

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 9  
75 Hawthorne Street  
San Francisco, CA 94105**

**Response to Comments  
from the Public**

**on the Environmental Protection Agency's  
March 27, 2007 Tentative Decision  
regarding the**

**City and County of Honolulu's request for a Variance at the  
Honouliuli Wastewater Treatment Plant under  
Section 301(h) of the Clean Water Act**

**January 5, 2009**

## Response to Comments from the Public on Honouliuli TDD

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This document responds to all the comments received on the Honouliuli tentative decision except for those from the City and County of Honolulu. A separate document responds to CCH's comments. The names of the commenters and their identifying numbers are listed at the end of this document. Each comment in this document is given a number with the prefix "P." Comments in the Response to Comments from CCH document are given numbers with the prefix "C." Any reference in this document to "public" comments should also be interpreted to include the comments submitted by CCH.

**Note:** Various commenters refer to a section 301(h) "waiver," whereas EPA uses the term "variance." In the context of the Honouliuli decision and response to comments document, these terms can be considered interchangeable.

**Comment P1:** EPA granted a variance for the Honouliuli discharge in 1991. Since then, flows have increased from 23 mgd to only about 27 mgd, and the city applies secondary treatment to about half of this flow. We are therefore astounded that the EPA now wants to reverse the course it took in 1991.

Commenter: 84

**Response:** EPA's consideration of whether the Honouliuli WWTP application has met the criteria of section 301(h) of the CWA must be based on current water quality standards and currently available information on attainment of these standards as submitted in CCH's application and subsequent submissions by CCH. Since EPA's 1991 decision granting a variance for the Honouliuli WWTP, the relevant facts have changed. Several water quality standards have changed, and CCH's application includes more extensive data on the makeup of the Honouliuli discharge. For example, the enterococcus standard to protect recreational users from microbes was promulgated in 2004, and did not apply to the discharge which was granted a variance in 1991. There was no evaluation of whole effluent toxicity in the 1991 decision. The 1991 decision did not consider the impacts detected by *Tripneustes gratilla*, an indigenous Hawaiian sea urchin, which has been used to evaluate toxic effects on marine life in Hawaii since the late 1990's.

**Comment P2:** EPA should look at the environment holistically and not cause overall detrimental impacts.

Commenter: 84

**Response:** When Congress adopted the CWA in 1972, it mandated use of secondary treatment by all POTWs. Section 301(h), added in 1977, established a narrow exception for some POTWs discharging to the ocean, but only when stringent, very specific criteria – set forth in the Act – were satisfied. In making decisions as to whether a facility may receive a 301(h) variance, EPA must evaluate the specific criteria set forth in section 301(h) of the CWA, and cannot grant a

variance unless all criteria are satisfied. It is EPA's objective to minimize any negative impacts and maximize beneficial impacts that might result from plant upgrades required by the CWA. For example, with respect to greenhouse gas emissions -- an issue raised by some commenters -- there will be options to reduce emissions by methods such as those in the December, 2006 EPA document, "Opportunities for and Benefits of Combined Heat and Power at Wastewater Treatment Facilities." It is EPA's intent to share lessons learned from experience across the county to ensure that CCH is aware of available environmentally sound technologies.

**Comment P3:** Hawaii has an environment that is unique among the 50 states. There are no extensive continental shelves as exist off the east and west coasts of the United States, and the ocean bottom drops away steeply from shore. The land mass is too small to contribute sufficient nutrients to the ocean waters to support the types of fisheries that exist in the coastal marine waters of the continental states. There is a continuous net transport of any discharges and runoff from the land away into the open ocean. With its unique environment, mainland programs may not be the most sound for Hawaii, especially when the environment is considered holistically.

Commenter: 84

**Response:** While we recognize these considerations, POTWs in Hawaii are still subject to the Clean Water Act's 301(h) criteria for variances from secondary treatment, including the requirement that water quality standards, including those established by the State of Hawaii for the protection of marine waters in the vicinity of the outfall, must be attained. It is worth noting that nine POTWs in the State of Hawaii discharge into ocean waters, but only two, Honouliuli and Sand Island, are not using at least full secondary treatment.

**Comment P4:** In 1969 the City of Honolulu saw a need to develop a comprehensive water quality management plan. The result was the Water Quality Program for O'ahu with Special Emphasis on Waste Disposal (WQPO), which was finalized in 1972 and is still applicable today. (The comment includes a description of the situation in 1969 to 1972 and the strategy adopted at that time.) For Sand Island, the WQPO recommended advanced primary treatment with effluent disposal through a deep ocean outfall. For Honouliuli, treatment was to be at the secondary level with effluent recycled for sugar cane irrigation, but as flows increased to where no more effluent could be recycled, the plant expansion was to be at the primary level and the primary effluent disposed through a deep ocean outfall. The successes of this strategy were documented in the paper, *The CWA: 25-Years of Success (1997)*, attached to the comments.

Commenter: 84

**Response:** EPA has reviewed these portions of the comment submission, including the 1997 paper, and considers them to be background for the commenter's more specific comments. No response is needed to these background comments.

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**Comment P5:** The comment describes the history of the Clean Water Act and Section 301(h), noting that Hawaii and other states had testified to Congress asking to allow waivers from secondary treatment requirements. It would have been ironic had the City chosen to simply comply with PL 92-500 [requiring secondary treatment] and not implement the recommendations in the WQPO. If secondary treatment had been applied to all of the existing wastewater treatment plants and the plants had continued to discharge effluent in the then existing locations, the water pollution problems that were primarily a result of the impacts of nutrient loads would not have been corrected. The recommendations of the WQPO to discharge effluent where it would have the least environmental impacts, i.e. the open and deep ocean, and to apply the appropriate technology, pointed the best and correct way to solving the problems.

Commenter: 84

**Response:** The commenter's discussion of the history of the Clean Water Act and Section 301(h) are background and do not require a response. Regarding the cited history of wastewater treatment and disposal strategies on Oahu, EPA does not disagree that the recommendations made by the WQPO in 1972 resulted in water quality improvements. However, this history is not directly applicable to EPA's evaluation of the current 301(h) applications, as EPA is required under the CWA to base its evaluation on the specific criteria in 301(h).

**Comment P6:** Primary treatment is the appropriate technology for the Honouliuli and Sand Island plants. The comment discusses the history of the Hawaii Kai WWTP, which went from primary to secondary treatment, and asserts three lessons learned: (A) An open coastal location in Hawaii with good mixing and transport conditions for wastewater discharge is more important than the level of treatment; (B) wastewater discharges into a recreational zone require disinfection with primary or with secondary treatment; (C) in open coastal areas, wastewater discharges with primary or secondary treatment can enhance coral growth.

Commenter: 84

**Response:** The determination of whether primary treatment is the appropriate technology for these two POTWs must be made based on the 301(h) criteria. The information about past lessons learned discussed in this comment is informative, but not directly applicable to EPA's current evaluation. When Congress added section 301(h) to the CWA, it did so because conditions for discharges into the ocean may be different from other discharges. However, section 301(h) did not mandate that all ocean discharges would receive variances; rather, the specific criteria in section 301(h) had to be met. With regard to disinfection, it may be that in specific situations secondary-treated water may still require disinfection. If so, it is generally more effective and energy-efficient to disinfect secondary effluent. Even if wastewater discharges can enhance coral growth, that does not by itself assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife, nor does it guarantee that any of the other section 301(h) criteria are met for that discharge.

**Comment P7:** At Honouliuli, the recommendation to implement reclamation by reuse for sugar cane irrigation never materialized. For many years, the outfall which was supposed to be a backup disposal system was the only means of disposal and the plant construction was limited to primary treatment. However, a secondary facility was later built, and a tertiary facility planned and designed, as the City looked toward reclamation through irrigation of golf courses, parks and common areas. Currently up to 10 mgd of effluent is reused for irrigation and by refineries and a power plant.

Commenter: 84

**Response:** Much of this comment is historical information to which no response is necessary. With regard to the secondary and tertiary facilities, as noted in the TDD, EPA recognizes that the Honouliuli facility includes partial secondary and tertiary treatment. During the application process, CCH described six possible scenarios for operating the treatment facilities (Table 3 in the TDD). CCH's application for a renewed variance provided data on the plant discharges, which were evaluated to determine whether the 301(h) criteria are met, although in some cases, where existing monitoring data was used, it was likely reflective of a higher quality effluent than would be produced under some of the operating configurations proposed by CCH.

**Comment P8:** To qualify for a waiver, a municipality must demonstrate that the impacts of discharge of primary effluent will not cause environmental harm. Millions of dollars have been spent by the City on its monitoring program to document the impacts of its discharges. Adverse impacts have not been found. There have been no measurable chemical, biological and aesthetic impacts. If the impacts of the discharge are not discernible, we do not feel the concerns can be real. If the impacts are not measurable, there can be no measurable improvements.

The mixing and transport characteristics of the open coastal location of the CCH outfalls are more than adequate to accommodate the discharges. As evidenced by more than two decades of monitoring, there is no accumulation of solids in the benthos; no reduction in the DO levels; no accumulation of toxic substances in local fish; no algae blooms; no grease slicks; no fish kills; no changes in pH.

Commenter: 84

**Response:** EPA is aware of the results of the environmental studies referred to in these comments, and has considered them in our decision. EPA analyzed sediment accumulation; bioaccumulation; levels of DO, nutrients, and pH; and other parameters in the TDD. EPA found that the proposed discharge would exceed water quality standards for whole effluent toxicity, chlordane, dieldrin, bacteria, and ammonia nitrogen. CCH's failure to demonstrate that the proposed discharge could meet standards for these parameters was the primary basis for EPA's conclusion that the proposed discharge does not meet the 301(h) criteria. Pursuant to the CWA, conclusions about water quality impairments are not made solely on the basis of severe impacts such as fish kills, algae blooms, or grease slicks. Water quality standards have been developed to protect beneficial uses of water bodies, and prevent such severe impacts. One of the requirements of section 301(h) is that the applicant demonstrate that its discharge will not exceed

water quality standards. Additionally, the applicant must demonstrate that the discharge will not interfere with the attainment or maintenance of water quality which assures protection and propagation of a Balanced, Indigenous Population (BIP) of shellfish, fish, and wildlife in areas actually or potentially impacted by the discharge. As described in the TDD, in order to analyze the BIP criterion, EPA analyzes three types of information: biological data, whole effluent toxicity data, and chemical-specific water and sediment quality data. Here, while available biological data do not demonstrate impacts to species in the vicinity of the outfall, whole effluent toxicity and chemical-specific (ammonia nitrogen) water data results present a different picture. As a result of the toxic effects found in whole effluent toxicity testing, and the potential impacts on wildlife due to exceedances of the water quality standard for ammonia nitrogen, EPA concluded that the applicant had not demonstrated that the discharge under a renewed variance would not interfere with the attainment or maintenance of water quality which assures a balanced indigenous population of shellfish, fish, and wildlife.

**Comment P9:** The physical presence of both the Honouliuli and Sand Island outfalls has had the positive impact of increasing fish populations and other marine life. Because the suspended solids discharged in the effluent are too light to settle, there has been no deposition on the ocean floor; the sandy bottom is clean and the water at the bottom is clear. The protection afforded by the armor rocks installed to protect the outfall from ocean surges has attracted marine life to this haven in the otherwise barren environment.

Commenter: 84

**Response:** EPA's analysis of sediment accumulation indicated that there is little accumulation around the outfall. EPA recognizes that construction of ocean outfalls often results in hard substrates that are then colonized by organisms that might not otherwise be abundant in the vicinity of the outfall. Creation of this type of habitat, however, does not offset the inability of the proposed discharge to meet the 301(h) criteria. See responses to comments P8.

**Comment P10:** When there is a surfacing plume, an along-shore current in the direction of the recreational area in question, and an on-shore wind, the discharge from the treatment plant should be disinfected in order to protect recreational users. Disinfection should be required with or without secondary treatment.

Commenter: 84

**Response:** Information on the behavior of the plume has been considered in EPA's decision. Under section 301(h), water quality standards, including pathogen criteria, must be met once the wastewater plume leaves the zone of initial dilution, not just when the plume travels toward shore. EPA agrees that disinfection may be needed to meet the water quality criteria for pathogens even if secondary treatment is used.

**Comment P11:** Full secondary treatment would add significantly to the CO<sub>2</sub> discharge to the atmosphere, would cause odor problems, would increase the sludge volume, would require large use of scarce energy, and would add significantly to the sewer charge.

Commenter: 84

**Response:** Please see responses to comments P2 and P27. EPA's decision at hand is whether or not CCH should receive a variance under section 301(h) of the CWA. However, it is EPA's objective to minimize any negative impacts and maximize beneficial impacts that might result from plant upgrades required by the CWA. With respect to greenhouse gas emissions and energy usage, efficiencies can be achieved via methods such as those described in the December, 2006 EPA document, "Opportunities for and Benefits of Combined Heat and Power at Wastewater Treatment Facilities."

Consideration of issues such as odor and sludge volume will occur during the design and initial operations of secondary treatment operations. It is EPA's intent to share lessons learned from experience across the county to ensure that CCH is aware of available environmentally sound technologies. Regarding increased costs, please see response to comments C81 through C88.

**Comment P12:** The ZID dimensions calculated by the applicant are consistent with EPA's guidance.

Commenter: 84

**Response:** As stated on page 23 of the TDD, EPA agrees that the ZID calculation by the applicant is consistent with EPA's guidance. EPA used the applicant's ZID calculation in the TDD analysis.

**Comment P13:** Although EPA regulations (40 CFR 125.62(a)) require the discharge to meet WQS at the ZID, the Honouliuli permit contains a ZOM situated around the ZID.

Commenter: 84

**Response:** The commenter's characterization of the EPA regulations is correct. Pursuant to Clean Water Act regulations implementing 301(h) variances, water quality standards must be achieved at and beyond the zone of initial dilution (ZID), provided that the ZID may not be *larger* than allowed by mixing zone restrictions in applicable water quality standards. (40 CFR 125.62(a), 125.59(dd)) For the Honouliuli outfall, the ZID dimensions are 122m wide and 660m long, centered over and parallel to the diffuser. Under certain conditions, Hawaii's state standards allow for a Zone of Mixing (ZOM), which, for the Honouliuli facility, would be larger than the ZID. Although the existing Honouliuli permit includes monitoring stations at the ZOM as well as at the ZID, that does not change the requirement that in order to qualify for a 301(h) variance, a discharge must meet water quality standards at the smaller ZID.

**Comment P14:** CCH's original application for a variance was submitted in December 1995 and updated in August 2004. EPA took almost 11 years to issue the TDD. If this had been performed in a timely manner a second permit would have been issued in 1996 (or denied at that time), and again in 2001 and 2006. A timely response expectation certainly gives all the outward appearances of being a one way street (from outside to inside).

Commenter: 84

**Response:** Delays in the issuance of the TDD were largely due to delays in CCH's provision of adequate information for EPA to analyze the application. This included delays in CCH's submittal of accurate and certified data; delays due to faulty or improperly located monitoring devices; CCH's delayed provision of laboratory results from sampling conducted after installation of an effluent flow meter; the need for a revised application to reflect changes that had been made to the plant; and a lack of specificity as to the discharge scenarios for which CCH was requesting the variance. EPA responded to the application as soon as was practical given the circumstances and the problems with obtaining adequate data and information.

**Comment P15:** The commenters did not have access to data used to calculate the critical initial dilution value of 118:1 using the Visual Plumes model.

Commenter: 84

**Response:** The conclusions in EPA's TDD, including this dilution value, were based on data provided by CCH. When EPA announced the TDD, CCH's applications, which contained much of the data used in EPA's analysis, were made available on EPA's website. Additionally, the public notice stated that the administrative record for the tentative decision was available upon request. Any additional data used by EPA, most specifically supplemental data submitted by CCH separate from their applications, were available in the administrative record. As an example of an option available to the commenters, representatives of CCH copied the administrative record, including the data used to calculate this dilution value, within a few days of the public notice.

**Comment P16:** The commenter questions the TDD's conclusions regarding suspended solids in the discussion of compliance with Hawaii's water quality standards for turbidity and light extinction coefficient. There is not a Hawaii standard for total suspended solids. The commenter disagrees that there is a potential for substantial seabed accumulation, as they believe this is not supported by conditions on the ocean floor beneath the discharge.

Commenter: 84

**Response:** EPA's conclusion is that the discharge complies with the relevant Hawaii Water Quality Standards for turbidity and light extinction coefficient. EPA's TDD states that no accumulation of solids has been found on the seabed.



**Comment P17:** Enterococci, just one group of many fecal indicators, are not considered pathogens. They are merely indicators that pathogens may be present.

Commenter: 84

**Response:** EPA agrees with commenter's characterization of enterococci. Public health agencies have long used indicator organisms such as enterococci to protect people from illnesses that they may contract from engaging in recreational activities in surface waters contaminated by fecal pollution. These organisms generally do not cause illness directly, but have demonstrated characteristics that make them good indicators of fecal contamination and thus the potential presence of pathogens capable of causing human illnesses such as gastroenteritis. EPA has recommended the use of *E. coli* or enterococci for fresh recreational waters and enterococci for marine recreational waters because levels of these organisms more accurately predict acute gastrointestinal illness than levels of fecal coliforms. See BEACH Act final rule preamble, 69 Fed. Reg. at 67220 (November 16, 2004). The water quality standards applicable in Hawaii's marine waters are written in terms of enterococci.

**Comment P18:** The Hawaii water quality standard (HAR 11-54-8(b)) for enterococcus applies only to 300 meters from the shoreline. Waters between 300 meters and 3 miles are considered non-recreational territorial waters. The application of bacterial criteria for this situation does not have merit.

Commenter: 84

**Response:** As noted in the TDD, the specific Hawaii standard cited by the commenters is not the only applicable standard for enterococcus. Additionally, pursuant to the BEACH Act, 40 CFR Section 131.41(c)(2), enterococcus criteria apply in Hawaii's marine waters between 300 meters and 3 miles from shore. Under HAR 11-54-3, these waters are classified as Class A waters whose recreational uses must be protected. Thus Hawaii's waters 3 miles from shore must attain the BEACH Act's enterococcus criteria. In responding to comments on the BEACH Act rule, EPA noted that if the State of Hawaii believed that primary contact recreation does not occur in certain waters, the State could conduct a use attainability analysis consistent with 40 CFR 131.10(g) to remove the use. The State has not conducted a use attainability analysis, nor did it comment on EPA's analysis of water quality standards applicable in Hawaii waters in the Honouliuli 301(h)TDD. Please also see responses to comments P37 and C21, and comment P156.

**Comment P19:** Chlordane and dieldrin have been detected and is not disputed; however, there is a question as to detection methods being the most current and reliable. Chlordane exceeded the Hawaii water quality criterion but not the EPA criterion. We must ask if the reduction in the Hawaii water quality criterion was derived from scientific data. Dieldrin exceeded the Hawaii water quality criterion, but exceeded the EPA criterion once. The best method to reduce the chlordane and dieldrin concentrations is to prevent their entrance into the collection system,

since there is little reduction by secondary treatment. Neither chlordane nor dieldrin has been found in any of sampled fish tissue or sediments.

Commenter: 84

**Response:** The analytical method used to analyze for chlordane and dieldrin is an EPA-approved test method procedure listed in Table 1D of 40 CFR 136.3 for detecting pesticides in wastewater and is the method listed in EPA's Amended Section 301(h) Technical Support Document. This method has also been required in CCH permits that were available for public review. Although the commenter appears to be questioning this method, there is no indication that the data submitted by CCH and used by EPA in its 301(h) analysis are flawed. Please also see response to comment C25.

Under the CWA, States have the authority to promulgate water quality standards that are more stringent than federal criteria. Hawaii's standards for chlordane and dieldrin were subject to public comment. Because these are the standards that are in effect, they are the standards that EPA must use in its 301(h) analysis when analyzing whether water quality standards will be met. Whether or not these pesticides have been documented in fish tissue or sediments does not provide a substitute for attainment of water quality standards. We note, however, that chlordane and dieldrin have been found in sediments in the vicinity of the outfall, as discussed in the tentative decision. Please also see responses to comment P29 regarding the CWA's use of water quality standards, not just biological impacts, to determine if there are water quality problems.

Regarding the effectiveness of secondary treatment for chlordane and dieldrin, we believe that secondary treatment will result in increased removal efficiencies for these pesticides. Although there is little data on the relative removal efficiencies of primary and secondary treatment for chlordane, chlordane is strongly hydrophobic and would be expected to adhere to solids in the wastewater. Secondary treatment removes additional solids in the wastewater and EPA believes it would therefore remove more chlordane than primary treatment alone. However at this time it is premature to debate how the Honouliuli plant will perform after it is upgraded to full secondary treatment.

Moreover, the question of the effectiveness of secondary treatment with respect to specific pollutants is not within the scope of a 301(h) variance decision. POTWs are required to utilize secondary treatment unless it can be demonstrated that an ocean discharge from the POTW meets all of the 301(h) criteria.

EPA agrees that there could possibly be reductions in pesticide levels if all I/I problems in CCH's collection system were addressed. However, based on the scope of the deficiencies in CCH's collection system, and the need to address pipes throughout the system, we are not optimistic that collection system repairs will result in significant declines in pesticide levels in the near term.

**Comment P20:** The *Tripneustes gratilla* should not be used as an indicator of toxics effects as this species has reproductive difficulties when they are outside their natural environment without

proper acclimation. These organisms do not venture into the depths that the outfall is placed in and are not an appropriate organism to use for evaluation.

Commenter: 84

**Response:** The commenters seem to be alleging that the harm caused to this species during testing was not a result of exposures to toxics in waste water effluent, but was instead caused by the test method itself. There is no evidence that this is the case. The test method requires use of controls using filtered seawater to ensure fertilization occurs when toxics are not present in the test solution. Moreover, other marine water dischargers in Hawaii, including POTWs utilizing secondary treatment operated by CCH, are passing WET tests using *Tripneustes gratilla*, as discussed in response to comment C34.

The commenters state that *Tripneustes gratilla* does not venture into the depths that the outfall is placed in and are not an appropriate organism to use for evaluation. EPA does not agree that it is not an appropriate test organism. A WET test is a measure of synergistic toxic effects from the discharge in the receiving water, and the test organism *Tripneustes gratilla* has been selected as an indicator of overall toxicity for Hawaii's marine waters. It is not necessary for the organism to be present at the depth of the outfall in order for it to be an appropriate indicator of toxic effects in these waters. Furthermore, it must be noted that the effluent plume does not remain in one place. The plume can move toward areas where the test organisms as well as other aquatic organisms are more prevalent.

**Comment P21:** There have not been algal blooms, therefore ammonia exceedances are not causing algal blooms.

Commenter: 84

**Response:** Under section 301(h), the applicant must demonstrate that State water quality standards will be met under a 301(h) modified permit. With respect to ammonia nitrogen, based on the data submitted in CCH's application, exceedances of the Hawaii water quality standard have occurred, regardless of whether there have been impacts such as algal blooms. Additionally, there are limitations on the biological data submitted by CCH; for example, data on plankton populations are scarce, and samples may not have been collected during critical conditions. Therefore, it may be that the discharge has in fact stimulated algae blooms but they have not been detected.

**Comment P22:** Upgrading to secondary treatment will result in adverse impacts such as increased sludge production and increased CO<sub>2</sub> emissions to the air.

Commenter: 84

**Response:** EPA's decision at hand is whether or not CCH should receive a variance under section 301(h) of the CWA. The criteria for making this decision do not include evaluating the

impacts of secondary treatment. However, it is EPA's objective to minimize any negative impacts and maximize beneficial impacts that might result from plant upgrades required by the CWA. It would be premature to speculate as to how operation of secondary treatment can be fully optimized; however, with respect to greenhouse gas emissions, there will be options to reduce emissions by methods such as those in the December, 2006 EPA document, "Opportunities for and Benefits of Combined Heat and Power at Wastewater Treatment Facilities." It is EPA's intent to share lessons learned from experience across the country to ensure that CCH is aware of available environmentally sound technologies. Questions regarding the production and use/disposition of sludge will be considered during the design of treatment plant upgrades. See also responses to comments P2 and P27.

**Comment P23:** A far better alternative to secondary treatment would be to extend the outfall to deeper depths.

Commenter: 84

**Response:** EPA's decision at hand is whether or not CCH should receive a variance under section 301(h) of the CWA. CCH's application did not propose improvements such as extending the outfall. However, if CCH had chosen to include an extended outfall as described by the commenters, and the level of treatment at the Honouliuli WWTP did not change, it appears that the discharge would still occur in Class A state waters and would result in exceedances of water quality standards in the vicinity of the outfall.

**Comment P24:** If EPA were required to prepare an EIS in accordance with NEPA requirements, we believe that the tentative denial would be reversed. The environmental and financial costs that would be committed for no concomitant benefits would make it the least desirable alternative. It would behoove EPA to keep in mind Barry Commoner's principles that everything is interconnected and there is no free lunch.

Commenter: 84

**Response:** As implied by the commenter, an EIS evaluating treatment plant upgrades is not required in determining whether a variance under the CWA should be granted. Pursuant to section 511(c) of the CWA, most EPA actions under the CWA are exempt from NEPA. When Congress enacted section 301(h), it established specific criteria for allowing a variance from secondary treatment requirements, and did not require a balancing of other factors, as was done, for example, in CWA section 301(m). Nor would such a balancing be appropriate under section 301(h), since variances cannot be allowed unless all the requirements of the section are met. With regard to potential adverse impacts of secondary treatment, please see responses to comments P2, P22 and P27.

**Comment P25:** Increasing sewer fees will result from upgrading the WWTPs to secondary treatment. Some commenters noted that they believe the increased fees would have severe impacts on elderly and low-income residents.

Commenters: 2, 3, 6, 9, 11, 12, 13, 16, 19, 21, 22, 23, 24, 28, 33, 36, 41, 44, 53, 55, 62, 64, 66, 81, 82, 90, 92, 96, 103, 104, 106, 113, 120, 121, 123, 126, 131, 140, 142, 152, 153

**Response:** Please see response to comments C81, C84, and C86.

**Comment P26:** Attention should be focused on repairs to CCH's collection system, including replacement of aging pipes and pump stations, instead of treatment plant upgrades.

Commenters: 3, 6, 8, 11, 16, 17, 19, 21, 22, 23, 24, 25, 27, 33, 41, 44, 49, 55, 64, 68, 70, 78, 81, 82, 83, 85, 86, 87, 90, 92, 97, 101, 103, 104, 105, 106, 107, 110, 111, 116, 119, 129, 131, 132, 134, 135, 137, 140, 141, 145, 149, 151, 153

**Response:** The question of whether there are valid competing priorities is not one of the 301(h) criteria established by Congress; therefore, it is not one EPA may consider in determining whether to grant a variance under section 301(h) of the CWA. As a practical matter, however, EPA recognizes that there are numerous priorities when it comes to upgrading CCH's wastewater system. These priorities will be considered when comprehensive schedules are developed for necessary upgrades to CCH's collection system and treatment plants.

**Comment P27:** There will be negative impacts from secondary treatment, including greenhouse gas emissions, increased energy demands, and increased solid waste.

Commenters: 2, 8, 12, 22, 24, 36, 51, 75, 78, 79, 91, 139

**Response:** EPA's decision at hand is whether or not CCH qualifies for a variance under section 301(h) of the CWA. The criteria for making this decision do not include the type of evaluations the commenters propose. When Congress enacted section 301(h), it established specific criteria for allowing a variance from secondary treatment requirements, and did not require a balancing of other factors, as was done, for example, for a different kind of variance under CWA section 301(m). Nor would such a balancing be appropriate under section 301(h), since variances cannot be allowed unless all the requirements of the section are met. However, it is EPA's objective to minimize any negative impacts and maximize beneficial impacts that might result from plant upgrades required by the CWA, and to share lessons learned from experience across the county to ensure that CCH is aware of available environmentally sound technologies. With respect to greenhouse gas emissions and energy demand, for example, many modern wastewater treatment plants utilize gases created during secondary treatment to generate electricity, thus reducing operating costs, energy demand, and emissions at wastewater treatment plants, as discussed in the December, 2006 EPA document, "Opportunities for and Benefits of Combined Heat and Power at Wastewater Treatment Facilities." Energy demands, potential emissions, and sludge volume are matters that will need to be reviewed in detail during the design of treatment plant

upgrades. EPA intends to work with CCH to ensure that treatment plant upgrades are made in a manner that takes advantage of state-of-the-art energy efficiencies used throughout the U.S.

**Comment P28:** The decision was not based in science. There is no scientific reason for the EPA to suddenly change its position and deny the waiver. EPA must base its decision on the science presented by experts rather than simply enforce a rule because a book says it must be enforced. The EPA will gain credibility and acceptance when it listens and makes decisions based on rationale scientific evidence.

Commenters: 9, 12, 19, 21, 22, 27, 41, 60, 68, 80, 83, 89, 91, 111, 112, 113, 116

**Response:** EPA's decision is based on the best science and information available to EPA, and EPA considered all the scientific evidence submitted during the public comment period. EPA does not have the discretion to depart from the specific criteria for allowing a 301(h) variance established by Congress in the Clean Water Act. Regarding the changes from the prior 301(h) decision, please see response to comment P1, which describes how the relevant facts have changed since 1991. When Congress developed the Clean Water Act NPDES program, it specifically limited permits to 5 years (see CWA sections 402(a)(3) and (b)(1)(B)), thereby putting the burden on EPA and/or state permitting agencies to ensure that permits were changed, when necessary, to reflect any new water quality or technology requirements, and new information obtained during the previous permit term. Section 301(h) was added to the CWA with the understanding that permits would need renewing every five years, and that new 301(h) evaluations would be conducted at that time. ("[A 301(h)] waiver would be based on stringent criteria... The waiver would be reviewed every 5 years to assure continued compliance with these conditions." Report of the Committee on Environment and Public Works, U.S. Senate, Report No. 95-370, page 678, July 23, 1977.) Although permits may be administratively extended beyond five years, this is not intended to produce a situation in which once a 301(h) waiver is granted, it will be extended indefinitely.

**Comment P29:** Monitoring data do not show adverse impacts in the vicinity of outfalls, and no exceedances in nearshore waters. There has not been any evidence that the discharge at current levels causes any harm to the environment.

Commenters: 2, 3, 5, 9, 11, 12, 16, 25, 26, 68, 72, 75, 78, 81, 86, 97, 113, 115, 116, 145

**Response:** EPA is aware of the results of the environmental studies submitted by various commenters, and has considered them in our decision-making process. Pursuant to the CWA, conclusions about water quality impairments are not made solely on the basis of severe impacts such as fish kills, algae blooms, or grease slicks. Water quality standards have been developed to protect beneficial uses of water bodies, and prevent such severe impacts from happening. This is based on the stated goal of the Clean Water Act to attain and maintain good quality water. (See CWA section 101(a).) One of the requirements of section 301(h) is that the applicant demonstrate that its proposed discharge "will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which

assures ... protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.” (CWA section 301(h)(2)). This requires ensuring that water quality will be protected before the occurrence of adverse effects, not waiting until there are severe impacts. As described in the TDD, in order to determine whether the proposed discharge would assure protection of a balanced indigenous population of fish, shellfish, and wildlife, EPA considered three types of information: biological data, whole effluent toxicity data, and chemical-specific water and sediment quality data. While available biological data do not demonstrate actual impacts to species have already occurred in the vicinity of the outfall, whole effluent toxicity and chemical-specific (ammonia nitrogen) water data results present a different picture. As a result of the toxic effects found in WET testing, and the potential impacts on aquatic life due to exceedances of the water quality standard for ammonia nitrogen, EPA concluded that the applicant has not demonstrated that the discharge under a renewed variance would allow for the attainment or maintenance of water quality which assures a balanced indigenous population of shellfish, fish, and wildlife.

**Comment P30:** The 301(h) criteria are a “one size fits all” approach which should be replaced by an approach that considers the unique situation in Hawaii.

Commenters: 8, 9, 11, 27, 32, 54, 64, 73, 149

**Response:** POTWs in Hawaii are subject to the Clean Water Act’s 301(h) criteria for variances from secondary treatment. This process takes into account local factors by considering site-specific data provided by the facility seeking a variance and state-specific water quality standards. In this case the conclusion is that the Honouliuli facility does not attain water quality standards, including standards established by the State of Hawaii for the protection of marine waters in the vicinity of the outfall.

**Comment P31:** The outfalls are situated such that the effluent is well diluted in the Pacific Ocean and primary treatment is sufficient.

Commenters: 3, 9, 26, 32, 70, 96, 121

**Response:** The dilution referred to by the commenter was considered in evaluating whether the discharge would meet water quality standards. In calculating the expected dilution, EPA used a model that takes into consideration specific information about the outfall (e.g., depth and port configuration), discharge (e.g., flow rate and temperature), and receiving waters (e.g., salinity and temperature profiles). After factoring in this dilution, EPA found that certain water quality standards would not be met in the receiving waters. When Congress adopted section 301(h), it did so based on the understanding that it was legitimate to treat ocean discharges differently – but only if the specific criteria in section 301(h) were met. The expectation was never that all ocean dischargers would receive section 301(h) variances, but only those meeting the criteria in section 301(h) of the Act.

**Comment P32:** I urge EPA to grant CCH their requested exemption. I encourage the EPA to grant the Honouliuli WWTP 301(h) waiver.

Commenters: 8, 13, 16, 17, 20, 22, 23, 24, 27, 30, 34, 35, 44, 49, 53, 55, 62, 63, 64, 65, 68, 73, 75, 78, 80, 81, 82, 86, 87, 89, 90, 91, 93, 103, 104, 106, 109, 110, 111, 112, 114, 115, 116, 117, 119, 123, 124, 129, 130, 131, 135, 136, 139, 145, 151, 153

**Response:** EPA has received numerous comments in favor of continuing the variance. EPA has carefully considered all these comments and the information submitted by the commenters. However, our analysis indicates that several of the necessary criteria in the Clean Water Act would not be met. Therefore, we must deny the request for a renewed variance.

**Comment P33:** Secondary treatment provides no measurable benefit. Local scientists believe secondary treatment is not needed. They note that they believe there is not a scientific basis for upgrading the treatment plants, and there will not be benefits from upgrading.

Commenters: 2, 5, 9, 11, 12, 16, 21, 26, 32, 33, 41, 51, 53, 60, 62, 64, 66, 73, 78, 80, 82, 83, 86, 106, 121, 134, 141, 151

**Response:** When Congress passed the Clean Water Act in 1972, it mandated that all publicly-owned treatment plants needed to achieve secondary treatment levels of performance. This requires a greater reduction in levels of solids and oxygen-demanding substances in the effluent, with the incidental benefit of reducing other pollutants in the effluent that accompany the solid matter. When section 301(h) was added in 1977, secondary treatment remained the standard required by the Act – unless a specific treatment plant that discharged into the ocean could demonstrate that it would meet the specific section 301(h) criteria set forth in the Act. Even in discharges to the ocean, the reduction in oxygen-demanding substances, solids in general, and other pollutants that can adhere to solids benefits both the environment and recreational activities in the area of the outfall. Another incidental benefit of secondary treatment is that the wastewater is farther along in the process towards achieving water quality that would allow reuse, e.g. for irrigation. Wastewater must be highly treated before it is clean enough to reuse.

**Comment P34:** The decision is based on questionable state water quality standards.

Commenters: 2, 9, 78, 125

**Response:** The requirement in CWA section 301(h) is that the modified discharge would meet existing water quality standards, or, if none exist for a given pollutant, water quality criteria established by EPA under Clean Water Act 304(a). All of Hawaii's water quality standards were adopted following public comment and have been approved by EPA. Additionally, under CWA section 303(c)(1), States are required to hold public hearings for the purpose of reviewing and, if necessary, updating their water quality standards at least every three years. EPA reviews new or revised water quality standards that are submitted to it by a State but does not revisit those standards when making permit decisions such as whether to grant a 301(h) variance. If



commenters believe Hawaii's water quality standards are flawed, we recommend that they contact the Hawaii Department of Health, and/or raise these concerns during the next Hawaii triennial review hearing.

**Comment P35:** Under current levels of treatment, there have not been any beach closures caused by the deep-ocean outfall. There has not been any evidence presented that the discharge at current levels causes any harm to public health.

Commenters: 3, 24, 31, 49, 68

**Response:** EPA has found that the discharge results in exceedances of water quality standards. The lack of beach closures does not change this conclusion. The State of Hawaii has designated recreation as a use to be protected for all coastal waters in the vicinity of the discharge, not just at beaches, and the data submitted by CCH demonstrate that the proposed discharge would contribute to exceedances of water quality standards for bacteria in waters designated for recreation near the outfall. Decisions under the Clean Water Act are not necessarily based on drastic events such as fish kills, or beach closures. Rather, a goal of the Clean Water Act is to attain and maintain conditions under which water quality standards are met so that actual threats to human health and the environment do not happen. One of the requirements of section 301(h) is that the applicant must demonstrate that its proposed discharge "will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which ... allows recreational activities, in and on the water." (CWA section 301(h)(2)). This requires ensuring that water quality will be protected before the occurrence of adverse effects, not waiting until there are severe impacts. As described in the TDD, EPA found that because of the exceedances of water quality standards designed to protect human health, the applicant had not demonstrated that the discharge would not interfere with the attainment or maintenance of water quality which allows recreational activities.

**Comment P36:** No health threats result from current treatment.

Commenters: 6, 9, 24, 30, 31, 49, 51, 55, 104, 106, 120, 121, 123, 141, 142

**Response:** See responses to comments P35 and P111.

**Comment P37:** Recreation does not exist in deep, distant water.

Commenters: 2, 9, 31, 122, 125

**Response:** Hawaii's marine waters are designated for recreation. Therefore, this use must be protected with criteria, and, in accordance with 40 CFR 125.62(a), the discharge must meet these criteria at the boundary of the ZID throughout the water column. Bacterial concentrations detected at bottom depths do not always stay at the bottom of the water column. With the changing environmental conditions that affect the receiving waters, a trapped plume of

discharged effluent containing a high concentration of bacteria can surface to depths where recreation is more plentiful. Additionally, CCH's recreational use survey, which was conducted in 2003, confirmed that residents participated in recreational activities in ocean waters out to two miles from shore and beyond. The survey identified recreational activities including swimming, surfing/bodyboarding/windsurfing, snorkeling, paddling/canoeing/kayaking, fishing, diving, sailing, boating, and waterskiing. Please also see responses to comments P18, C21, and P156.

**Comment P38:** Primary treatment is sufficient

**Commenters:** 13, 23, 44, 49, 64, 70, 78, 87, 104, 119, 121, 149

**Response:** Even with portions of the effluent receiving secondary and tertiary treatment, the discharge does not meet Hawaii water quality standards. CWA section 301(h) regulations require water quality standards to be met at the boundary of the zone of initial dilution.

**Comment P38:** Primary treatment is not necessarily "substandard" treatment as some environmental groups have indicated. In fact, there is a national trend among many environmentally conscious small communities to utilize septic tanks, which essentially provides primary level treatment. The primary effluent from septic tanks is typically disposed of in leaching fields where microorganisms in the soil completes the treatment process. Many environmentalists support this energy efficient "low tech" treatment concept.

**Commenter:** 78

**Response:** EPA's decision to deny CCH's request for a renewed 301(h) variance is not a determination of the need for secondary treatment in general; it is specific to the application for the Honouliuli WWTP. Primary treatment may be adequate in other circumstances. Septic tanks provide acceptable treatment for small flows, in certain circumstances, but not generally in densely populated areas.

**Comment P39:** I support your requirement that Honolulu have the proper secondary waste water treatment plants.

**Commenters:** 10, 14, 15, 18, 38, 39, 40, 42, 43, 45, 46, 50, 52, 56, 57, 61, 71, 76, 88, 94, 100, 144

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P40:** The need to treat Honolulu's sewage to secondary stage is obvious.

**Commenters:** 15, 50, 71, 74, 77, 100, 143

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P41:** We should be upgrading to tertiary treatment to reuse our finite domestic water supply. It has been reported that the Honolulu water supply will be exhausted in 2020, when even more costly desalinization plants will be needed.

Commenter: 95

**Response:** EPA encourages the reuse of treated effluent. CCH's application indicates that it intends to reuse up to 10 mgd or more of effluent from the Honouliuli WWTP rather than discharging it through the ocean outfall. Pages 13 and 14 of the tentative decision describe the secondary and tertiary treatment facilities that were constructed at the Honouliuli facility to allow effluent reuse. In 1996, construction at the Honouliuli facility was completed on a secondary treatment plant to treat up to 13 MGD. The secondary treatment plant was originally designed to fulfill effluent reuse requirements under State Department of Health Consent Order 89-CW-EOW-6. In 2000, construction was completed on a tertiary treatment facility designed to process up to 12 MGD of secondary treated effluent by filtration and reverse osmosis. Effluent leaving the tertiary treatment facility meets the State standards for recycled water.

Because of low demand for reuse water at the present time, CCH is blending this more highly treated (i.e. secondary and tertiary treated) effluent with primary effluent and discharging the blended effluent through the ocean outfall. The additional dilution provided by the highly treated effluent improves the quality of the primary treated effluent in the receiving water. Despite this addition, however, exceedances of water quality standards for bacteria and ammonia nitrogen are still detected in the receiving water.

**Comment P42:** Since May 1991, the City has improved the quality of the water discharged through the Ewa outfall. In order to allow potential reuse of the wastewater, the City constructed 13 mgd secondary and tertiary treatment facilities. To the extent there is demand for reuse water, the advanced treated water is used for golf course and landscape irrigation; whatever is left is combined with the primary treated effluent, so that today, the wastewater discharged into the ocean includes advanced treated water.

Commenter: 5

**Response:** Effluent at the present time is a combination of primary, secondary, and tertiary treated effluent.

**Comment P43:** The EPA has granted this waiver for years, and the CCH have done very little to improve their sewage treatment system. Even though the City and County officials promised to replace the decaying sewer lines and update their treatment plant, they did not follow through and instead raided the special sewer funds for other pet projects. This neglect was part of the reason for last year's disastrous discharge of 48 million gallons of raw sewage into the Ala Wai

Canal, which shut down many of Waikiki's beaches. Hawaii is dependent on tourism, and this kind of water pollution and lack of stewardship could greatly hurt our economy, not to mention the destruction of natural resources. Now is the time for the City and County to step up and spend the necessary funds to build the secondary treatment plants, repair the aging sewage lines and protect our coastlines from pollution. We can't afford the consequences of doing nothing and risking another environmental and health disaster.

Commenter: 42

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P44:** It is sad that our State, that attracts millions of tourists who spend many hours in ocean pleasures, did not upgrade our sewage treatment plant voluntarily.

Commenter: 10

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P45:** The Kauai Chapter of the Surfrider Foundation is, in general, opposed to pipes dumping in the ocean.

Commenter: 45

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P46:** Given modern microfilm technology, sewage can be easily recycled for beneficial use.

Commenter: 45

**Response:** This is one of several comments which suggest a specific treatment technology. It is possible that the technology suggested here, or other suggested technologies, may be used by CCH in upgraded treatment plants which meet full secondary treatment requirements. The CWA does not mandate the use of specific technologies. As long as the secondary treatment performance criteria are met, there is flexibility as to which specific technology is used.

**Comment P47:** Other treatment plants in Hawaii have secondary treatment capabilities.

Commenter: 52

**Response:** Nine POTWs in the State of Hawaii discharge into ocean waters, but only two, Honouliuli and Sand Island, are not using at least full secondary treatment. Of a total of twenty-six POTWs in the State of Hawaii, only two do not utilize at least full secondary treatment.

**Comment P48:** The ocean water and the precious creatures within it are too important to jeopardize their well being by the flushing of our poisonous effluent into their environment.

**Commenters:** 14, 27, 77

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P49:** I respectfully request that the EPA reconsider its position to tentatively deny the City the 301h waiver. The decision should be based on scientific fact.

**Commenters:** 9, 49, 75, 80, 89, 90, 92, 93, 96, 97, 102, 106, 112, 121, 133, 137, 140, 150

**Response:** See response to comment P28.

**Comment P50:** Do not force Honolulu to spend its limited resources unnecessarily which would result in the diversion of resources on repairing and upgrading Honolulu's collection system.

**Commenters:** 5, 9, 68, 78, 80, 89, 91, 92, 93, 96, 97, 101, 102, 111, 125, 126, 129, 147

**Response:** See responses to comments C81 and C83.

**Comment P51:** What does the economy have to do with the environment and vice-verse? Everything. It is a balance we need to strike every time a decision like this is made. Denying the City's waiver will upset this balance and affect our economy, the very factor that allows us to continue to protect environment.

**Commenter:** 124

**Response:** See responses to comments C81, C83, and C85.

**Comment P52:** Let the dialogue between the City and EPA continue to discuss reasonable improvements.

**Commenters:** 5, 6, 11, 12, 58, 79, 102, 103, 107, 137, 139, 145

**Response:** EPA agrees that dialogue between CCH and EPA is important. This comment does not request a change in EPA's analysis.

**Comment P53:** Conditions at Honouliuli Sewage Treatment have improved since 1991. Therefore there is no reason to support the draconian measures contemplated by EPA on a request filed in 1995 and which has not been acted upon.

Commenters: 8 and 72

**Response:** See responses to comments P1, P14, and C2.

**Comment P54:** During my career at the CCH, significant effort was put forward to improve the reliability of the Honouliuli basin. These improvements include:

- A secondary facility constructed in the 1990's. The intent of the facility was to provide recycled water for agricultural purposes within the dry Ewa plain.
- A facilities plan, the long range planning document based on a 20 year horizon identifying improvements that will be required to the wastewater system to meet the demands of development, was undertaken concurrently with the Ewa Development Plan, the planning document that identifies the expected population growth within the area over a 20 year period.
- The 20 year sewer rehabilitation plan that addressed the immediate needs, inter-mediate needs and long term requirements for the sewer system rehabilitation was completed and submitted to and approved by EPA. This was a requirement of the "EPA Consent Decree."
- Spill Response Action Plans were developed and implemented. These plans were the requirement of the Consent Decree since it was recognized that during the 20 [year] rehabilitation program, emergencies may occur and a response plan should be in place. These plans were provided to EPA as part of the overall sewer system plan.
- Operation and Maintenance manuals were also developed for the treatment plants and pump stations.
- An extensive GIS based sewer system information and maintenance system was implemented.
- The Department of Environmental Services is now engaged in a partnership with the Honolulu Board of Water Supply to provide up to 13 million gallons per day of recycled water for non-potable use.
- Construction of a new solid handling facility was begun at the Honouliuli WWTP. The outcome will be a reduction in soluble BOD and odors associated with the Zimpro process. Biosolids reuse continues to occur at the facility.

The City has not been sitting idly by since 1996, when the existing permit expired. The actions of the City have been aimed at continual improvement of the collection and treatment system within the Honouliuli basin. As I have stated, the City has gone to significant expense, continually taken the position of "doing the right thing" to assure public health and safety.

Commenters: 112

**Response:** In the tentative decision, EPA acknowledged the improvements made by CCH at the Honouliuli WWTP. Nevertheless, in order for a variance to be granted the statutory criteria in section 301(h) of the CWA must be met. See also response to comment P1 and C2.

**Comment P55:** With the billion dollar cost of secondary treatment and its questionable effect with regard to water near the beaches, there is a justifiable concern about priorities. Some in Honolulu are all hoping for a broader approach to solving all the sewer issues.

Commenters ask for support for a "global" settlement with the EPA on outstanding wastewater issues.

Commenters: 9, 70, 109

**Response:** With respect to the point about the cost of upgrading to secondary treatment, please see response to comment C81. While the need to address other priorities cannot be used to justify a variance under section 301(h), EPA agrees that consideration of all wastewater management priorities is appropriate in determining schedules for future treatment plant upgrades. EPA supports the commenters' desire for a "global settlement" which leads to necessary improvements to CCH's collection system along with necessary treatment plant upgrades.

**Comment P56:** With the City's good faith efforts to catch up on this infrastructure work and the goal of achieving an environmentally beneficial solution, I hope that the EPA will consider the significant financial obligation that we are willing to commit to, and that it is reasonable for the EPA to provide the City with time to implement a solution.

Commenter: 109

**Response:** See responses to comment P55 and C88.

**Comment P57:** We urgently request that you consider the enormity of the financial burden a decision not to grant the requested waiver will impose on our population in light of the marginal near-term improvements in effluent quality that might be realized by secondary treatment.

Commenters: 17, 60, 78, 80, 87, 91, 93, 127, 145

**Response:** See response to comment C81.

**Comment P58:** After attending this hearing I could not understand what scientific data the EPA relied on to lead you to deny the continuation of the waiver.

Commenters: 81

**Response:** EPA reviewed and assessed data submitted by CCH in their application in addition to discharge monitoring reports, receiving water monitoring results, and annual assessment reports submitted to EPA by CCH as required by their NPDES permit for the Honouliuli WWTP. See also response to comment P28.

**Comment P59:** The real issue is that the speakers supporting the waiver have no raw data to substantiate their position.

Commenters: 18

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P60:** Oahu's sewage system (pipes) need to be replaced, but there is no reason that two maintenance problems cannot be accomplished simultaneously with the technology available.

Commenter: 7

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P61:** The city's sudden concern about greenhouse gases is ridiculous given the city's opposition to spending money on solar energy and energy efficiencies.

Commenter: 144

**Response:** Comment noted. See also the response to comment P27.

**Comment P62:** The costs are modest when compared with the extravagant and unrealistic commitments underway by the Mayor and the City Council to spend \$6 billion on a rail transit system.

Commenters: 29, 67, 74

**Response:** Comment noted. See also response to comment C81.

**Comment P63:** EPA's decision seems to be based on technicalities. It does not seem responsible to base a \$500 million decision on the parts per billion readings of a few water samples.

Commenters: 30



**Response:** Many toxic pollutants can cause adverse impacts when found in the water in concentrations of only a few parts per billion. Thus, many water quality standards are written in terms of parts per billion (ug/l). These are the levels that were determined necessary to protect human health and aquatic life. Financial considerations are not included in the statutory criteria listed in section 301(h) of the CWA, and EPA cannot make secondary treatment variance decisions based on cost considerations (see also response to comment C81).

**Comment P64:** The Mamala Bay Study concluded that two-thirds of the pollutants discharged to Mamala Bay came from nonpoint sources, principally storm water. Some of the real threats to Hawaii's streams and coastal waters include leptospirosis, alien species, wastewater spills.

Commenter: 30

**Response:** EPA agrees that nonpoint sources and storm water are important contributors of pollutants to Mamala Bay, and that the types of threats identified by the commenter may be of concern in various locations in Hawaii. Please note that section 301(h) specifically states that the applicant must demonstrate that its discharge “... will not interfere, *alone or in combination with pollutants from other sources*, with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife, and allows recreational activities, in and on the water.”

**Comment P65:** If EPA can prove that the City is causing harm to the flora, fauna, and people because of the waiver, then I can agree with EPA.

Commenter: 36

**Response:** CWA 301(h) requires certain criteria to be met, as described in the responses to comments P29, P35, and P111. EPA has determined that the proposed discharge does not meet water quality standards at and beyond the ZID, does not demonstrate that the discharge will not interfere with attainment or maintenance of that water quality which assures the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife (BIP), and does not protect recreational activities, in or on the water.

**Comment P66:** EPA's tentative decision is based solely on enforcement, not environmental protection, and fails to recognize the interrelationship of cross-media impacts of an island environment.

Commenter: 75

**Response:** This statement is not correct. CWA 301(h) requires certain criteria to be met prior to an approval of an application for a 301(h) variance. EPA's tentative decision was based on an

assessment of these criteria, which involved an assessment of the Honouliuli effluent monitoring data and receiving water monitoring data. CCH has not demonstrated that the Honouliuli discharge meets State and Federal water quality standards. EPA's tentative decision is not based on, and does not address, enforcement matters.

**Comment P67:** Secondary treatment focuses on three pollutant parameters: biochemical oxygen demand (BOD), total suspended solids (TSS) and pH. EPA's tentative decision acknowledges that the Honouliuli WWTP is in compliance with the permit requirements for these parameters.

Commenter: 75

**Response:** The criteria for allowing a 301(h) variance are not limited to considerations regarding the three parameters identified by the commenter, and evaluation of section 301(h) variance requests requires an assessment of whether or not the proposed discharge would meet all the requirements of section 301(h). Here, EPA did not assess compliance with Honouliuli's permit. Rather, we assessed whether the proposed discharge would meet the requirements of section 301(h). After considering the comments we received from the public, EPA has concluded that while the proposed discharge would meet the requirements of section 301(h) specific to BOD, TSS and pH, it would not meet water quality standards for ammonia nitrogen, bacteria, chlordane, dieldrin, and whole effluent toxicity. This failure is the primary basis for EPA's decision to deny the application for renewal of the 301(h) variance.

**Comment P68:** EPA has been delinquent in renewing the Honouliuli WWTP NPDES permit for three permit cycles.

Commenter: 75

**Response:** See response to comment P14.

**Comment P69:** What statistical basis was used by EPA to conclude, based on all the available water quality monitoring data since the approval of the first 301(h) waiver for both plants, that secondary treatment was necessary and that its beneficial impact could be measured in the receiving water environment and by the nearest swimmers and fishermen in the area of the outfall?

Commenters: 80

**Response:** The detailed bases of EPA's conclusions are explained in the tentative decision. See also the response to comment P8, P35, and P111.

**Comment P70:** Was your statistical basis in making your tentative denial of the 301(h) peer reviewed? If not (perhaps because it is not required by law), wouldn't it be a good idea to have it peer reviewed because of the tremendous financial requirements (\$1.2 billion for Honouliuli and Sand Island plants) to upgrade these plants to secondary treatment?

Commenters: 80

**Response:** There was not a peer review of the TDD. The commenter is correct that this is not required. We do not believe such a review is necessary. The public comment period provided an opportunity for all interested parties to provide perspectives on the TDD. EPA has considered the comments received and reached a final decision that the proposed discharge does not meet the requirements of section 301(h).

**Comment P71:** It would be a boon to have biostimulation in this "desert-like" oceanic ecosystem. Bring on the nutrients, let the phytoplankton proliferate, the zooplankton prosper, and the various tropic levels of nekton profit thereby.

Commenter: 3

**Response:** The benchmarks for determining whether levels of nutrients are protective of the environment are the State of Hawaii's water quality standards for nutrients. These standards were established to protect beneficial uses of open coastal waters. EPA disagrees that it is necessarily always an advantage to encourage "biostimulation" via elevated nutrient levels. Excess biostimulation can result in eutrophication, a situation which in the long-run results in the die-off of marine life, and which the State of Hawaii is attempting to prevent with its water quality standards for nutrients.

**Comment P72:** The Honouliuli WWTP does not discharge chlorophyll *a* in any appreciable quantities. The only two "exceedences" of the water quality standard for chlorophyll *a* occurred in 1991 and 1997. EPA does not identify any "exceedences" that have occurred in the past 9+ years. The "exceedences are not statistically significant. The basis for establishing water quality standards for ammonia, nitrite+nitrate, and phosphorous in open coastal waters is to prevent excessive phytoplankton. The water quality standards that would indicate excessive phytoplankton (i.e., turbidity, chlorophyll *a*, and light extinction coefficient) are not being exceeded. In EPA's tentative decision to deny the waiver, it speculates that the Honouliuli WWTP's discharge "may have stimulated algae blooms" yet offers no facts to support the statement. EPA's decision should be based on science, not speculation.

Commenter: 75

**Response:** After considering the comments received from the public, EPA has concluded that the proposed discharge would likely attain the water quality standard for chlorophyll *a* (see response to comment C43). In response to the comment concerning ammonia nitrogen, please see response to comment C45 and C46.

**Comment P73:** EPA assessed nutrient data from each sampling station at each depth for total nitrogen, nitrate + nitrite nitrogen, and phosphorus. The Honouliuli discharge met all three criteria levels (geometric mean, 10% limits, 2% limits) for all three Hawaii Department of Health (HDOH) nutrient water quality standards. EPA noted that the Honouliuli discharge failed to meet HDOH standards for ammonia and chlorophyll *a* (the indicator used to measure the presence of algae). EPA also noted that ammonia contains nitrogen, excessive amounts of which can stimulate growth of large numbers of algae that can subsequently lower dissolved oxygen, reduce water clarity, and adversely affect other aquatic organisms. Ammonia concentrations complied with standards at the surface where algae might grow and exceeded standards at mid-depth only occasionally. Additionally, the chlorophyll standard (which is an indicator of algae) has not been exceeded since 1997. The lack of algal blooms suggests that current nutrient levels are not detrimental to receiving waters. This result is underscored by recent testimony from an HDOH senior staff member suggesting some nutrient receiving water standards may be overly strict. In balance, rejection of the 301(h) variance for exceeding the ammonia standard is inappropriate.

Commenter: 85

**Response:** EPA has evaluated the effects of the discharge based in part on the water quality standards adopted by HDOH. The standards for nutrients, including ammonia nitrogen and chlorophyll *a*, apply throughout the water column, not just at the surface. EPA reviewed the 301(h) application based on the standards currently in place. In accordance with 40 CFR section 131.20, the process to amend water quality standards requires the State to present the proposed amendments and the rationale for the amendments, conduct public meetings to explain and discuss the proposed amendments with the public, receive and respond to public comments on the proposed amendments, formally adopt the amendments, and then request and receive EPA's approval for the amendments. Until this process is completed, the current standards remain in effect.

After considering the comments received from the applicant and the public, EPA has concluded that the proposed discharge would likely attain the water quality standard for chlorophyll *a* (see response to comments C43-C46).

**Comment P74:** I was concerned about the methodology that was employed in both your analysis as well as the resulting conclusions. For example, I understand that you're using a moving average of quarterly monitoring records, which means you're taking geometric means from only four data points. Have any of you read the 208 water plan that was the basis for the state water quality regulations? I think in that plan they pointed out that minimum of 30 points would be the minimum that you could use for a constituent that had a very minimum scatter, and more points depending on, you know, the distribution of the data that you had. So I question how can you use a geometric mean of 4 points and claim that you're having an exceedance of the geometric mean?

Commenter: 122

**Response:** The CWA section 208 water plan, a 1977 report of a technical committee on water quality standards, served as a basis for the numerical values proposed for the nutrient section of the Hawaii's State water quality standards. In the review of CCH's section 301(h) application, EPA's conclusions were based on analyses of the data submitted by CCH in its application. While it would have been advantageous to have more data points, there is no reason that conclusions about attainment of state water quality standards could not be made with the available data. See also response to comment C39 regarding the geometric mean.

**Comment P75:** We are in the middle of the North Pacific Ocean, which is the world's largest sink for nutrients and other constituents of primary wastewater effluent. The open ocean is nutrient-deficient and can easily incorporate the constituents in our effluent without any measurable harm.

Commenter: 134

**Response:** EPA disagrees that the Pacific Ocean can be treated as a sink for wastewater discharges without regard to water quality standards. See also response to comment P30.

**Comment P76:** CCH's receiving water monitoring has demonstrated that the Honouliuli discharge is causing exceedances of WQS for ammonia nitrogen and chlorophyll a at the ZID and ZOM monitoring stations near the Honouliuli outfall. TDD at 64-65. This is objectionable as this excessive loading of nutrients risks causing declines in water clarity. Hawaii's blue clear waters are one of the prime attractions that draw tourists to Oahu and one of the amenities that makes recreating in Mamala Bay waters an aesthetically pleasing, rewarding and enriching activity for residents and tourists alike.

Commenter: 128

**Response:** EPA agrees that the proposed discharge would exceed water quality standards for ammonia nitrogen. However, after considering the comments received from the applicant and the public, EPA has concluded that the proposed discharge would likely attain the water quality standard for chlorophyll *a* (please see response to comment C43).

**Comment P77:** There is an implication in the EPA review in this case that all the enterococci levels measured represent pathogens that passed into the marine environment with the deep water effluent. It is well understood that enterococci "can be shed by bathers affecting the quality of recreational waters and resulting in possible human health impacts." Does EPA fully understand this point?

Commenter: 2

**Response:** EPA agrees that bathers can shed pathogen indicators. However, we do not believe that enterococci shed by bathers are a significant contributor to the elevated bacteria levels found

in the vicinity of the Honouliuli discharge. This is supported by the lower number of exceedances in the nearshore monitoring stations compared to the offshore monitoring stations. Enterococcus concentrations near the shoreline could have been influenced by bather activity, but EPA did not find the water quality criteria for bacteria to be exceeded at the shoreline. Moreover, section 301(h)(2) requires that the proposed discharge, alone or in combination with pollutants from other sources, must not interfere with the attainment or maintenance of that water quality which allows for recreational activities.

**Comment P78:** There are no data indicating that the discharge from the outfall has affected any near shore recreational waters.

Commenter: 9

**Response:** Hawaii's marine waters extend to three miles offshore, and are designated for recreation. This designation applies to shoreline, nearshore, and offshore waters. CWA 301(h) regulations require water quality standards to be met at the boundary of the zone of initial dilution, which surrounds the outfall. EPA's conclusions regarding nearshore waters are discussed in the response to comment C20.

**Comment P79:** We do not understand EPA's stance in applying the promulgated bacteria criteria to samples obtained prior to the effectiveness date of December 16, 2004 in this waiver application. Application of these rules prior to the effectiveness date results in arbitrary policymaking.

Commenter: 31

**Response:** As discussed in the tentative decision, data collected prior to the promulgation date were only used to give an idea of whether past treatment practices would have met present criteria. CCH has applied for a range of treatment scenarios, and the proposed level of treatment is less than the level of treatment currently achieved. For these reasons, it is appropriate for EPA to consider the bacterial concentrations that resulted from past treatment practices.

**Comment P80:** In 1992, Oceanit performed the Annual Assessment Survey of the Sand Island WWTP and in 1994 we conducted the Annual Assessment Survey for the Honouliuli WWTP (for 1993) for the then-named Department of Waste Water Management (DWWM) of the City. The objective in each project was to monitor the ocean outfall operations to assess compliance with the NPDES permits issued to each facility by the State Department of Health. In both instances we analyzed a variety of water quality data from the treatment plant wet stream and in the vicinity of the deep ocean outfall and our final determinations were that both the Sand Island and the Honouliuli WWTPs were in compliance with the NPDES requirements.

Commenter: 34

**Response:** Comment noted. There is not enough specific detail about the data analyzed or NPDES permit requirements considered in the assessments referenced by the commenter for EPA to provide a technical response to this comment. Please see response to comment P1, discussing relevant considerations that have changed since 1992 and 1994. In addition, EPA did not assess compliance with the Honouliuli NPDES permit as part of this review. Rather, EPA assessed whether or not the proposed discharge would meet the requirements of section 301(h).

**Comment P81:** During the analysis of ocean data (described in comment P80), Oceanit observed that vertical temperature profiles at the outfall depth varied rapidly compared to the seasonal temperature profiles. These variations occurred during tidal periods predominantly and were attributed to the generation of internal waves when the steep island slope intercepted the tidal wave. The resulting dynamics increase the degree of turbulence and enhance mixing. This rapid variation of the temperature profiles causes a similar reaction in the density field, which is a key contributor to the mixing of the effluent as well as the depth at which the waste field comes into equilibrium. With the limited temperature profile data available at the time, our calculations showed the wastewater plume from the outfall will come within 30 feet of the ocean surface only 3 percent of the time as opposed to 20 percent for seasonally-collected density profiles. This observation was brought to the attention of the then-named Department of Waste Water Management (DWWM) of the City but no further investigations were authorized.

In 1996, Oceanit submitted a Small Business Innovation Research (SBIR) proposal to the Office of Naval Research to further investigate this phenomenon. The proposal outlined a method to investigate the environmental effects of the rapid density variation on the wastewater plume in Mamala Bay. Oceanit was awarded the contract to install a recording temperature profiler and an Acoustic Doppler Current Profiles (ADCP) near the outfall diffuser and conduct continuous temperature and current monitoring for 12 months. The equipment was installed several hundred feet east of the outfall and the temperature and current profiles were monitored at one-minute intervals for the term of the contract. Our data showed that the wastewater plume was submerged most of the time and drifted offshore from the outfall 85 percent of the time. Calculations showed the probability of remnants of the plume reaching the shoreline was less than 5 percent and, under these conditions, the dilution of the effluent was three orders of magnitude higher. Further probabilistic risk analysis showed that the potential for a swimmer in the nearshore recreational area to ingest one-plaque forming unit of Enterococci to be about 1 in 500,000.

The findings from a 2002 research project likewise confirmed that the wastewater plume was submerged most of the time and that it drifted in a south-westerly direction away from the shoreline after reaching the equilibrium depth. It should be noted that although the WWTPs provided effluent flow and quality data during the project, the City did not contribute any financial support toward the effort; all funding for the project was provided by the Federal government.

As a result of our involvement in the above-described projects, Oceanit has a deep understanding of the dynamics that occur in Mamala Bay. Tests conducted independent of local funding show

without a doubt that the wastewater plumes discharged from Sand Island and Honouliuli outfalls do not pose a threat to the public health of recreational water users.

Commenter: 34

**Response:** EPA does not consider the analyses of flow dynamics described by the commenter adequate to assess whether water quality standards are being met. Rather, this determination must take into account direct measurements of make-up of the effluent and the marine waters in the vicinity of the outfall. When assessing whether or not the proposed discharge would attain water quality standards for bacteria, EPA reviewed actual monitoring results for bacteria and compared these results against State and Federal water quality criteria for bacteria. EPA's review concluded that bacterial concentrations associated with the discharge of wastewater from the Honouliuli outfall do not meet current water quality standards.

EPA did calculate estimates of initial dilution, using temperature and salinity profiles collected in the vicinity of the outfall, for use in the assessment of whether or not the proposed discharge would attain water quality standards for pollutants measured in the effluent, such as toxic pollutants. EPA estimated the critical initial dilution according to the technical guidance presented in EPA's Amended Section 301(h) Technical Support Document (ATSD). The ATSD indicates that the lowest (i.e. critical) initial dilution must be computed for each of the critical environmental seasons. EPA followed the ATSD guidance when assessing the initial dilution calculated by CCH in its Honouliuli application and when calculating a revised critical initial dilution from additional data submitted by the applicant. (See response to comment C10.) EPA applied the critical initial dilution in certain circumstances, such as assessing attainment of water quality standards for toxic pollutants established to protect aquatic life. Certain water quality standards, though, call for the application of the average initial dilution, so EPA also estimated average initial dilution. EPA concluded that the proposed discharge would not attain several standards.

**Comment P82:** We used our understanding of the ocean dynamics within the area to develop a risk analysis system using real time data and mathematical modeling to predict both plume surfacing and shoreline impacting events. The system - Outfall Plume Environmental Risk Assessment (OPERA) - is designed to prompt the WWTP operator to activate the disinfection function when there is a high probability of these events occurring. Operating the disinfection system only when a potential risk to public health or shoreline contamination is present will save millions of dollars annually in disinfection.

If the water quality standard for Enterococcus is being exceeded, it can be addressed by disinfection. It should not be a basis for denying the 301h waiver.

Commenter: 34, 75

**Response:** Information on the behavior of the plume has been considered in EPA's decision. Under section 301(h), water quality standards, including pathogen criteria, must be met once the wastewater plume leaves the zone of initial dilution, not just when the plume travels toward



shore. EPA disagrees that disinfection will likely be needed only when there is a risk of shoreline impacts.

EPA disagrees with the comment that the failure to meet bacteria standards should not be the basis for denying a renewed 301(h) variance because the effluent could be disinfected. EPA evaluates applications for 301(h) variances on the basis of the proposal made in the application. In this case, CCH did not propose disinfection as part of its application. Indeed, when EPA requested clarification of CCH's proposal, CCH responded with a description of six operating scenarios, but none of these scenarios included disinfection. EPA's finding that the proposed discharge will not meet bacteria standards is based on the treatment scenarios proposed by CCH. EPA regulations do not allow applications for permit renewal to be revised subsequent to a tentative decision in most circumstances, as set forth in 40 CFR 125.59(d)(5). Please also see response to comment C21.

**Comment P83:** Even at secondary treatment levels fecal bacteria, virus and nutrients will impact the coastal waters. Procedures may preclude the EPA from addressing the accumulative and marginal impacts of any given discharge on the entire coastal zone. None the less the impact of this major outfall combines with all other point and non point discharges to degrade the near shore and open sea waters.

Commenter: 38

**Response:** Comment noted. This comment does not request a change in EPA's analysis. Regarding secondary treatment in general, please see response to comment P33.

**Comment P84:** The commenter describes illnesses (i.e. skin infections and vomiting) that resulted four days after surfing at the "Bowls" surf site.

Commenter: 47

**Response:** Comment Noted. It is EPA's understanding that the "Bowls" surf site is located near the mouth of the Ala Wai canal. Based on EPA's analysis of the discharge, it does not appear that there are impacts from the discharge at distances as far away from the outfall as the "Bowls."

**Comment P85:** The City states that their discharge of the primary treatment effluent is between 1.5 and 2 miles offshore along the south side of Oahu and at depth. This is fine, but effluent is liquid and does not stay where it is released. Thus some portion of this effluent eventually comes back to shore along the heavily used beaches of Waikiki, Ko 'Olina and Ewa, as well as the others around the island, where thousands of swimmers take in gulps of sea water containing this effluent throughout the year.

Commenter: 50

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P86:** Based on consistent compliance at the shoreline and almost always at nearshore locations where recreational activities are practiced, variance denial is inappropriate. Regardless, if bacteria exceedances at or near the outfall were the primary concern, some disinfection could likely be provided without the impacts and cost of full secondary treatment.

Commenter: 85

**Response:** CWA section 301(h) regulations (40 CFR 125.62(a)) require water quality standards to be met at the ZID. As described in the tentative decision, Federal water quality standards for bacteria criteria were not met at or beyond the ZID in offshore waters. CCH's application for the variance did not indicate its intention to disinfect the discharge. Please also see responses to comments C21 and P82.

**Comment P87:** EPA places great weight on its position that potential bacteriological contamination resulting from the discharge will impair recreation in and on the water. But EPA recognizes there have been no exceedances of state and federal bacterial standards in the last 14 years in the near-shore or shoreline waters where people recreate.

Commenter: 102

**Response:** The offshore waters are also designated for recreation. State and Federal water quality criteria must be met in these waters as well as nearshore and shoreline waters. Please also see responses to comments P18, P37, C21, and P156.

**Comment P88:** In 1980, I had a project to evaluate all of the four City and County ocean outfall to see if that outfall impacted the beaches, the closest beaches. They did not find it. At that time, the recreational water was a thousand feet from shore. And so we were looking to see if sewage came towards the shoreline. And in 1995 and '96, I was part of the Mamala Bay study. This was the most stringent scientific study. And again, there was a microbial component to it and it came to pretty much the same conclusion, that there was no need for secondary treatment and the bacterial standards fairly -- you can't say for sure, but you couldn't see an impact that had a risk that would need to be secondary treatment. However, the commissioners did come up with if there's a problem, go and do disinfection. And it's my understanding that the conditions today, the monitoring is similar to what it was in the 1990s, the Mamala Bay. So the risk hasn't changed. The difference is the regulations have changed. Now we have to monitor, as I understand, three miles out and down to the bottom. So this is the reason for the variance that I see on factual standards. My recommendations would be to implement this Mamala Bay standard, recommendation. Because as I understand, the city still has not used the UV system to reduce the microbial counts down. So my recommendation is have the city use the

recommendation and you re-treat water and see if you get the bacterial counts down to the level that would be satisfactory.

Commenter: 138

**Response:** EPA is obligated to make its variance decisions based on the application provided by the permittee. The use of UV oxidation suggested by the commenter is not part of CCH's application. Had it been part of CCH's application, it would still be necessary for the applicant to demonstrate that the plant would meet all the 301(h) criteria. See also response to comment P82.

**Comment P89:** EPA's Ambient Marine Water Quality Criteria for Bacteria that was adopted by Hawaii is currently under challenge by the Natural Resources Defense Council. NRDC states that the "current EPA beachwater quality standards, which were set in 1986, use outdated monitoring standards and testing methods that do not provide timely or comprehensive information to beachgoers about their risk of getting waterborne illnesses." In response EPA called for a stakeholder conference call, a stakeholder workshop, and a meeting of experts to develop new guidelines that were supposed to be published in the end of April 2007. There apparently is a delay, no guidelines have come forth.

Commenter: 125

**Response:** The report of the experts' scientific workshop on critical research needs was published in June 2007 and provides details about EPA's timeline for developing bacteria criteria. This document is titled *Development of New or Revised Recreational Water Quality Criteria* (EPA 823-R-07-006; June 2007) and is available on EPA's website. Until new methods to detect pathogens are finalized and adopted in 40 CFR 136 and criteria using these new methods are developed and promulgated, the existing criteria remain in effect. In EPA's 301(h) analysis of whether a discharge can attain water quality standards for bacteria, EPA must use the currently applicable water quality standards, as identified in the TDD pages 43-44

**Comment P90:** Under certain conditions, the offshore outfall effluent has been observed moving toward the shoreline from the air. Further, it has been reported that the recent dumping of 48 million gallons (48,000,000,000) of raw sewage could have been avoided by trucking this to the Sand Island treatment plant by public union workers, but the present City administration ordered that it be dumped into the receiving waters of the Ala Wai Canal to flow seaward because "there was no alternative." This action shocked Honolulu's residents and myriad tourists, making global headlines as bacteria backwashed onto our famous beaches with the surface currents and tides.

Commenter: 95

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P91:** The Environmental Groups are well aware of bacteria results associated with Honouliuli's discharges and are worried about the health and environmental consequences on their members, the general public, and the aquatic environment. As documented by the TDD, CCH's receiving water monitoring data have shown on occasion high enterococci bacteria levels exceeding applicable water quality standards in nearshore monitoring stations landward of the Honouliuli outfall "suggesting that the Honouliuli plume may occasionally hit the nearshore waters." Furthermore, the TDD correctly documents that off-shore monitoring station data frequently has shown enterococci bacteria levels exceeding WQS, well supporting EPA's conclusion "that bacterial concentrations associated with the discharge of wastewater from the Honouliuli outfall do not meet current water quality standards."

Commenter: 128

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P92:** The Environmental Groups note that EPA promulgated new WQS for Hawaii waters effective December 16, 2004 pursuant to the BEACH Act of 2000. These BEACH Act WQS establish a single sample maximum enterococci bacteria limit of 104 to 501 cfu/100 ml, depending on frequency of use of the waters. The HDOH has yet to amend Hawaii HAR to specify the water usage for the Mamala Bay waters in issue and the appropriate enterococci cfu WQS. Thus, it remains a factual question to be resolved in each permit determination what the level of water contact usage in the waters in issue and thus the appropriate enterococci WQS under BEACH Act rules. Based on factual data in CCH's application (2003 Recreational Use Survey by Ward Research referred to in TDD) as well as the administrative record evidence by this letter, Mamala Bay farshore waters are in fact used frequently for contact recreation. For these reasons, 104 cfu is the appropriate single sample standard to apply for all surface waters of Mamala Bay, including those near the Honouliuli outfall, to ensure public health protection. The TDD establishes, however, that the Honouliuli discharge causes WQS to be violated whether the standard is 104 or 501 (or some value in-between) cfu/100 ml.

Commenter: 128

**Response:** With respect to the appropriate single sample bacteria standard, please see response to comment C17. As noted by the commenter, EPA compared bacteria results to both values and concludes that the discharge results in exceedances of both 104 cfu/100ml and 501 cfu/100ml.

**Comment P93:** EPA should further consider evidence from the Mamala Bay Study Commission which would support finding that the Sand Island and Honouliuli WWTP effluent plumes, taken together, risk causing exceedances of WQS in the near-shore waters. See MB-5, a study done by Alan F. Blumberg and John P. Connolly, of HydroQual, Inc. ("the Blumberg Study"). The Blumberg Study calculated the frequency with which pre-BEACH Act WQS at Diamond Head, Queen's Surf, Waikiki, Ala Moana, Sand Island, Ewa, and Oneula beaches were exceeded over a given year. During the study's one-year simulation of weather and current conditions, the researchers found 17 instances where fecal coliform standards were exceeded,

with 16 of those instances “due solely to the outfall sources.” A total of 402 violations of enterococci standards occurred at the same beaches over the same period. “Approximately 50 percent of these were due to outfall sources,” the researchers concluded.

Commenter: 128

**Response:** Comment noted. This comment does not request a change in EPA’s analysis.

**Comment P94:** The water quality standards for chlordane and dieldrin that EPA states are being exceeded are intended to prevent bioaccumulation in fish, yet data do not show bioaccumulation of chlordane or dieldrin in fish tissue.

Commenters: 75, 85

**Response:** As indicated in the final decision, EPA does not believe that available fish tissue data, in and of themselves, point to adverse impacts from the discharge. However, the absence of detections of these pesticides in fish tissue sampling does not change the fact that water quality standards have been exceeded. Water quality standards are set at protective levels that prevent unacceptable levels of bioaccumulation. The degree of protection built into the water quality standards is designed to ensure that adverse results will not exist in the receiving water. See also response to comment C63.

**Comments P95/P96:** Production of dieldrin and chlordane has been banned for about 20 years; consequently, these two products have not been available for use for a significant period of time. The presence of pesticides noted by EPA is likely due to pesticide-contaminated groundwater leaking into the sewer system. Funds that would be spent to provide secondary treatment would be better spent on collection system improvements to reduce groundwater infiltration. Why spend hundreds of millions of dollars to eliminate this from a deep ocean discharge when much more contaminated groundwater leaches constantly into our streams and nearshore waters.

Commenter: 78, 85

**Response:** EPA does not disagree with the description of how pesticides are likely entering CCH’s collection system. However, EPA has reviewed CCH’s application based on the 301(h) statutory and regulatory requirements, one of which is compliance with water quality standards. EPA found that the proposed discharge would not attain the water quality standards for chlordane and dieldrin. As has been noted in other responses, EPA agrees that collection system improvements are necessary. In order to protect water quality and adhere to the CWA, both collection system problems and treatment plant deficiencies must be addressed. It is EPA’s intention to work with CCH and the State of Hawaii to develop comprehensive schedules for necessary upgrades to CCH’s collection system and treatment plants.

EPA does not disagree that there are sources of pollution other than the Honouliuli treatment plant impacting streams and nearshore waters. Please also see response to comment P64.

**Comment P97:** EPA relies on the presence of two pesticides in the effluent and concludes that pesticides dieldrin and chlordane are adversely affecting ecological populations and human uses of surrounding waters. This statement is not supported by data. Recent, more sensitive testing using GC/MS analysis confirm that no dieldrin is in our effluent, and chlordane is found at a far lower concentration than reported. Most important, these compounds have not been found in fish tissue.

**Commenter:** 102

**Response:** See response to comments C25, C63, and P94.

**Comment P98:** EPA pointed out chlordane and dieldrin in the wastewater. Allow the city to fix its I/I problem rather than trying to fix this out in the ocean.

**Commenter:** 122

**Response:** EPA agrees that there could possible be reductions in pesticide levels if all I/I problems in CCH's collection system were addressed. However, based on the scope of the deficiencies in CCH's collection system, and the need to address pipes throughout the system, we are not optimistic that collection system repairs will result in significant declines in pesticide levels in the near term. See also response to comment P95 and P96

**Comment P99:** The WET test method using *Tripneustes gratilla* is not an approved method and should not be used to measure compliance with water quality standards. The WET test method using *Ceriodaphnia dubia* is an approved method and has not exhibited toxicity.

**Commenter:** 75

**Response:** See response to comments C27 and C33.

**Comment P100:** EPA is concerned that laboratory testing showed that primary effluent had some toxic effects on sea urchins. Why inflict severe financial pain on our residents to minimize theoretical impacts on a small patch of ocean floor, especially when actual marine surveys indicate no adverse impacts?

**Commenter:** 78

**Response:** Results of whole effluent to toxicity testing using the sea urchin *Tripneustes gratilla* as test organism clearly detect toxicity in the treated wastewater. To receive a CWA section 301(h) from secondary treatment, the applicant must show that all water quality standards are met. CCH has not demonstrated that all water quality standards have been met. Regarding the point regarding the results of marine surveys, see also response to comment P8. Regarding the financial considerations, see response to comments C81 and C86.

**Comment P101:** EPA determined the Honouliuli discharge exceeded the toxicity standard and the receiving waters exceeded a nutrient standard (specifically, ammonia); consequently, the discharge cannot be determined to be protective of indigenous fish, shellfish, and wildlife. Aggregate toxicity is measured with the whole effluent toxicity test using a sea urchin specimen. This test protocol is problematic, unreliable, and difficult to conduct, especially with the sea urchin specimen. Consequently, basing compliance on this test is imprudent.

Commenter: 85

**Response:** See response to comments C30-C34.

**Comment P102:** You showed in your presentation that whole effluent toxicity, the WET test, confirms toxicity. We believe this is an incorrect use of WET test results and an overreaching conclusion on WET tests in the face of field monitoring showing no toxicity. You are using results of tests performed on a marine organism that is not on the EPA's approved list of WET test organisms, the sea urchin. You are using results from tests using draft protocols, not formerly approved by EPA. You have dismissed the positive results of tests performed on an approved sensitive species, and we have performed WET tests on three other species and found no toxicity effects.

Commenter: 102

**Response:** See response to comments C27 and C33.

**Comment P103:** EPA pointed out there's a problem with the whole effluent toxicity. The Ceriodaphnia was sufficient, but there were problems with the sea urchin fertilization, which is a difficult protocol. And your own report suggested that another species be considered. But how can you make a conclusion, and therefore this is conclusive?

Commenter: 122

**Response:** EPA concluded that the discharge does not attain the Hawaii water quality standard for WET. EPA's guidance recommends WET testing on multiple species and using the most sensitive species to make conclusions about effluent toxicity. In this case, the Hawaii sea urchin (*T. gratilla*) was found to be more sensitive than a fresh water flea native to the U.S. mainland (*C. dubia*). See also response to comment C33.

**Comment P104:** While fish and corals population data for the Honouliuli discharge is inconclusive, whole effluent toxicity and pesticides effluent monitoring data demonstrate that the discharge is endangering the local ecosystem. CCH's DMRs document that the HWWTP discharge has been consistently toxic to a local species of sea urchin in laboratory testing – thus violating Hawaii's WQS prohibitions on discharging toxic pollutants in toxic amounts. TDD at 57-62, 71. These DMRs further show that the HWWTP has been consistently discharging the

pesticides chlordane and dieldrin above the WQS for these pollutants . TDD at 54-57. It is well accepted that discharges of toxic pollutants above state or federal standards generally supports a finding that such discharges pose an imminent and substantial endangerment to the environment. See *Lincoln Properties Ltd. V. Higgins*, 1993 U.S. Dist. LEXIS 125, at \*46, 49 (E.D. CA 1993), *Raymond K. Hoxsie Real Estate Trust v. Exxon Educ. Found*, 81 F. Supp. 2d 359, 367 (D.R.I. 2000), *Interfaith Cmty. Org. v. Honeywell Int'l, Inc.*, 2003 U.S. LEXIS 8898, at \*107-08 (D.N.J. 2003). It is reasonable and prudent for EPA, applying precautionary principles, to seek to curb discharges that exceed the WQS meant to protect the ecosystem from pollution harms.

Commenter: 128

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P105:** I agree with the gentleman who stated that sewage outflow will not stay in one place in the "deep ocean," but will come to the surface and that water will be affected.

Commenter: 7

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P106:** Past current studies have shown that there is significant initial dilution and any impacts from the effluent are neutralized immediately.

Commenter: 9

**Response:** EPA disagrees. See responses to comments P31, P81 and C10.

**Comment P107:** EPA's recalculation of available dilution directly or indirectly causes the "exceedences".

Commenter: 75

**Response:** EPA disagrees. See responses to comments P81 and C10.

**Comment P108:** There are two conditions that I'd like to bring up. One is with increased re-use of this effluent, of the R-1 to the recycled water, there will be less dilution. Because of that, there's likely to be more concentrated pollution going into the ocean. So we fully support using this recycled water. And because of that, the changing condition might be more pollution going into the ocean. As we know, dilution is the solution to pollution. In this case, we might be taking away some of that water for other uses, which is important.

Commenter: 143



**Response:** As noted in the TDD, discharges from the Honouliuli WWTP that include secondary and tertiary treated water along with primary treated water in the effluent often do not meet water quality standards. If CCH were fully utilizing the secondary and tertiary treated water, and discharging only primary treated water through the outfall, a higher rate of exceedance of water quality standards would likely occur.

**Comment P109:** But this second thing is something that hasn't come up tonight too often, is the great growth that's going to happen out in Ewa. There will be tens of thousands of new homes out here, all of them with toilets, all of them hooked up to the system; and that's going to add even more burden to this facility. So it's time.

Commenter: 143

**Response:** Using the technical guidance presented in the ATSD to calculate initial dilution, EPA accounted for population growth through the end of the next permit cycle, 2012, based on the estimated flow presented in the application. The initial dilution calculation is based on the predicted peak 2- to 3- hour effluent flow for the new end-of-permit year, 2012.

**Comment P110:** The TDD well documents that the HWWTP discharge is causing or contributing to adverse impacts on Mamala Bay waters – even without considering (a) the cumulative impacts from the neighboring Sand Island WWTP discharge, (b) the fact that the Honouliuli discharge is now frequently (and illegally) diluted with R-1 water, a practice which should stop in the future, thus likely leaving the Honouliuli discharge to have higher pollutant concentrations in the future, and (c) that growth in the Honouliuli service area will likely lead to increased volumes of sewage discharge from the HWWTP.

Commenter: 128

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P111:** Oahu's fishermen are catching fish that have been swimming close to the area of release of this wastewater, and eating or selling these fish to the public to eat. While the wastewater may be quite dilute by the time it is consumed by any of these entities, the fact remains that it is still being consumed by them!

Commenter: 50

**Response:** EPA's conclusion that the proposed discharge would not protect recreational fishing (fish consumption) is based on the expected failure of the proposed discharge to meet water quality standards for dieldrin and chlordane. Based on the exceedances of Hawaii's water quality standards, EPA continues to conclude that pollutants discharged from the Honouliuli outfall could contribute to bioaccumulation in fish in the vicinity of the Honouliuli outfall. As a

result of these exceedances, the applicant has not demonstrated that the discharge allows recreational activities, specifically fishing.

**Comment P112:** You pointed out there's bio-accumulation in reef fish, but you also found this in the control station. So how can you attribute this to the outfall?

Commenter: 122

**Response:** EPA is not attributing bioaccumulation of contaminants in reef fish to the discharge. See also responses to comments C55 and C63.

**Comment P113:** Contrary to any scientific testimony given at the May 15, 2007 public hearing, it is completely against normal reason that one can have a continual flow of anything into the ocean and that it not be adversely affected.

Commenter: 7

**Response:** CWA 301(h) regulations allow discharges of primary treated wastewater to the ocean if the applicant can prove that certain criteria are met. These criteria include the need to meet water quality standards, to ensure that a BIP is protected, and to ensure that recreational activities in and on the water are protected. The applicant has not proved that the discharge meets these criteria. EPA's assessment of the data indicates that the discharge does not meet water quality standards and the BIP and recreational activities are not protected.

**Comment P114:** It is necessary to keep a close watch on resulting water quality where a waiver is granted, and to be prepared to change regulatory stipulations or revoke the waiver where the monitoring shows it to be necessary. Secondary treatment, per se, is not the goal; the goal is water of high quality along with the public safety and enjoyment so produced.

Commenter: 101

**Response:** When Congress adopted the CWA in 1972, it mandated use of secondary treatment by all POTWs. Section 301(h), added in 1977, established a narrow exception for some POTWs discharging to the ocean, but only when stringent, very specific criteria – set forth in the Act – were satisfied. In making decisions as to whether a facility may receive a 301(h) variance, EPA must evaluate the specific criteria set forth in section 301(h) of the CWA, and cannot grant a variance unless all criteria are satisfied. One criterion is the requirement to meet water quality standards.

**Comment P115:** Please explain in plain language whether the upgrade of the Sand Island and Honouliuli sewage treatment plants to the secondary level is a legally required issue or simply a disagreement about the quality of the effluent/discharge from these plants. The City

administration is saying it's an issue of effluent /discharge disagreement. This argument doesn't make sense since cities that discharge their treated effluent in the Pacific, Atlantic and Great Lakes would not need to upgrade their treatment plants if that's the issue.

**Commenter:** 4

**Response:** EPA's decisions on 301(h) variance applications are based on whether the applicants have demonstrated that the discharges will meet the requirement for a CWA section 301(h) variance from secondary treatment requirements. Unless the specific requirements set forth by Congress in the Clean Water Act are met, the variances cannot be granted and secondary treatment is required.

**Comment P116:** Despite the fact that the City has improved the quality of the wastewater, and there is no evidence that the Ewa outfall is causing or has caused any harm to human health or the marine environment, the EPA has changed its position in now recommending denial of the 301(h) waiver originally granted in 1991.

**Commenter:** 5

**Response:** See responses to comments P1, P29, and P35.

**Comment P117:** The very basic teachings of environmental engineering identify that the necessity of artificial treatment, whether primary or secondary treatment or some other form of treatment, is due to the inability of nature to cleanse itself to a level where "nature can handle it." The key concept was that the treatment level should be to a point where "nature can handle it." When Hawaii chose its method of treatment in the 1970's, the logic was that mechanical primary treatment would be provided, and that Hawaii would utilize its enormous natural resource (our deep and vast ocean) to clean up the rest of it. The deep ocean outfalls and the dilutive and assimilative capacities of the Pacific Ocean would provide the rest of the treatment including secondary treatment, disinfection and dilution. Numerous studies have identified this capability. Our steep shorelines, huge dilution by the ocean currents, and natural disinfection by salt water and sunlight affords us "natural secondary treatment." The original approach to Honouliuli's wastewater treatment level is consistent with the very basic purpose of wastewater treatment, treatment to a level where "nature can handle it." Even the most stringent WWTP discharge limits in the continental U.S. still rely on nature to provide some further treatment, such as dilution.

**Commenter:** 51

**Response:** See responses to comments P3, P8, and P30.

**Comment P118:** I hope your agency will look at the issue holistically and not legalistically. The EPA has brought much benefit to our kids in Hawaii by implementing many tangible rulings

that had real benefits. Please continue on this type of course and not be part of the world of legalism instead of realism.

Commenter: 51

**Response:** See response to comment P2.

**Comment P119:** It is unfortunate that environmental groups do not spend more time and energy on educating the public on how to prevent sewage spills rather than suing the City. It is truly heartbreaking to see the City's dedicated Environmental Services staff, who are already overburdened with the many sewer upgrade projects, having to contend with lawsuits and the secondary treatment waiver issue.

Commenter: 78

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P120:** I recently attended an information meeting held by the city. The case was made that we are not alone, that 14 other cities have 301 waivers. The common dominator seems to be cities with a waiver all have the benefit of the natural cleansing action occurring in an ocean.

Commenter: 90

**Response:** 301(h) variances are only available to publicly owned treatment works (POTWs) which discharge into ocean waters. Municipalities which do not discharge their waste water to the ocean must use at least full secondary treatment. While it is true that a few other municipalities are operating under 301(h) variances, most POTWs discharging into the ocean utilize at least full secondary treatment. In Hawaii, of the nine POTWs discharging to ocean waters only two operate under variances. On the west coast of the continental U.S. only one city, San Diego, currently operates under a variance and does not have plans to upgrade to secondary treatment. On the east coast, from Rhode Island south, around the Gulf Coast to Texas, there are no cities discharging under 301(h) variances.

**Comment P121:** In specific cases, however, Congress realized that the universal requirement for secondary treatment was unnecessary and imposed unproductive costs on cities. Hence the 1977 Clean Water Act Amendments included section 301(h), to provide an exception to the general rule. (Further recognition by Congress of the desirability for EPA to consider benefits and costs of its actions was conveyed in the 1996 Amendments to the Safe Drinking Water Act.) While the 301(h) waiver process falls far short of the ideal in terms of balancing benefits and costs, it is a step in the right direction. In the case of Honolulu and other coastal cities, the universal secondary treatment rule was seen to be egregiously and indefensibly costly, especially in relation to the lack of benefits to be achieved. More than twenty years of studies have shown

that Honouliuli has not significantly degraded benthic habitat, reduced or harmed marine aquatic populations, nor interfered with recreational uses of the receiving waters. Honouliuli is as clear a case as can be found where benefits of secondary treatment fall short of costs. Economic analysis of additional treatment at Honouliuli (as with the Sand Island outfall as well) is fundamentally quite simple. With no physical benefit, secondary treatment offers no public value; and the benefit/cost ratio is zero. Whether the cost is \$400 million or only \$400 dollars, such a project would satisfy no investment criterion known to economics. The transfer of \$400 million from taxpayers to underwrite public sector wastewater treatment will instead cause noticeable deterioration in output, income and employment for Oahu. Given the importance of Oahu to the state's economy, effects will be felt in the neighbor island counties as well, for many years in the future.

**Commenter:** 101

**Response:** See responses to comment P2, C81, and C85.

**Comment P123:** Since 1996, the City was told that EPA would be issuing a 301h permit. I was told that the release of the draft permit was eminent as late as 2002, my last year as Director of Environmental Services. I was personally told by Ms Alexis Strauss of EPA Region 9 that her office intended on issuing the permit. This message was repeated to my predecessor, Mr. Ken Sprague, his predecessor Mr. Felix Limtiaco, and the former Managing Director of the City, Mr. Ben Lee. Today, I am baffled as to why this is no longer the position of Region 9. I stand before you, a resident of Honolulu who is dismayed that the EPA has chosen, after 12 years of administrative extension, to consider rescinding the 301h waiver. The appearance is that commitments made to the previous administration are not longer valid under a new administration. To me, these were not commitments made to an administration but commitments made to the people of Honolulu.

**Commenter:** 112

**Response:** This comment is similar to comments questioning why EPA is denying the variance request now, when a variance was allowed for the prior permit. See response to comment P1 for regarding factors that have changed over the last several years.

**Comment P124:** The reason presented by the EPA for denial of the 301h wavier does not appear sound. It was brought to the EPA's attention in 1995 that we had concerns about a single permit for the Honouliuli facility, prior to the completion of the secondary facility. In fact, Mr. Limtiaco and I discussed with the EPA the potential need for two permits at the Honouliuli facility. EPA staff responded that this was not necessary and that they would always recognize that a reclamation facility would be "piggy backed" on the primary facility. We were led to believe that this would not jeopardize the 301h waiver.

**Commenter:** 112

**Response:** EPA is not denying CCH's request for a 301(h) variance because there is only one permit for the discharge through the outfall. Furthermore, EPA does not see how having a separate permit for the reclamation facility would change EPA's conclusion that the treatment plant does not qualify for a 301(h) variance, as the proposed discharge must meet water quality standards alone in or combination with other sources.

**Comment P125:** I am not here tonight to talk about the lack of impact that the Honouliuli plant has on the marine resources because even the 122-page summary document written by EPA denying the 301(h) waiver permit for this plant says that there is no impact. I am here because I believe the EPA is not interested in what the science says or what we, as citizens think. Why do I say that? Because in 1991 the City applied for and received a 301(h) waiver from EPA for the Honouliuli plant allowing them to discharge as they do today. The 301(h) permit is good for 5 years so in 1995 the City again applied for a continuation of their 301(h) waiver. It only took the EPA to March 2007 to tell the City that they would not renew the waiver for Honouliuli. That's 12 years! How cavalier! No governmental agency should show such disrespect to its citizens.

**Commenter:** 113

**Response:** See responses to comments P1 and P14, regarding what has changed since 1991, and why there were delays in issuing the TDD.

**Comment P126:** The Federal Government can be very helpful in providing monies and resources for environmental protection and restoration.

**Commenter:** 7

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P127:** It is hogwash that Oahu sewer fees need to be increased to \$300+ per month if Oahu complies with secondary treatment of all sewage.

**Commenter:** 7

**Response:** Comment noted. See also response to comment C86.

**Comment P128:** More recently the City administration, lead by the mayor, held two regional town meetings on August 14 and 22 to drum up public support for his fight against the EPA. The mayor claimed he wants to save the taxpayers money on fines and higher sewer bills. However, fines and higher costs would not be an issue if the City had complied with the EPA and the Clean Water Act from the outset; so "saving money" on fines and costs to Honolulu taxpayers at this late date appears to be an oxymoron in this case.

During the public presentations to garner support for his battle, the mayor and his department heads strategically segmented Honolulu's sewer system into a) the "collection" system of sewer pipes and force mains, and b) the "treatment plant" system where sewage is processed at mostly primary level, and sometimes not that much, and sent to sea. Following this segmentation, the mayor claimed that Honolulu cannot afford to both fix the collection system and upgrade the treatment plants. However, he refuted and dismissed salient questions about the excessive cost of an elaborate transportation system in lieu of long-needed waste treatment plant upgrades.

Commenter: 95

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P129:** The present City administration also threatens to increase our sewer bills up to \$3,600 annually - \$300 per household per month - on top of the presently slated increases of 25% in 2007, 25% in 2008, 18% in 2009, 18% in 2010, and 5% in 2011 – a whopping total of 91% over 2006 rates. These phenomenal increases are intended to upgrade a portion of our wastewater collection system, only, at greater cost in part because the previous City administration was allowed through an EPA waiver to neglect the necessary upgrades, and additionally "raided" Honolulu's sewer improvement fund of over \$50 million for other uses. Are there no federal funds for waste treatment plant and collection system upgrades after this decades-long delay through EPA waivers, serving only to mollify political interests at the expense of Honolulu taxpayers?

Commenter: 95

**Response:** Federal funds are available to support wastewater infrastructure upgrades via low interest loans from the Clean Water State Revolving Fund. Additionally, Hawaii's congressional delegation has historically appropriated funds via the earmark process to support Hawaii wastewater improvements.

**Comment P130:** This mayor has no problem jacking up taxes for very controversial, hugely expensive transit plans but is able to scofflaw when it comes to the ongoing safety of the citizens. The argument that it would be too costly is ridiculous in light of the City's intention to spend 6 billion on a mass transit system. If they can't find 400 million, how can they say they can find 6 billion for a train? The City also has windfall tax increases from their property taxes that have increased as much as 200 percent in some communities. This is not a matter of money, it is a matter of safety and I hope the EPA stands fast in its mission to make our waters safe.

Commenter: 46

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P131:** The same city wants to spend 5 billion dollars on a fixed rail system that the majority of the citizens here believe is: unnecessary; will not solve traffic problems; will not be ridden; is inflexible; will break down and there will not be money for repairs; a financial windfall for someone. If the city can afford 5 billion for a useless train, it can afford 1.2 billion for wastewater treatment.

Commenters: 15, 100

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P132:** I do not understand why the local community leaders and high profile politicians are creating a climate of fear on the taxpayer with regards to the cost of the potential upgrades at these two plants.

Commenter: 18

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P133:** I am against directly or indirectly exporting waste: solid, liquid, or gaseous. Advanced waste technologies are vital to this landlocked location. Regulatory pressure may force the city to migrate to or develop advanced waste treatment technologies, and to realize the actual cost of our waste streams.

Commenter: 48

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P134:** The sale of city owned housing, reduced administrative expenses, increased parking fees, direct investment from state, city and federal governments in older neighborhoods would spur redevelopment and increased sewer contributions, rather than reliance on urbanization to fund ballooning city obligations.

Commenter: 48

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P135:** The agricultural lands that should be providing crops to sustain our population are being devoured by residential development for newcomers to bloat the tax bases to support more wasteful spending. We have clearly now learned that our tax increases are not intended for necessary and long-overdue plant upgrades for public and environmental health and safety, but more for white-elephant political legacy deals such as elevated rail which will do nothing to relieve traffic congestion, but will undeniably blight Honolulu's scenic landscape from Manoa to



the Honolulu waterfront. Yet, in the face of forcefully promoting this five billion dollar transit behemoth, the present mayor, as did those before him, claims that compliance with the CWA is "unnecessary" and "a waste of money." Clearly, fiscal priorities in the interests of public health and safety are being trumped by political will.

Commenter: 95

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P136:** The costs incurred already for sewer infrastructure repairs are important but it is equally important to note that in addition to the sewage spill into the ocean, there was also sewage released at the mayor's order instead of dealing with the pick up and management of the situation.

Commenter: 74

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P137:** Those of you who are living in \$800,000 homes, what is \$300.00 more a year? You are probably going to sell your home in a few months or a year for profit. People are here in Ewa because it is fairly affordable, not for the weather or the traffic. Been in the traffic at 4 a.m.? The mass transit will benefit only the leeward side. Yet the whole state will have to pay for it. So what's the beef? I rest my case!

Commenter: 99

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P138:** The city paid for a full page ad advertising how this is unnecessary and will cost the city 1.2 billion dollars that the city can't afford. They spent our money on this ad.

Commenter: 100

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P139:** This City may have difficulty paying for upgrading the sewage treatment plants, but this must be examined against the entirely unacceptable debt that is being put upon us for a rail system that will not align well with the traffic congestion problems of this island. The mayor wants a multi-billion-dollar rail system that by all calculations (except the well-paid consultants) will absolutely exceed our ability to pay for it.

Commenter: 74

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P140:** As a sanitary engineer in private practice, I and our engineering companies would greatly benefit by your denial of the 301(h) waivers for the Honouliuli and Sand Island plants. Our design profession would stand to reap approximately 10 percent of the \$1.2 billion construction cost or \$120 million dollars in design and construction management fees. Except for the engineering fees for the upcoming mass transit system, the engineering fees for the upgrade of the Honouliuli and Sand Island plants would be the largest in Hawaii's history. You must ask yourselves, why is Hawaii's engineering community firmly and uniformly against your denial of the 301(h) waiver when they would greatly benefit financially by the waiver denial?

Commenter: 80

**Response:** Comment noted. It's presumed that the question is rhetorical and a response is not sought.

**Comment P141:** I urge you in the strongest terms to analyze the City's waiver application in terms of benefits and costs as well as the extensive scientific evidence. The analysis should consider (a) the lack of demonstrated effects of the existing outfall on human or marine faunal health; (b) the lack of any demonstrated negative effects on recreational or commercial or aesthetic values; and (c) the existence of sewage-related projects other than secondary treatment that might have a real and positive impact on both environmental quality and economic well-being of Honolulu's citizens and visitors.

Commenter: 100

**Response:** See responses to comments P8, P26, P29 and C68.

**Comment P142:** I'm pragmatic enough to know that approval of the variance may not happen. In that event, I'd like to suggest one solution that's circulating in this county now, which is an amendment to the City Charter which will enable us to, as citizens, to initiate tax law. I would like to ask every citizen in this county to initiate tax law -- to put this petition in the ballot so that you may initiate tax law. This will allow us as citizens to put a very substantial constitutional roadblock to the upgrade. Please consider the Let Honolulu Vote petition.

Commenter: 130

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P143:** Other islands don't have a problem paying for secondary treatment. The City has exaggerated the cost that folks here are going to have to pay. Everyone in the state, other

islands can afford secondary treatment. We can too. We just don't need exaggerated costs going on in the media to scare people. The claim that this support for the waiver is not orchestrated is clearly BS.

Commenter: 144

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P144:** The Environmental Groups have read CCH's various statements in reaction to EPA's TDD and note that the City has primarily focused on the significant costs that secondary treatment upgrades will incur. EPA's decision cannot and should not be based upon the expense to comply, however. Instead, EPA's decision must be based on what is legally required by the BEACH Act and 301(h) decision criteria enumerated in EPA regulations. Environmental Groups agree that the application of the relevant laws and regulations require a denial of the waiver. Environmental Groups believe that the costs involved to the secondary treatment upgrade should be handled through a separate process involving stakeholders. We therefore support a reasonable time schedule for CCH to come into compliance as part of the terms of the new permit when it is issued.

Commenter: 128

**Response:** Comment noted. See also response to comment C81.

**Comment P145:** The City and County of Honolulu is totally committed to protecting the ocean and our beaches. As Mayor Hannemann already stated, this capital improvement budget saw that we doubled in 2006 our capital program to 250 million. In 2007, it was increased another hundred million to 350 million. In 2008, we are proposing another \$350 million, and we have just agreed to a 300 million settlement on our critical force mains. Our rates back in 2005 started at \$33 a month. In 2011, with Mayor Hannemann's commitment to our collection system, it'll grow to about \$90 a month, three -- three-fold. But we do not have an unlimited wallet.

Commenter: 102

**Response:** See responses to comments C81 and C88.

**Comment P146:** I recently attended the public meeting held at Kapolei Middle School on the variance and was outraged at the lack of information and testimony against the cities stand. The audience was obviously stacked against opposition to the cities position. There were some of us who were against pollution of our water but were not given the opportunity to speak due to the length of the meeting held on a work night.

I would also like you to hold another public meeting and invite the opponents of this atrocity, like the Sierra Club and other environmental groups. This is too important an issue to be forced on this community.

Commenter: 46

**Response:** All comments, whether in writing or given orally at the public hearing, are considered in EPA's review.

**Comment P147:** The state Department of Health consistently fails to implement the intent and spirit of the over thirty year old Clean Water Act (CWA)

Commenter: 38

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P148:** I would like to urge the Environmental Protection Agency to please enforce the rules/laws and insist on an Environmental Impact Statement on the proposed Honolulu Waste Water Treatment plan.

Commenters: 10 and 67

**Response:** The process of reviewing an application for a CWA section 301(h) variance from secondary treatment requires the review of specific criteria but does not require the development of an Environmental Impact Statement under the National Environmental Policy Act. See also response to comment P24.

**Comment P149:** The City has established and implemented an extensive and comprehensive monitoring program to evaluate the impact of the discharge on public health and the marine environment. The City's current monitoring program has been an EPA-approved program since 1991. The monitoring program involves comprehensive study of the marine environment (including but not limited to animals and sediment) at the outfall.

We've established and implemented an extensive and comprehensive monitoring program to evaluate the impact of the discharge on public health and marine environment. The city's current monitoring program has also been an EPA-approved program since 1991; and the results of the city monitoring program demonstrates that the Ewa outfall has had no negative impact on the marine environment of the outfall, recreational uses of our shoreline and nearshore waters.

Commenter: 5

**Response:** See response to comment P29.

**Comment P150:** Beginning in 1983, and continually since 1986, the University of Hawaii Water Resources Research Center has produced more than 150 reports of laboratory and statistical analyses on samples taken near the diffusers for the Honouliuli and three other wastewater treatment plants. In addition, many conference presentations and peer reviewed journal articles have come out of these studies. I am currently the project manager for these studies. Our goal is to determine whether a “balanced indigenous population” of aquatic life has been maintained despite the presence of the diffuser pipe and effluents. Our studies have dealt with three components of water quality:

- Benthic sediments–polychaete, mollusk and crustacean populations
- Video tapes of the diffuser sites, photographed by a remote-operated underwater vehicle
- Live fish caught near the diffuser

Benthic studies account for the largest portion of this work. Samples are taken at several stations in and on the border of the zone of initial dilution, as well as reference stations at some distance up-current and down-current from the diffuser. Three highly respected researchers examine these samples, identifying species and taxa and enumerating the population of each. This data is sent to a fourth specialist who analyzes the three data streams together to provide a broad view of benthic life near the outfalls. This complex scientific analysis identifies significant differences, or the lack of differences, in species abundance and diversity between sampling stations. For the second type of analysis, a diver goes into the water, at about the 20 meter level, to check for any effects on shallow water areas. A visual census of fish is taken at each of four stations along the coral reef. Photographs of the ocean floor around the reef stations are studied. Results are subjected to statistical procedures designed to elicit any differences between stations located up-current and down-current from the diffuser outlets. Third, gross necropsy and fish liver histopathology is done on fish caught at the diffuser terminus and at up-current reference stations. WRRRC reports have been delivered to EPA, via Honolulu’s Environmental Services Division, for many years now. WRRRC has received no comments or criticisms of our conclusions. Hence I forego a detailed description of our findings. The clear bottom line of these studies, however, is that the diffuser has caused no significant impairment in aquatic habitat. Our benthic analyses, visual fish censuses, remote video images and histopathology studies have found no indication of significant deterioration. Instead, they indicate that a “balanced indigenous population” continues to thrive around the diffusers. Fish, shellfish and wildlife populations have been maintained and are in no danger of violating the BIP requirement. Our studies confirm that even if one or another measure of contamination may spike on rare occasions, the source of such a spike is almost certainly not the outfall. Nonpoint and other sources need intense and careful study to determine the source of such spikes. One can only conclude that secondary treatment would have no physical benefit in terms of the aquatic habitat.

**Commenter:** 101

**Response:** See response to comment P29.

**Comment P151:** We have identified several examples where the basis of your decision is not supported by sound scientific analysis. You have dismissed 14 years of field monitoring that

confirm protection of health and recreational activities. When I mention all these monitoring and sampling activities we do: Four permitted shoreline stations for bacteria every five to six days, four nearshore stations for bacteria every five to six days, surface and bottom. We monitor 12 permitted offshore stations quarterly, three of which are reference stations for nutrients, bacteria and other physical parameters. We have several benthic monitoring stations where we monitor the benthic community and sample the sediment. And we catch three species of fish, 10 to 20 fish per species, around the outfall at two sites, reference sites off Hawaii Kai, once a year, and take them to a scientist who examines the fish for lesions and tumors. And once a year we examine the coral reefs that Doc -- Dr. Brock stated. We video-record the fish communities around the outfall and videotape the diffuser pipe using their underwater remote -- remotely operated vehicle. Visually, we visually check for leaks and anything unusual from an outfall. All this monitoring, we find that there are no elevated levels of pesticides like chlordane or dieldrin in fish. We also find metals in fish tissues are equal to or lower than levels found in reference stations.

Commenter: 102

**Response:** See response to comment P29.

**Comment P152:** You point out that the monitoring plan is not sufficient. Please provide some examples of a sufficient water quality monitoring plan.

Commenter: 122

**Response:** The existing monitoring plan was developed in 1991. Since then several water quality standards have changed. In its application, CCH raised recommendations for several improvements to the monitoring plan. EPA is not making deficiencies in the monitoring plan a basis for denial of the application, and the findings section of the final decision has been clarified accordingly. If EPA's concerns with the application were limited to the monitoring program, EPA would work with CCH on improvements to the monitoring program. See also response to comment C69.

**Comment P153:** We've had this waiver since May of 1991. The city constructed 13 MGD secondary/tertiary treatment facilities. To the extent that there is demand for reused water, the advanced treated water is used for golf course and landscape irrigation. And whatever is left is combined with the primary treated effluent, so that today the wastewater discharged into the ocean includes advanced treated water.

Since I have been mayor, for the past 29 months, I have made good on my first two priorities of the campaign promise; that is, to watch people's money, be fiscally accountable, and focus on the basic infrastructure and basic city services. We have followed through with that in ways that I believe that is demonstrated, that we will not go down the paths that have been done before; that this is a new era for Honolulu. It is very perplexing that despite the fact that we've had an EPA waiver since 1991, despite the fact that we feel that the conditions have improved with respect to

how we have been operating Honouliuli, we cannot understand why this waiver now, that is being contemplated, be denied to us. I believe that we have showed in good faith through the years that I have been mayor.

**Commenter:** 5

**Response:** See responses to comments P1 and C88.

**Comment P154:** My administration has clearly demonstrated that we are willing to commit substantial resources to the sewer infrastructure, when justified and appropriate, but the EPA's denial of the 301(h) waiver would result in an arbitrary and unjustified expenditure of public funds.

**Commenter:** 5

**Response:** See responses to comments C86 and C88.

**Comment P155:** In 2002, up to 12 data collecting vessels were equipped with instrumentation to make simultaneous measurements of physical, chemical and biological parameters. As these measurements were being taken, Oceanit did not encounter any person or group engaged in recreational activities in vicinity of the outfall areas.

**Commenter:** 34

**Response:** EPA acknowledges this comment and notes that another commenter has indicated the presence of recreation in offshore waters. See next comment, P156. Additionally, CCH's recreational use survey, which was conducted in 2003, confirmed that residents participated in recreational activities in ocean waters out to two miles from shore and beyond. The survey identified recreational activities including swimming, surfing/bodyboarding/windsurfing, snorkeling, paddling/canoeing/kayaking, fishing, diving, sailing, boating, and waterskiing.

**Comment P156:** Members of the Environmental Groups include residents of and visitors to Oahu who regularly use southern Oahu's Mamala Bay waters for fishing, body contact water sports (including outrigger canoe paddling, swimming, surfing, body-surfing, boogie boarding, paddleboarding, kayaking, jet skiing and catamaran sailing) and other forms of recreation, wildlife observation, aesthetic enjoyment, educational study, and spiritual contemplation. Environmental Groups' members are well aware from extended personal observations that the general public of residents and visitors to Oahu regularly use Mamala Bay water for these purposes. During daylight hours, every day of the year there are numerous people in Mamala Bay's near shore waters engaged in various water contact sports. It is also common for many surfers to surf Waikiki's breaks at night during conditions of full moon. Finally, many members of the public engage in frequent water contact in waters well off-shore of the southern Oahu

coast, out to and even beyond three miles in the course of outrigger canoe paddling, paddleboard paddling, sailing, motor boating, and fishing.

Outrigger canoe paddling [is] one of many popular water contact sports on Oahu. For example, the outrigger canoe association Hui Waa has seventeen member canoe clubs with 1,500 members. See <http://huiwaa.com/schedule.htm>. This association is sponsoring ten long distance regattas in 2007 in Mamala Bay waters; these long distance regattas typically take several canoes full of paddlers well off-shore. In addition, member clubs conduct regular practice sessions that routinely bring several crews of paddlers up to three miles off-shore (and occasionally further). It is a common practice for paddlers to jump out and swim around in Mamala Bay waters well offshore during both regattas and practice sessions when taking a break from paddling or changing crews. In addition, outrigger paddlers routinely contact ocean waters from spray and the act of paddling while in their canoes. Furthermore, the Environmental Groups members are well aware from personal observation that the many people who regularly use small to medium sized watercraft, including paddleboards, jet skis, sailboats, catamarans, and motorboats to recreate in Mamala Bay waters inevitably receive water contact from spray.

Fishing in farshore waters is another activity that the members of Environmental Groups as well as the general public regularly engage in when boating. This activity likewise results in water contact when reeling lines in or removing fish from lines.

Given this widespread, frequent public use of Mamala Bay near-shore and far-shore waters, the Environmental Groups' members and the general public are both very concerned about water quality in these waters and at risk for being immediately affected by the Honouliuli and Sand Island WWTP discharges. It is incumbent upon EPA to act carefully and cautiously to protect Mamala Bay's waters from pollution from human pathogens associated with sewage discharged from the Honouliuli and Sand Island WWTPs.

Commenter: 128

**Response:** Comment noted. This comment does not request any change in EPA's analysis.

**Comment P157:** The Environmental Groups further urge that the Honouliuli discharge continues to endanger the ecosystem of Mamala Bay. While EPA has concluded that CCH's receiving water monitoring data does not show an adverse impact on fish and coral populations, this does not mean that the Honouliuli discharge is not having deleterious impact on the ecosystem. As EPA noted, there is a great deal of background variability in the size and extent of fish species in CCH's monitoring data based on seasonal and other factors and variability in the reliability of data collection, as well. TDD at 69. Thus, the fish data are simply inconclusive about the impacts of the Honouliuli discharge. In addition, CCH's coral study is not properly designed to give any meaningfully conclusive data on the impacts of the discharge on coral populations. As the TDD observes, "Unfortunately, any impacts subsequent to commencement of the marina construction, being much closer to the station sites, would likely overwhelm any perceptible impacts from the Honouliuli effluent and this negate any monitoring value the study might have for the outfall." TDD at 70.



Commenter: 128

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P158:** Moreover, the TDD is correct to point out that the adverse impacts observed from the Honouliuli discharge are likely to increase in the future once CCH complies with existing requirements and stops its current unlawful practice of diluting Honouliuli effluent with R-1 water. When more Honouliuli R-1 water is put to reclamation use, the Honouliuli effluent will have higher concentrations of pollutants, leading to higher concentrations of bacteria, chlordane, and dieldrin in the receiving waters and a more toxic effluent discharge.

Commenter: 128

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P159:** The only shortcoming in EPA's TDD analysis is that it fails to consider (a) the cumulative impacts from the neighboring Sand Island WWTP discharge and (b) that growth in the Honouliuli service area will likely lead to increased volumes of sewage discharge from the HWWTP. The Sand Island WWTP discharge outfall is close enough to the HWWTP discharge outfall that the effluent plumes from these two outfalls undoubtedly commingle at times – increasing the levels of pollutants above that to be expected should either discharge be considered alone. Moreover, the Honouliuli service area is expected to grow significantly in population in the future, which will lead to substantially greater volumes of sewage discharge from the HWWTP. If treatment is not upgraded at the HWWTP, this will further exacerbate the adverse impacts of the Honouliuli discharge.

Commenter: 128

**Response:** Although the effluent plumes from the two outfalls may commingle at times, substantial additional dilution will have occurred by the time that the plumes meet, given the distance between the outfalls. It is more likely that the highest concentrations of pollutants will occur in the individual plumes near the outfalls.

Using the technical guidance presented in the ATSD to calculate initial dilution, EPA accounted for population growth through the end of the next permit cycle, 2012, based on the estimated flow presented in the application. The initial dilution calculation is based on the predicted peak 2- to 3- hour effluent flow for the new end-of-permit year, 2012.

**Comment P160:** For EPA to grant CCH's Honouliuli 301(h) waiver application, CCH must show that the HWWTP discharge meets all of the criteria for granting such an application established by CWA section 301(h) and EPA regulations set forth at 40 CFR part 125, subpart G. The Environmental Groups agree with the TDD that the Honouliuli discharge fails to meet

several of these criteria. One, the Honouliuli discharge fails consistently to achieve Hawaii WQS beyond the zone of initial dilution for enterococci bacteria, whole effluent toxicity, chlordane, dieldrin, ammonia nitrogen and chlorophyll *a*. The HWWTP thus fails to meet the requirements for a CWA section 301(h) waiver established by CWA section 301(h)(9) and 40 CFR sections 125.62(a)(1)(i) and 122.4(d). Two, it is reasonable to conclude that CCH's proposed discharge, both alone and when properly considered in combination with the Sand Island WWTP discharge, will interfere with the protection and propagation of a balanced, indigenous population (BIP) of fish, shellfish, and wildlife and negatively impact recreational activities given the effluent monitoring data showing that the discharge fails to meet several WQS that are designed to ensure attainment of BIP and/or protect recreational uses. The HWWTP thus fails to meet the requirements for a CWA section 301(h) waiver established by CWA section 301(h)(2) and 40 CFR sections 125.62(b), (c), and (d). Three, CCH did not propose a new monitoring program and its existing monitoring program is not sufficient to meet the requirements of CWA section 301(h)(3) and 40 CFR section 125.63. Four, CCH has not demonstrated that its industrial users discharging to the Honouliuli collection system are in compliance with CCH's pretreatment requirements and that CCH will enforce these requirements. The Honouliuli WWTP thus fails to meet the requirements for a CWA section 301(h) waiver established by CWA section 301(h)(9) and 40 CFR sections 125.62(a)(1)(i), 122.4(d). The HWWTP thus fails to meet the requirements for a CWA section 301(h) waiver established by CWA section 301(h)(5), (6) and (7) and 40 CFR sections 125.65, 125.66, and 125.67. Thus, EPA is compelled by the CWA and its own regulations to deny the Honouliuli 301(h) waiver application.

**Commenter:** 128

**Response:** After considering the comments received from the public on the TDD, EPA has made several changes to the findings in the TDD related to the topics mentioned in this comment. EPA now concludes that the proposed discharge would likely attain the water quality standard for chlorophyll *a*. Also, EPA has clarified that any changes needed in the monitoring program do not constitute a ground for denial. EPA now concludes that CCH has satisfied the requirements of section 301(h) regarding pretreatment. However, EPA still concludes that some 301(h) criteria are not met and EPA's final decision is to deny the variance.

**Comment P161:** Our ocean resources deserve better water quality standards than what the C&C of Honolulu, local community and business leaders and high profile politicians say otherwise. The real issue is that these individuals have no raw data to substantiate their position.

**Commenter:** 18

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P162:** EPA should establish standards that consider the location of the population.

**Commenter:** 36

**Response:** See response to comment P34.

**Comment P163:** One City official, of many at the meeting who descended upon every citizen who objected, claimed that the standards had not been reconsidered in more than 10 years. He went on to say that if EPA looked at current standards and re-evaluated, the standards would likely be set lower which would make Honolulu's current practices even safer. I do not understand how this could be true. And at this time in the world, I would not imagine we'd be weakening our standards regarding water quality.

**Commenter:** 74

**Response:** Any changes to the water quality standards must follow the established amendment process in 40 CFR 131.20. Public input must also be considered as part of the process to amend a state's water quality standards.

**Comment P164:** I understand there was a city meeting on this subject at the Ala Wai Golf Course, within walking distance of me, on August 14, but I didn't see the notice in the paper. The City government has very strange ways of keeping our citizens MIS-informed.

**Commenter:** 67

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P165:** Time after time and year after year I asked the City, Wastewater, and State officials what would they would do if the Beachwalk Force Main suffered a big break with no back up line? I continually told them that I could often smell the heavy stench of sewage at several places around Waikiki and that several of the Ala Wai Outrigger Canoe Paddlers that I knew told me that several places along the canal they could frequently smell sewage particularly around Lewers Avenue on the Ala Wai Blvd area of the Canal. Canoe paddlers reported staph infection constantly. The sewer video survey did show a lot of problems and a MAJOR slump in the gravity feed line as it crosses under the Ala Wai Canal and passes up Lewers Avenue into the Beach Walk Pump Station. The survey also revealed that pile driving for tower foundations along Cartwright Road had totally distorted the sewer line so much that the video camera could not pass through it. Subsequently, a new line was laid on that street - just a block from the beach! To date, nothing has been done to fix the documented major slump on Lewers Avenue in the major gravity feed sewer collection line there. These pipe sections are coming apart while laying in ocean water which ebbs and flows twice a day with the tides under and through the reef structure that Waikiki and Lewers Avenue sits on. The surface of Waikiki is just a thin one to three foot veneer of dirt on top of the porous reef. As a result, anywhere in Waikiki when a deep foundation is dug you can watch the tide rise and fall in the water that fills the hole before the hole is de-watered (de-watering 8 stories under ocean level causes all sorts of other problems with sinkage of the surrounding land resulting in cracking and breaking of sewer connections for

blocks around - Duty Free Store basement caused sinkage of up to 8 inches for hundreds of feet around the 'de-watered' basement). Contact me for further information about this problem.

Commenter: 94

**Response:** The information does not pertain directly to the review of the 301(h) variance application for Honouliuli. This information has been provided to the EPA staff who work on CCH collection system issues for their consideration.

**Comment P166:** I just wonder whether these people who are protesting so loudly actually live near the plant. I don't see that many houses close by. It seems to be on the outskirts of nowhere and if they were near or around they would smell the reason why this plant needs to be upgraded. There should not be a smell. If there is, we are in serious trouble. Not to mention our ocean water! The WWTP in Waimanalo does not have this problem. Very rarely does it ever smell as bad as EWA. Stop, look, and listen. Visit the plant, and smell the aroma. You will be convinced too.

Commenter: 99

**Response:** The generation of odors at the plant is not a factor in determining whether the facility receives a variance from secondary treatment under section 301(h) of the CWA.

**Comment 167:** I'd like to petition Mr. Lau and those that are working in Department of Health at the EPA. Please consider taking a page from the Waihee administration when they worked very closely with the Fasi administration in ensuring that the city was able to have those waivers. This is what we believe is prudent. We want to come to a settlement that makes sense, that we can afford. At the end of the day, Mr. Lau, Department of Health employees are ratepayers. People from the Thousand Friends and Sierra Club are ratepayers. We're willing to pay. But most importantly, let's make it make sense and truly something that we can afford.

Commenter: 5

**Response:** Comment noted. This comment appears to be directed at HDOH, and no response from EPA is necessary.

**Comment P168:** To me there is an apparent inconsistency between all the "fussing" over the Honouliuli discharge and apparent "laissez faire" approach to the cage farming (Pacific threadfin or "moi") in the same general marine locale (NPDES Permit No. HI0021792). It is well known that uneaten fish food and fecal matter can adversely affect the water column as well as the local seabed. Certainly no prior treatment is required of whatever issues from the cage into the open ocean.

Commenter: 2

**Response:** The permit referred to in this comment is expired, and the facility which held this permit is no longer operating. Aquaculture operations such as the one described here must obtain permits from the State of Hawaii. Consideration of the potentially detrimental impacts of discharges from specific aquaculture operations, including discharges of fecal matter and excess fish food, on the beneficial uses of the receiving waters must be part of the development of a permit for such an operation.

**Comment P169:** Are human wastes (released from a long diffuser) intrinsically more detrimental to the sea than releases (from a veritable "point source") of penned-up sea creatures? What about pollutants in the feed?

Commenter: 2

**Response:** It may not be accurate to describe discharges from domestic wastewater treatment to be "intrinsically more detrimental" than other discharges. However, given the nation's extensive experience with domestic wastewater treatment, the CWA includes specific expectations (secondary treatment) that must be met by publicly-owned treatment works, unless the explicit criteria in section 301(h) are attained.

**Comment 170:** Dr. Donald Harleman championed the idea of using chemically-enhanced primary treatment (CEPT) as the terminal level before release of an effluent to a receiving water. Asked why his home city of Boston had not adopted CEPT for their vast new treatment facilities, he said there was "much more money in it" for the engineers when secondary was used. Is secondary treatment being pushed by those who would profit from its creation, knowing that environmentalists will unknowingly be posing as "front men"? Not only the consultants could profit immensely from a decision to move to secondary treatment, by having a considerable volume of fresh design work, but it would also financially benefit manufacturers (who will supply portions of the systems), and heavy construction contractors (who will build portions of the systems). Honolulu's taxpayers will foot the cost, for something they don't need. Surely EPA can't believe that one of its responsibilities is to ensure the solvency of consultants, manufacturers, and contractors. Past EPA opposition to chemically-enhanced primary treatment, as Boston and San Diego, has been documented by Sun (1989). It is time to reverse this position. It is time to demonstrate, with Honolulu, that a 301(h) waiver will be "just fine."

Commenter: 2

**Response:** EPA's decisions on Honolulu's 301(h) variance requests are based on the criteria in section 301(h) of the CWA. Considerations such as those suggested by this commenter are not part of EPA's evaluation. Publicly-owned treatment works are required by the CWA to use secondary treatment unless the 301(h) criteria are met.

**Comment P171:** The following statement of testimony during the above evening gives the reason why the EPA should not waver on its request for secondary treatment plant: "If we have secondary sewage, Oahu will deal with a lot of sludge." That sludge is therefore in the primary effluent that is continually flowing into our ocean. Sludge and other smothering material has proved to destroy the ocean environment.

Commenter: 7

**Response:** It is correct that secondary treatment results in a final effluent that is lower in solids than primary effluent. However, this is not a basis for denial of the variance, as the HWWTP meets CWA 301(h) criterion requirement for solids removal by exceeding 30% TSS removal. Additionally, EPA reviewed seabed deposition data and found no accumulation of solids. (TDD p. 42).

**Comment P172:** I want to add personal experiences of what I believe may be the effect of primary sewage that is dumped offshore: (1) I have swam at the man-made lagoons at Ko-Olina resort on Leeward Oahu and often notice a gray, slightly foamy, slightly oily residue on the surface of the water coming in on a certain current from the ocean outside the lagoons. (2) I was walking Waikiki Beach early evening (between April 15 and the EPA hearing of May 15, 2007, and observed a very wide area of water and beachline, a couple hundred feet, covered with a light gray, foamy substance. This had to be attributable to something unnatural.

Commenter: 7

**Response:** Based on EPA's evaluation of CCH's application, EPA does not believe that the HWWTP discharge is the likely source of these effects, given the location and relatively large distances from the outfall.

**Comment P173:** It would be preferable if the public hearings would be in a centralized location other than Kapolei.

Commenter: 18

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P174:** Please consider all impacts of denying this 301(h) waiver. Our environmental, social and economic livelihood rests on your judgment.

Commenter: 21

**Response:** EPA must base its decision on the requirements of section 301(h). Please see responses to comments C81-C86 regarding economic and social considerations.

**Comment P175:** The Sierra Club and other environmental groups are perfectly willing to make Hawaii over treat its sewage rather than risk that someone else might use our waiver as a precedent to under treat someplace else. They are not paying for it in the big picture.

Commenter: 32

**Response:** EPA's decision on the variance request for the Honouliuli WWTP is based on data related to the Honouliuli discharge. EPA's decision on the Honouliuli WWTP is not a statement by EPA on the need for secondary treatment at any other location.

**Comment P176:** The Mamala Bay Study is the first scientific treatise that I have read where the recommendations were not supported by the facts. The study reported that there were no adverse effects on either the environment or public health from the effluent discharge at Sand Island and then recommended additional disinfection pretty much on general principles. We paid \$9 million for that?

Commenter: 32

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P177:** In addition to health hazards to swimmers, surfers, and other water users, this wastewater will also be entering the food supply via seafood.

Commenter: 40

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P178:** Diversity of marine life at 200 ft depth is limited at best. As a comparison, when the old Sand Island outfall was in operation at a depth of 42 feet, the diversity in the immediate coastal waters was tremendous. There was an abundance and diversity of algae, schools of fish and shellfish. After the Sand Island outfall was moved to deeper waters, the diversity of the area decreased tremendously. Gone are the algae, fish and shell fish. The area looks rather sterile today.

Commenter: 125

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P179:** Resolution number 07-132 was submitted as a comment on the Honouliuli tentative decision. It stated the following:

BE IT RESOLVED by the Council of the City and County of Honolulu that it adopts as the goal of the city that by December 31, 2020, all city wastewater treatment plants will be in compliance with all applicable USEPA requirements and regulations without the need for any variances for the plants; and

BE IT FURTHER RESOLVED that by December 31, 2007, the city department of environmental services submit to the council a written plan to achieve the above-stated goal; which plan includes a timetable for expenditures and sewer rates to achieve the goal, and

BE IT FURTHER RESOLVED that the city council supports the city administration in its efforts to reach a "global" settlement with the EPA on all outstanding wastewater issues; and

BE IT FINALLY RESOLVED that copies of this Resolution be sent to the mayor, managing director, the director of the department of environmental services and the state department of health.

Commenter: 155

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P180:** I would like to support the concept of moving to full secondary. I feel that living in the Ewa Beach area is critical to not only my life, my family's life, and the generation that comes after that. The flora and the fauna in the ocean has been compromised and I think we, as human beings, as lovers of the ocean and lovers of Hawaii, we should do something about it. For many years I followed in the community the city's maintenance plan of the system. Money has always been appropriated for such purposes, but has never been used. For many years the pipes and the plants have been dilapidated, overused, and misused. I agree that something has to be done. We're getting population more and more in this area, and I think everything feeds into the Ewa wastewater treatment plant. So I do believe that we have to make some kind of concessions to provide protection and the quality of life and lifestyles to the people of Hawaii

Commenter: 148

**Response:** Comment noted. This comment does not request a change in EPA's analysis.

**Comment P181:** Let's set a caveat. We completely agree with folks tonight talking about the collection system. That needs to be the top priority, is getting those pipes fixed and solving that problem, ending the sewage spills. We have a lot of sympathy for Mayor Hannemann. He inherited a mess. We know. We sued the previous administration for that mess, and he inherited that. So it is top priority to get those pipes fixed. But then we need to upgrade this facility to a 21st century. Like we heard before, 22 of the 24 plants here in Hawaii have the secondary treatment

Commenter: 143



**Response:** See response to P26.

### **Names of Commenters**

- 1 City and County of Honolulu
- 2 Robert Grace
- 3 Will Espero
- 4 Alexander Tanji
- 5 Mayor Mufi Hannemann
- 6 Congresswoman Mazie Hirono
- 7 Barbara Jessee
- 8 Henry Eng
- 9 Craig Nishimura
- 10 Michelina Mayer
- 11 Eugene Lee
- 12 Alan Lloyd
- 13 Delwin Ching
- 14 Ruth Farmer
- 15 Elizabeth Connors
- 16 Danny Aagsalog
- 17 Richard Oshiro, Waipahu Neighborhood Board No. 22
- 18 Jack Grambusch
- 19 Harold Barnes
- 20 Richard Poirier, Mililani/Waipio/Melemanu Neighborhood Board
- 21 John Katahira – for Limtiaco Consulting Group
- 22 John Katahira – for Hawaii Environment Association
- 23 Ken Nakamatsu
- 24 Noel Ono
- 25 Mark Matsushita
- 26 Susan Lum
- 27 Dennis Saito
- 28 Laverne Higa
- 29 Gloria Kaneshiro
- 30 Gerald Takayesu
- 31 Leland Yee and Lawrence Agena
- 32 Jacqueline Parnell
- 33 Leslie and Marge Opulauoho
- 34 Patrick Sullivan

- 35 Rich Hargrave, Ewa Neighborhood Board
- 36 Athan Adachi
- 37 James Parker
- 38 Rick Bennett
- 39 Judith Tarbet
- 40 James Morris
- 41 Art Frank
- 42 Stuart Coleman
- 43 Jennifer Homcy
- 44 Wei Chen
- 45 Gordon LaBedz
- 46 Michael Simpson
- 47 Brent Biemann
- 48 Albert James Del Rio
- 49 Maureen Andrade
- 50 Bob Farrell
- 51 Leighton Lum
- 52 mbrooks10 @hawaiiantel.net
- 53 Tin Lung Chao
- 54 Bruce Robin
- 55 Duane Bartholomew
- 56 Dave Raney
- 57 Elizabeth McDermott
- 58 Arun Savara
- 59 Karen Hamada
- 60 Troy Hare
- 61 George Stibbard
- 62 Harry Higa
- 63 Gayle Hong
- 64 Pat and Dianna Lee
- 65 Shad Kane
- 66 Owen Tamamoto
- 67 Laura Millman
- 68 Chrystn Eads
- 69 John Pritchett
- 70 Dave Rolf
- 71 Carroll Cox
- 72 Billy Brennan
- 73 Byrnes Yamashita
- 74 Nancy Hedlund

- 75 Woodie Muirhead
- 76 Mary Woollen
- 77 Linda Wong
- 78 Roy Abe
- 79 Richard Ito
- 80 David Yogi
- 81 Debbie Kim Morikawa
- 82 Pat Nakamura
- 83 Libby Char
- 84 James Honke, Hans Krock, James Kumagai, and Victor Moreland
- 85 Ray Matasci
- 86 Guy Inouye
- 87 Tom Vendetta
- 88 Dwain Masek
- 89 Mary Pat Waterhouse
- 90 Lesleigh Coelho
- 91 Jeff Kalani
- 92 Curtis Nagata
- 93 James Kwong
- 94 Robert Rodman
- 95 Michelle Matson
- 96 Paul Oliveira
- 97 David Tanoue
- 98 E. Leong
- 99 Judy Wood
- 100 Nancy Nagamine
- 101 James Moncur
- 102 Eric Takamura
- 103 Maeda Timson
- 104 Kurt Fevella
- 105 Nestor Garcia
- 106 Lloyd Nekoba speaking for Congressman Neil Abercrombie
- 107 Mike Kitamura for Senator Akaka
- 108 Aaron Leong for Senator Inouye
- 109 Todd Apo
- 110 Rick Egged
- 111 Cameron Nekota
- 112 Tim Steinberger
- 113 Richard Brock
- 114 Sean Newcamp

115	Bob Rocheleau
116	Cliff Lum
117	Earl Ng
118	Ralph Goto
119	Bill Wanner
120	Kelly Krohne
121	Derek Mukai
122	Robin Matsunaga
123	Jon McKenna
124	Theresia McMurdo
125	Watson Okubo
126	Joanne Hiramatsu
127	Andy Jamila, Jr
128	Fred Madlener
129	Polly Grace
130	Bud Ebel
131	Keith Yoshida
132	Jon Nishimura
133	Gary Bautista
134	Walter Billingsley
135	Ken Windram
136	Nic Musico
137	Greg Arakaki
138	Roger Fujioka
139	James Honke
140	Lisa Enanoria
141	John Desoto
142	Gilbert Dano
143	Jeff Mikulina
144	David Kimo Frankel
145	Patty Kahanumoku Teruya
146	Henry Chang Wo
147	Jeff Coelho
148	Glenn Oamilda
149	Romeo Garcia
150	William Cooke
151	Mike Golojuch
152	Tyson Baisac
153	Georgette Stevens
154	Daniel Inouye
155	Charles Djou