concentration-based effluent limitations for both 30-day and7-day average limitations.

Comment No. 5- Part II.C. 4.e Total Nitrogen Action Levels

I previously requested that the action level be lowered to 7 mg/L total nitrogen with a daily maximum effluent limitation of 10 mg/L Please provide the basis for the proposed action level of 10 mg/L total nitrogen. I request that the permit conditions include increased monitoring frequency to daily monitoring if the action level is exceeded in order that the required reporting and corrective actions take place in a shorter time frame than currently proposed.

Comment No. 6 - Part II.C. 5 Total Nitrogen Mass Limits

I support having total nitrogen mass limitations. However, I request an expedited schedule for nitrogen reductions (ie. greater reduction of nitrogen in a shorter time frame). Exhibit 2 is a table of estimated current nitrogen mass loading to the injection wells derived from monthly average effluent total nitrogen concentration, effluent flow, and injection rates provided by County of Maui Wastewater Reclamation Department.

Exhibit 2 – Estimated Current Lahaina Treatment Plant Total Nitrogen Loads

Year	Avg Effluent /Injectate Total Nitrogen (mg/L)	Injection Well Volumetric Flow Rate (MGD)	Injectate Total Daily Nitrogen Load (lbs/day)	Injectate Nitrogen Mass (lbs/30-day month)
2006	7.38	3.49	216	6,469
2007	6.63	3.15	174	5,228
2008	6.60	3.40	187	5,607
mean	6.87	3.34	192	5,768

The proposed permit has phased reduction in total nitrogen limits with the final effluent limits of 6000 lbs/ calendar month, and 15,000 per calendar quarter by December 31, 2015. The proposed permit requirements, while representing significant reductions from previously permitted loads, do not seem to propose a significant reduction in actual monthly nitrogen loads being released to the environment from the treatment plant. I request that the Statement of Basis of Fact Sheet include comparison of proposed limits to current pollutant loads, and percent reduction over current discharges.

I request that mass limits be expressed as pounds per day, in keeping with pending Total Maximum Daily Load (TMDL) requirements. I request that reporting of Total Nitrogen mass be monthly rather than quarterly. I request that the permit contain a reopener clause to allow limits to be changed in the future based on a TMDL. I request EPA set a high

priority on completion of TMDL studies in areas where waters may be impaired due to the injection of the Lahaina WWRF effluent.

Comment 7 PART II C.6. Interim Injection Fluid Limitations

I support the interim requirement to monitor the effluent for fecal indicator bacteria. I request that EPA require the permittee to conduct a microbial characterization of effluent to include identification of pathogens, indicator organisms, and antibiotic resistant organisms. Study should include a demonstration that effluent does not contain levels of microorganisms that are harmful to human health. This characterization should be done for effluents for any method of disposal considered (injection or reuse). This characterization is necessary to determine if greater levels of disinfection or different indicators are needed in order to protect public health and the environment. Emerging issues include that existing disinfection technology and fecal indicators do not adequately protect against viruses, and emerging anti-biotic resistant bacteria.

According to the **Report of the Experts Scientific Workshop On Critical Research Needs for the Development of New or Revised Recreational Water Quality Criteria (EPA 823-R-07-006),** wastewater treatment/disinfection may be effective in reducing the number of these traditional fecal indicators but ineffective in reducing/inactivating some pathogens of concern (Blatchley et al., 2007). Whether the criteria are protective would depend on the effectiveness of treatment in reducing the levels of pathogens and the relative reduction in indicator organisms. According to the findings of the experts' workgroup, "Secondary wastewater treatment with chlorination could provide a false sense of security for protozoa and viruses. This reflects the higher degree of effectiveness of chlorine in killing/deactivating bacteria relative to viruses and protozoa. Given that current indicators are bacteria and would be reduced to a greater extent than viruses and protozoa, low indicator levels might suggest that waters impacted by POTWs were relatively pathogen-free when they still contained a significant virus and
protozoan load"

Blatchley, ER, III; Gong, WL; Alleman, JE; Rose, JB; Huffman, DE; Otaki, M; Lisle, JT. 2007. Effects of wastewater disinfection on waterborne bacteria and viruses. Water Environment Research 79(1): 81-92

In addition I request that a maximum chlorine residual limit be set rather than the vague "lowest possible residual chlorine". I request that the permit require injectate monitoring and reporting for total residual chlorine concentration.

Comment 8 - PART II C.7. Wastewater Treatment Requirements

I support the requirement for R-1 treatment standards. I repeat previous requests that EPA require the permittee to conduct a microbial characterization of effluent to include identification of pathogens, indicator organisms, and antibiotic resistant organisms. The study should include a demonstration that effluent does not contain levels of microorganisms that

are harmful to human health. This characterization should be done for effluents for any method of disposal considered (injection or reuse). This characterization is necessary to determine if greater levels of disinfection or different indicators are needed in order to protect public health and the environment. Emerging issues include that existing disinfection technology and fecal indicators do not adequately protect against viruses, and emerging anti-biotic resistant bacteria.

Comment 9 – Part II. D.3 Monitoring Frequency

BOD_5 and TSS are not included in the table of monitoring frequencies. Please clarify the proposed monitoring frequency. I request that the monitoring frequency for BOD_5, TSS, Nitrate-Nitrogen and Total Nitrogen to be three times per week. I request that monitoring frequency be once per day for fecal coliform, total residual chlorine or other indicators of disinfection process performance.

Comment 10 – Part II. D.9 Reporting Frequency

I request that all monthly data be reported monthly. I request that data reported under UIC permits be made available to the public online.

Comment 11 – Request Additional Monitoring

I request that the EPA require monitoring of groundwater and ocean waters to determine the fate and transport of pollutants released by the injection wells, and the impact of injectate on groundwater and ocean water quality. The monitoring wells should be adequate to delineate the effluent plume. This is necessary to demonstrate protection of the Underground Source of Drinking Water (USDW) under the Lahaina Treatment Plant (per the Statement of Basis and 1994 initial permit application), as well as shallow brackish water that may in the future be used as a source of drinking water with reverse osmosis treatment. In addition the monitoring wells will provide information needed to determine the level of treatment needed to protect uses (aquatic life, recreation) in nearshore waters.

Comment 12 – Compliance with State Water Quality Standards

EPA did not provide response to a number of requests and issues raised by my comments on the original permit including requests for an NPDES permit, aquatic toxicity testing, and compliance with coastal zone management policy. I request that EPA demonstrate in the record of decision how the permit limits and conditions ensure that the injectate does not cause or contribute to exceedances of state water quality standards. There are documented water quality impairments in which the injection well effluents are implicated as a cause. It is the duty of EPA and the permittee to demonstrate that this permit is not in violation of state water quality standards.

Closing

Thank you for your time and attention to these matters. Please notify me of your decision by email at wqcinc@hawaii.rr.com.

Best regards,
Robin S. Knox
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