BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)	
City & County of Honolulu Sand Island Wastewater Treatment Plant Honouliuli Wastewater Treatment Plant	)	NPDES Appeal No. 09-01
NPDES Permit Nos. HI0020117 & HI0020877	)	

RESPONSE TO PETITION FOR REVIEW

Counsel for Environmental Protection Agency, Region 9

Suzette E. Leith
Office of Regional Counsel
EPA- Region IX (ORC-2)
75 Hawthorne St.
San Francisco, CA 94105
Tel: (415) 972-3884
Fax: (415) 947-3570
Leith.Suzette@epa.gov

Of Counsel:
Stephen J. Sweeney
Office of General Counsel (2355A)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

TABLE OF CONTENTS

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As directed on March 31, 2009, Region 9 of the U.S. Environmental Protection Agency ("EPA" or the "Region") respectfully submits to the Environmental Appeals Board ("Board") this response to the petition for review filed by the City and County of Honolulu ("CCH" or "Petitioner") in the above-captioned matter.[1] The Petitioner seeks review of the Region's decisions[2] to deny CCH's requests for renewal of modifications of the secondary treatment requirements for publicly owned treatment works ("POTW") for its Sand Island and Honouliuli Wastewater Treatment Plants ("Sand Island" and "Honouliuli," respectively) pursuant to Section 301(h) of the Clean Water Act ("CWA"), 33 U.S.C. § 1311(h), and to issue National Pollutant Discharge Elimination System ("NPDES") permits that incorporate the modified limits.

Region 9 denied CCH's requests because CCH had not demonstrated the Honouliuli and Sand Island facilities' proposed discharges would comply with the statutory requirements set forth in CWA section 301(h) to meet water quality standards and ensure water quality protective

[1] On April 27, 2009, the Board extended EPA's deadline for filing this brief to May 29, 2009.

[2] The Board's March 31, 2009, Order also grants CCH's Motion to Consolidate its challenge of the Region's decisions regarding both Sand Island and Honouliuli into a single administrative appeal. When the bases for the Region's decisions, the comments raised, and/or the Region's responses to comments in the two matters differ, this response will identify such differences as they arise, either in text or by footnote.

of aquatic life and recreation. Petitioner's challenge misinterprets these provisions of the Act and EPA's regulations implementing them. As described in greater detail below, the Petitioner's request for review should be denied.[3]

STATEMENT OF THE CASE

I. Statutory and Regulatory Background

A. Modification of Secondary Treatment Requirements for POTWs Discharging to Ocean Waters

1. CWA Section 301(h)

Under the CWA, a NPDES permit is required for discharges of pollutants into the waters of the United States from point sources. Sections 301 and 402 of the CWA, 33 U.S.C.§1311, 1342. In Hawaii, the State of Hawaii administers the NPDES permit program. 48 Fed. Reg. 37701 (Aug. 19, 1983). Pursuant to section 301(b)(1)(B) of the CWA, 33 U.S.C. §1311(b)(1)(B), a POTW must achieve, among other things, effluent limitations based upon secondary treatment as defined by the EPA Administrator. The Administrator has defined effluent limits based on secondary treatment in terms of three pollutant parameters: biochemical oxygen demand measured over five days ("BOD_5 "), suspended solids[4] ("SS") and pH. These uniform national effluent limitations are included in permits for POTWs. 40 CFR 125.3(a)(1)(i); 40 CFR Part 133, esp. 133.102. The CWA generally required POTWs to have complied with these limitations by July l, 1977. 33 U.S.C. § 1311(b)(1)(B).

[3] As discussed herein, EPA cannot not grant a 301(h) variance unless all the criteria set forth in the Act are satisfied. Thus, in order to overturn the Region's decisions and/or remand to the Region, the Board must find for CCH on its challenges to every one of EPA's findings.

[4] Suspended Solids are also referred to as Total Suspended Solids ("TSS"), and BOD_5 as BOD.

In 1977, Congress amended the CWA to add a new section 301(h), with subsequent amendments in 1981 and 1987, to authorize the Administrator to issue NPDES permits that modify the secondary treatment requirements of the CWA for POTWs that discharge into marine waters. 33 U.S.C. § 1311(h). Pursuant to section 301(h), the Administrator,[5] with the concurrence of the State, may issue a NPDES permit that modifies secondary treatment limits for such a POTW if the applicant makes a satisfactory demonstration that it meets nine statutory criteria set forth in section 301(h). The nine criteria are designed to ensure that, even with less stringent effluent limits than the technology-based secondary treatment limits, water quality standards will be achieved and marine habitats and recreation will be fully protected under a modified permit.[6] Accordingly, the data required to be submitted in support of a 301(h) application and the associated EPA evaluation are more extensive and comprehensive than are otherwise necessary for submission and evaluation in a permit application not accompanied by a 301(h) modified permit request. The EPA promulgated regulations implementing these statutory criteria are set forth at 40 CFR Part l25, Subpart G.[7]

Of the nine statutory criteria, three are relevant to the CCH petition. These criteria require an applicant to demonstrate to the satisfaction of the Administrator that –

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[5] The authority to make the decision to grant or deny a section 301(h) modification and to issue such a NPDES permit has been delegated to the Regional Administrator. EPA Delegation 2-44.

[6] The decisions at issue in this proceeding denied CCH's requests for modified limits. This is also referred to as a decision to deny a "301(h) variance" or to deny a "301(h) waiver." These terms are used interchangeably. The associated permit is sometimes referred to as a "modified permit" or "301(h) modified permit."

[7] The regulations implementing section 301(h) were originally promulgated on June 15, 1979 (44 FR34784). The regulations were challenged in the D.C. Circuit, which struck down some of the provisions. *NRDC v. EPA*, 656 F.2d 768 (D.C. Cir. 1981). After passage of the 1981 amendments, which amended section 301(h), EPA proposed revisions to the regulations on June 8, 1982 (47 Fed.Reg. 24918) and promulgated the revisions on November 26, 1982 (47 Fed. Reg. 53666). Congress amended the CWA again in 1987, and amended section 301(h). Pub. L. No. 100-4, § 303, 101 Stat.33 (1987). EPA again proposed revised regulations on January 24, 1991 (54 Fed.Reg. 2841) and published final regulations on August 9, 1994 (59 Fed. Reg. 40642).

> (2) the discharge of pollutants in accordance with such modified requirements 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 ("BIP"), and allows recreational activities, in and on the water; [and]
>
> (9) the applicant at the time such modification becomes effective will be discharging effluent which has received at least primary or equivalent treatment and which meets the criteria established under [CWA] section 304(a)(1) [] after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged.[8]

33 U.S.C. § 1311(h)(1), (2) & (9).

2. Regulations Implementing Section 301(h)

The Petition in this matter involves interpretation of the regulations relating to the Region's decisions under section 301(h) to deny the applications for renewal of the 301(h) modified permits for the Honouliuli and Sand Island facilities. The primary bases for the Region's decision-making challenged by the Petition involve interpretation and application of the regulation that implements sections 301(h)(2) & (9), which is published at 40 CFR 125.62 and captioned "Attainment or maintenance of water quality which assures protection of public water supplies; assures the protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife; and allows recreational activities." Among other things, that regulation requires that the discharge not exceed applicable water quality standards "at and beyond the zone of initial dilution." 40 CFR 125.62(a)(1). The regulations define "zone of initial dilution" ("ZID") to mean "the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards." 40 CFR 125.58(dd).

[8] EPA interprets the statutory reference to "criteria" in this section to include the criteria component of State water quality standards, as discussed in section VI below. See 40 CFR 125.62(a)(1).

The current 40 CFR 125.62(a)(1) also includes changes promulgated by EPA in 1994 to implement Congress's 1987 amendments to the CWA. 59 Fed. Reg. 40658 (Aug. 9, 1994). The 1987 amendments modified section 301(h)(9) by establishing a requirement that a section 301(h) modified discharge "meets the criteria established under [CWA section 304(a)(1)] after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged." Pub. L. No. 100-4, § 303(d), 101 Stat. 33 (1987). The regulations implementing this change to section 301(h)(9) in 40 CFR 125.62(a) require that the discharger not exceed (i) all applicable water quality standards and all applicable EPA recommended water quality criteria (published under CWA section 304(a)(1)) for pollutants for which there are no applicable EPA-approved water quality standards that directly correspond to the EPA recommended water quality criteria for that pollutant. 40 CFR 125.62(a)(1). The preamble to the 1994 regulations explained the inclusion of an existing requirement from 1982 regulations, specifically, that all applicable State water quality standards adopted under CWA section 303 be met at and beyond the boundary of the ZID, and that the Agency promulgated the requirement as part of its implementation of the new section 301(h)(9) requirement. 59 Fed. Reg. at 40651.[9]

In addition to section 301(h)(9), this regulation also implements the statutory requirements of section 301(h)(2). 40 CFR 125.62(c). The section 301(h) applicant's modified discharge must allow for the attainment or maintenance of water quality that assures protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife ("BIP"). Id. The reference to "attainment or maintenance of water quality which" refers to, among other things, water quality standards that are protective of the relevant designated use. In development of these regulations as they existed prior to the 1987 amendments, EPA explained in the

[9] This is discussed more in section VI below.

proposed rule preamble that "the actual and potential impact of the discharge on the biota should be evaluated on the basis of a chemical assessment of effluent and water quality, and a physical assessment and biological assessment of the impact of the discharge on marine life and ecosystems." 43 Fed. Reg. 17484, 17488 (April 25, 1978)(emphasis added). The resulting final regulation required that the proposed 301(h) modified discharge meet aquatic life water quality standards as a component of the analysis to determine whether it would attain or maintain water quality to assure the protection and propagation of a balanced indigenous biological population. 44 Fed. Reg. 34784, 34819 (June 15, 1979).

This regulation also implements the portion of section 301(h)(2) that requires attainment or maintenance of water quality to allow recreational activities in and on the water. 40 CFR 125.62(d). Like the BIP regulation's reference to "water quality which," subsection (d) requires that a section 301(h) applicant's modified discharge must allow for the attainment or maintenance of water quality which allows for recreational activities beyond the zone of initial dilution, including, without limitation, swimming, diving, boating, fishing, and picnicking, and sports activities along shorelines and beaches. Id. Like the BIP regulation, in the 1979 final regulation requiring attainment of water quality to allow for recreation, EPA explained that the discharge would need to "permit the attainment or maintenance of water quality which would allow recreational activities, and comply with State water quality standards designed to protect recreational water uses." 44 Fed. Reg. 34784, 34805 (June 15, 1979), see also 44 Fed. Reg. at 34819.

EPA's 301(h) regulations also include requirements for submitting data to EPA to support a 301(h) request. As noted above, the data required to support a request for a modified permit under section 301(h) are more extensive and comprehensive than otherwise would be

necessary for a permit application that is not accompanied by a 301(h) modified permit request. Implementing regulations establish procedures, deadlines, and standards applicable to revisions of applications, as well as requirements for submission of additional information. 40 CFR 125.59(d), (f), and (g).[10] See generally *In Re Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97 (EAB 2005). If an application is based on an altered or improved discharge, the applicant must demonstrate that such improvements or alterations have been thoroughly planned and studied and can be completed or implemented expeditiously, and include detailed analyses projecting changes in average and maximum monthly flow rates and composition of the applicant's discharge that are expected to result from the proposed alterations and improvements. 40 CFR 125.62(e).

B. Water Quality Standards

1. CWA sections 303 and 304

CWA section 303 requires that each state adopt "water quality standards" for all waters of the state and to review and, if appropriate, revise them every three years. 33 U.S.C. § 1313(a), (b) and (c)(1); 40 CFR Part 131. A water quality standard is a method of expressing the desired condition of a water body and consists of three main elements: (1) one or more designated "uses" of each of the State's waters, such as recreation or propagation of fish; (2) "criteria" expressed as pollutant concentration levels or narrative statements representing a quality of water

[10] Subsection (g) addresses information requested or developed after the receipt of the application or a revised application. 40 CFR 125.59(g). Subsection (g)(1) allows the Region to "authorize or request an applicant to submit additional information by a specified date not to exceed one year from the date of authorization or request." 40 CFR 125.59(g)(1). Subsection (g)(2) allows applicants to seek such authorization from the Region to submit additional information on current/modified discharge characteristics, water quality, biological conditions or oceanographic characteristics, though applicants seeking to submit such additional information must demonstrate inability to have done so previously and a plan of study for review by EPA. 40 CFR 125.59(g)(2). An application may be revised when additional information submitted under subsection (g) supports changes to proposed treatment levels, but such an application must be submitted concurrently with any additional information submitted pursuant to subsection (g). 40 CFR 125.59(d)(3) & (f)(2)(ii).

that supports a designated use; and (3) an anti-degradation policy to protect existing uses and high quality waters. See generally 33 U.S.C. § 1313(c)(2)(A); 40 CFR Part 131.

When a state develops new standards or revises existing ones it must submit the standards to EPA for review and approval or disapproval. 33 U.S.C. § 1313(c). EPA regulations provide that states should establish: (1) numerical criteria based on (i) EPA's criteria guidance developed under CWA section 304(a), (ii) EPA's criteria guidance modified to reflect site-specific conditions, or (iii) other scientifically defensible methods; and (2) narrative criteria or criteria based on biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria. 40 CFR § 131.11(b)

CWA section 304(a)(1) directs EPA to publish water quality criteria "reflecting the latest scientific knowledge" on the effects of the presence of pollutants in water on health and welfare. 33 U.S.C. § 1314(a)(1). The criteria guidance documents that EPA publishes under section 304(a), including section 304(a)(9)(A), are intended to provide EPA's technical and scientific recommendations for establishing the criteria components of state water quality standards, but EPA's criteria are recommendations and not binding on states. EPA will approve different criteria adopted by a state as long as the state criteria are scientifically defensible and protective of the designated uses of the state's waters.[11] 40 CFR 131.5(b), 131.11.

Under EPA's regulations, states may at their discretion include within their water quality standards "policies generally affecting their application and implementation, such as mixing zones …." 40 CFR 131.13. When states include such general policies as part of their standards, the policies are subject to EPA review and approval. Id. A "mixing zone" is an area of water

[11] The term "criteria" thus refers to two distinct things: (1) EPA's non-binding technical and scientific recommendations to states; and (2) the criteria components of water quality "standards," which are used for regulatory purposes such as issuing discharge permits and identifying impaired waters.

that receives effluent discharges where water quality criteria can be exceeded if the designated use of the water segment as a whole is not impaired as a result of the mixing.[12] *In re: Government of the District of Columbia Municipal Separate Storm Sewer System*, 10 E.A.D. 323, 338 n16 (EAB 2002).

2. Water Quality Standards Applicable to CCH's Discharges

a. Coastal Recreation Water Quality Criteria for Bacteria

On October 10, 2000, Congress enacted the Beaches Environmental Assessment and Coastal Health ("BEACH") Act, which amended the CWA by, among other things, adding section 303(i)(1)(A), which required that, by not later than April 10, 2004, each State having "coastal recreation waters" adopt new or revised water quality standards for all pathogens and "pathogen indicators" for which EPA had published recommended water quality criteria under section 304(a)(1). 33 U.S.C. § 1313(i)(1)(A). The term "coastal recreation waters" is defined in the BEACH Act to include marine coastal waters that are designated under CWA section 303(c) for swimming, bathing, surfing, or similar water contact activities. 33 U.S.C. § 1362(21). If EPA determined that a state's water quality standards were not as protective as the criteria published by EPA under CWA section 304(a)(1), EPA was required to promulgate such standards for the coastal recreation waters of the state. 33 U.S.C. §§ 1313(i)(2)(A).

While the BEACH Act does not include a definition of "pathogen," the term "pathogen indicator" is defined as "a substance that indicates the potential for human infectious disease." Id. § 1362(23). The standards promulgated under the BEACH Act are routinely referred to as standards for "bacteria," although they are actually written in terms of the pathogen indicator

[12] All of the petitions adjudicated by the Board regarding mixing zones have involve application and interpretation of state mixing zone provisions. *See e.g. In re Town of Situate Wastewater Treatment Plant*, 12 E.A.D. 708, 715 n3 (EAB 2006) (citations omitted). In the current petition, CCH presents arguments related to Hawaii's mixing zone provision, but also, as noted above, this matter involves interpretation of a federal regulation defining "zone of initial dilution."

enterococcus. In this brief, they are generally referred to as "bacteria standards" for convenience.

Federal water quality standards for bacteria are applicable to the receiving waters for the proposed 301(h) modified discharges in this matter. 40 CFR 132.41(e)(2). Based on a finding that Hawaii lacked numeric criteria protecting State waters beyond 300 meters (1000 feet) from shore,[13] even though such waters are designated for recreation in Hawaii water quality standards (see 69 Fed. Reg. 67218, 67234 (Nov. 16, 2004)), EPA promulgated numeric criteria for bacteria in those waters.[14] The marine coastal recreation waters of Hawaii (except for coastal recreation waters within 300 meters of the shoreline) are subject to water quality standards for Enterococci, an microbial indicator of human pathogens, with a geometric mean of 35 colony forming units (cfu) per 100 milliliters of test sample. 40 CFR 132.41(c)(2).

b. Hawaii Water Quality Standards for Pesticides and Ammonia Nitrogen

The remaining water quality standards relevant to this matter are the water quality standards established by Hawaii and approved by EPA as protective of the designated uses established by the State for the relevant receiving waters. The Hawaii water quality standards that the Region determined the CCH discharges would not meet are standards for the pesticides chlordane and dieldrin, and standards for ammonia and toxicity.

Hawaii established water quality standards for chlordane to protect persons consuming fish caught in Hawaii's waters from carcinogenic effects through fish consumption. HAR 11-54-4(b)(3), Doc. S.19.1, p. S-19-15.[15] The existing EPA-approved Hawaii water quality standards

[13] The actual wording in the Hawaii standards is "300 meters (one thousand feet). [p. S-19-47]

[14] The federal water quality standards are based on water quality criteria that EPA recommended under CWA section 304(a) in 1986. 69 Fed. Reg. 67218 (Nov. 16, 2004).

[15] The administrative record citations refer to document numbers and pages on the AR indexes and CD attached to this brief. This is explained in more detail in footnote 20 below.

for chlordane include a numeric criterion of 0.000016 micrograms/liter in marine waters for protection of human health . Id. As with chlordane, the State adopted water quality standards for dieldrin in order to protect human health from exposure to pollutants through fish consumption. Id. The numeric criterion for marine waters to protect human health for the EPA-approved Hawaii water quality standards for dieldrin is 0.000025 micrograms/liter. Id. As relevant to this matter, EPA has promulgated federal regulations establishing standardized analytical test procedures to measure, among other things, dieldrin. 40 CFR 136.3(a). The approved test procedures to measure for dieldrin are listed in Table ID of that regulation. The approved methods are EPA Methods 608 and 625. Id.

Hawaii also has established water quality criteria for ammonia nitrogen, NH_4- N, to protect against excessive nutrient enrichment, which can lead to eutrophication and oxygen depletion, which in turn can deplete oxygen concentration in the water body so severely that other aquatic life cannot be maintained. Doc. H.1.2, p. H-01-78. The criteria that apply when open coastal waters receive more than 3 million gallons per day of freshwater discharge per shoreline mile ("wet criteria") include a geometric mean not to exceed 3.50 ug/L. Doc. H.1.2, p. H-01-78, see also HAR at Doc. S.19.1, p. S-19-31.

c. Hawaii Water Quality Standards for Toxicity

i. Hawaii's Standards for Toxicity

Hawaii's narrative water quality criteria require that all waters be free from toxic substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water. HAR 11-54-4(a)(4), Doc. S.19.1, p. S-19-13. Hawaii's water quality standards also include a specific requirement for submerged outfalls, such as those at the Honouliuli and Sand Island facilities.

For continuous discharges through submerged outfalls, Hawaii standards require that the no observed effect concentration ("NOEC"), expressed as a percent of effluent concentration, not be less than 100 divided by the minimum dilution. HAR 11-54-4(b)(4)(A), Doc. S.19.1, p. S-19-18. As explained more fully below, this means that there must be no observable adverse effects, statistically compared to a control, shown in testing of the effluent when the effluent is diluted to the "minimum initial dilution."[16] Hawaii standards define "chronic toxicity" e.g., impairments to fertilization, to mean "the degree to which a pollutant, discharge, or water sample causes a long-term adverse impact on aquatic organisms, such as a reduction in growth or reproduction." HAR 11-54-4(b)(1)(B), Doc. S.19.1, p. S-19-13. The definition continues: "[t]he chronic toxicity of a discharge or receiving water is measured using methods specified in section 11-54-10 [which incorporates EPA test method manuals by reference], unless other methods are specified by the director." Id. "All state waters shall also be free from chronic toxicity as measured using … methods specified by the director." HAR 11-54-4(b)(2)(B), Doc. S.19.1, p. S-19-14.

ii. Whole Effluent Toxicity Testing Procedures

One of the issues raised in the petition relates to "whole effluent toxicity" ("WET") testing and the use of results gathered using those tests for the purposes of the analysis required under CWA section 301(h) of whether CCH's discharges meet Hawaii's water quality standards for toxicity.

As background, extensive effluent toxicity screening programs were conducted during the 1970s by the EPA regional and state programs and permittees. 60 Fed. Reg. 53529, 53531

[16] Minimum initial dilution is the term used in Hawaii water quality standards, and is explained in HDOH's toxics control implementation guidance. Doc. H.19.3, p. H-19-81. In CWA section 301(h) parlance, the term "critical initial dilution" is the corresponding term used to evaluate the dilution under conditions when dilution conditions are the least ideal from an environmental standpoint. See, e.g., Doc H.1.2, p. H-01-24. The end point is the same.

(Oct. 16, 1995). During this period, short-term inexpensive methods were not available to detect the more subtle, low-level, long-term (chronic) adverse effects (such as reduction in growth and reproduction) of effluents on aquatic organisms. Id. at 53532. Rapid developments in toxicity test methods since 1980, however, have resulted in the availability of several methods that permit detection of chronic toxicity of effluents to freshwater and marine organisms in nine days or less. Id.

EPA first promulgated standardized WET test procedures for nationwide use in 1995. Subsequently, EPA conducted multi-laboratory studies of some of the WET tests[17] to demonstrate the Agency's earlier assertions that levels of test precision achieved within laboratories had a strong correlation to levels of test precision between laboratories. 60 Fed. Reg. at 53535. For each method for which an inter-laboratory study had been conducted, pre-existing single laboratory data demonstrated similar, satisfactory precision. Further, specified quality assurance and quality control procedures in each test method protocol minimize any variability due to analyst error or stress in test cultures due to factors other than effluent toxicity. Finally, toxicity test methods specify a procedure for a series of initial repetitive tests to ensure that laboratory results during any particular analysis establish a pattern of satisfactory performance and define that laboratory's precision. Id.

In a subsequent judicial challenge, the U.S. Court of Appeals for the D.C. Circuit upheld

[17] EPA conducted the studies, and took other actions, pursuant to a settlement agreement, prior to undertaking further rulemaking that ratified its earlier action on the WET tests, except for two of the tests for which the Agency was unable to obtain sufficient laboratory participation within the timeframe for a multi-laboratory study. 67 FR 69952, 69955 (Nov. 19, 2002). EPA explained that it was unnecessary to approve the two methods using of the two test species (for which an insufficient number of participating laboratories could be found) for nationwide use because very few permits actually required use of either test species. 67 Fed. Reg. at 69961. The Agency further explained that its decision not to occupy the category of Pacific Ocean and West Coast marine test protocols with nationally approved species would avoid the displacement of WET test protocols that had been developed for use in those waters, and identified the regulations that supported inclusion of requirements for the use of test procedures that are not approved at part 136, such as West Coast WET methods, on a permit-by-permit basis. 67 Fed. Reg. at 69962.

EPA's promulgation of regulations establishing standardized WET tests against a series of challenges to the scientific validity of the procedures, including the "representativeness," i.e., the ability of test results to predict in-stream effects accurately. *Edison Electric Inst., et al. v. EPA*, 391 F.3d 1267, 1273 (D.C. Cir. 2004). Noting the results of numerous studies on this subject conducted throughout the 1990s that support the representativeness of the WET test methods in general, the Court reasoned that it would be unrealistic to require correlation studies on a comprehensive basis. Id. The Court found that EPA sensibly relied on sampling techniques to draw general conclusions about the representativeness of such standardized procedures to predict in-stream results. Id.

Of special relevance to this matter is an analytical procedure that the Hawaii Department of Health and EPA use to measure the toxicity of aqueous test samples using a marine invertebrate, the Pacific sea urchin, *Tripneustes gratilla*. Though the *T. gratilla* fertilization test is not among those EPA standardized in the national rulemaking, the test method protocol is modeled after one of the nationally approved tests, the sea urchin test using *Arbacia punctulata* (a sea urchin native to the Western Atlantic), 40 CFR 136.3, Table 1A, parameter 13, EPA Method 1008.0, and the sea urchin test using *Strongylocentrotus purpuratus* (a sea urchin native to the Western coast of the continental United States). Doc. H.16.1. The *T. gratilla* fertilization test was developed over time by EPA and research aquatic toxicologists who had developed other sea urchin methods. Doc.H.16.1, p. H-16-2. The test measures toxicity of samples to the fertilizing capacity of the *T. gratilla* sperm. As described in the standard operating procedures used by CCH, the collected sperm cells are exposed to test solutions containing different concentrations of effluent for 60 minutes prior to the addition of eggs to those test solutions in order to determine the percent fertilization of effluent-exposed gametes relative to the percent

fertilization of the controls. Doc.S.6.3 (also Doc.H.6.3),[18] p. S-06-389 (Section 2.0 of the test protocol). Reduced fertilization success as indicated by the absence of the fertilization membrane is used as an indicator of toxic effects on sperm viability and/or the fertilization response. Id.

Prior to running the test, urchins are collected from the wild, and then in a laboratory, spawning is induced, and eggs and sperm are collected for use in the test. Id., p. S-06-391 (Section 7.2.1 of the test protocol). Next, the analyst conducts "range finding" tests to determine the sperm-to-egg ratio that achieves approximately 90% fertilization. Id., p. S-06-392 (Section 7.3 and 7.3.5 of the test protocol). Then, for each test concentration and control (i.e., a test chamber that is not exposed to the effluent), six test chambers, also called "replicates," are prepared. Id., S-06-391 (Section 7.1.3 of the test protocol). The test chambers, typically test tubes, are randomized and the position of each tube is recorded. Id. (Section 7.1.4 of the test protocol). The appropriate volume of sperm is added to the randomized tubes containing the effluent dilutions and the control, and the sperm is incubated for 60 minutes at an ambient laboratory temperature (23 degrees Celsius, plus or minus one degree). Id., p. S-06-393 (Section 7.4.3 of the test protocol). Next a specified quantity of the egg solution is added to the test chambers and 20 minutes is allowed for fertilization. Id. (Section 7.4.5 of the test protocol). To each tube, a small quantity of glutaraldehyde is added, Id. (Section 7.4.6 of the test protocol), in order to arrest fertilization and preserve samples for microscopic investigation. The percent fertilization is determined within the next 24 hours by microscopic examination of 100 eggs in an aliquot of eggs from each treatment. Id. (Section 7.4.7 of the test protocol). Subsequently, the analyst conducts quality control review of the data. The data is evaluated to determine

[18] Doc.S.6.3 and Doc.H.6.3 are the same document. For the purposes of this discussion, citations are provided only to the document in the administrative record compiled for the Sand Island decision.

whether the control gametes achieved a minimum rate of fertilization, though that value should not approach 100% to make sure that there was not over-sperming. Id. (Section 7.5.3 of the test protocol). The variation of test results of replicates (i.e., within each test concentration and the controls) must be less than or equal to a fixed amount. Id. (Section 7.5.6 of the test protocol). An additional data analysis may be conducted, called the "percent minimum significant difference" to determine whether the variation among replicates is very high or very low, i.e., the results are very precise or imprecise. Id. (Section 7.5.7 of the test protocol). Test results outside the ranges of 13% on the high end and 3% on the low end are re-calculated. Id.

iii. Determining Compliance with Hawaii's Standards for Toxicity

As explained above, Hawaii's water quality standard for toxicity that is applicable specifically to submerged outfalls is expressed in terms of the no observed effect concentration (NOEC). The NOEC, a commonly used endpoint for chronic toxicity tests, is the highest concentration of toxicant, in terms of percent effluent, to which the test organisms are exposed that causes no observable adverse effect. Doc. H.2.4, p. H-02-1831; Doc. S.2.6, p. S-02-4132. Hawaii's standard for submerged outfalls requires that the NOEC (expressed as percent effluent) must be not less than 100 (i.e., in order to convert the percentage value into a decimal number) divided by the minimum initial dilution. HAR 11-54-4(b)(4)(A), Doc. S.19.1, p. S-19-18. To determine the NOEC for a particular sample of effluent, a range of dilutions are used. For example, the test could be run using the following five dilutions: 1% effluent and 99% dilution water; 5% effluent and 95% dilution water; 10% effluent and 90% dilution water; 25% effluent and 75% dilution water; and 50% effluent and 50% dilution water. If the concentrations with 1% effluent, 5% effluent, and 10% effluent did not show adverse toxic effects, but the concentrations with 25% effluent and 50% effluent did show adverse toxic effects, then the NOEC would be

10% effluent. Thus, an effluent with a NOEC of 10% effluent is more toxic than an effluent with a NOEC of 50% effluent.

EPA also uses the Toxic Unit chronic (TUc) to express toxicity values. When toxicity is expressed in terms of the NOEC, the greater the value of the NOEC, the lower the amount of toxicity. This type of inverse relationship can be confusing, so EPA often expresses toxicity using the TUc. The TUc is 100 (i.e., in order to convert percentage value into to a decimal number) divided by the NOEC (expressed as percent effluent). Thus, as TUc increases, toxicity increases. Doc. H.2.4, p. H-02-1833; Doc. S.2.6, p. S-02-4133. That direct relationship is more easily understood.

Threshold values for toxicity to implement Hawaii's standard can be calculated using the appropriate minimum dilution. For Sand Island, the minimum dilution is 103:1 and, thus, the NOEC must be equal to or greater than 0.971% effluent or, equivalently, the toxicity must be less than or equal to 103 TUc. For Honouliuli, the minimum dilution is 118:1 and, thus, the NOEC must be equal to or greater than 0.847% effluent or, equivalently, the toxicity must be less than or equal to 118 TUc.

II. Factual and Procedural Background

A. Factual Background

CCH operates several municipal wastewater treatment facilities, two of which – the Honouliuli and Sand Island facilities -- are currently discharging at less than secondary-treatment levels pursuant to 301(h) modified NPDES permits. In the two actions challenged by CCH, EPA Region 9 denied CCH's requests for renewal of the 301(h) variances and modified permits for the Honouliuli and Sand Island facilities. The two decisions were signed by the Region 9 Regional Administrator on January 5, 2009, and issued the following day, January 6. AR Doc. H.1.2 and S.1.2.

1. Honouliuli Wastewater Treatment Plant

CCH filed its original application for a 301(h) modified permit for the Honouliuli facility on September 7, 1979. In September 1981, Region 9 issued a tentative decision proposing to grant the requested variance from secondary treatment requirements for BOD, but not for TSS. This decision prompted CCH to submit a revised application on October 31, 1983, requesting reconsideration of the tentative denial regarding TSS based on providing improved primary treatment.[19] Based on the revised application, the Region issued a tentative decision on April 4, 1988, recommending that the 301(h) variance be granted and a modified permit issued. The resulting 301(h) modified permit was issued by Region 9 on May 3, 1991, became fully effective on December 16, 1993, and expired on June 5, 1996. The terms of this permit have been administratively extended since the expiration date. Doc. H.1.2, p. H-01-11 and 12.

CCH submitted an application to renew the variance and the 301(h) modified permit on December 1, 1995, updated the application in January 2000 and August 2004, and subsequently submitted additional information in response to requests from the Region. Doc. H.1.2, p. H-01-12.

On March 27, 2007, Region 9's Regional Administrator signed a tentative decision that the application for the renewed variance and modified permit be denied. Doc. H.1.7. Region 9 held a public hearing in Honolulu on the tentative decision on May 15, 2007, and accepted public comments through August 27, 2007, having granted CCH's request for an extension of the original public comment period. On January 5, 2009, the Region 9 Regional Administrator signed, and on January 6 the Region issued the final decision denying the variance and modified

[19] EPA regulations at 40 CFR 125.59(d)(1) allow dischargers to amend their applications once following a tentative denial to proposed changes to treatment processes. This applies only to first-time applicants, not applicants for renewals. 40 CFR 125.59(d)(5).

permit request, along with two documents responding to the comments submitted during the public comment period (one document responding to comments submitted by CCH, the other to comments submitted by all other commenters). Doc. H.1.2 (final decision document or "FDD"), H.1.5 and H.1.6 (responses to comments).

2. Sand Island Wastewater Treatment Plant

CCH submitted its original request for a 301(h) modified permit for Sand Island on September 7, 1979, and submitted a revised application on October 31, 1983. The Region issued a tentative decision to grant the variance in June 1985, and issued a draft modified permit in September 1987. A final modified permit was issued in January 1990. CCH applied for renewal of the variance and modified permit on August 18, 1994. The Region granted the renewed application, and on September 30, 1998, issued a renewed modified permit, which became effective on November 2, 1998, expired on November 3, 2003, and the terms of this permit have been administratively extended since the expiration date. Doc. S.1.2, p. S-01-14. On May 5, 2003, CCH submitted an application to again renew the 301(h) variance and modified permit for the Sand Island facility. Doc. S.1.2, p. S-01-12.

On December 7, 2007, Region 9's Regional Administrator signed a tentative decision that the renewal application be denied. Doc. S.1.7. The Region held a public hearing on the tentative decision on March 12, 2008 and accepted public comment through March 31, 2008, having partially granted CCH's request for an extension of the original comment period. On January 5, 2009, the Regional Administrator signed, and on January 6 the Region issued the final decision denying the variance and modified permit request, along with two documents responding to the comments submitted during the public comment period (one document responding to comments submitted by CCH, the other to comments submitted by all other commenters). Doc. S.1.2

(FDD), S.1.5 and S.1.6 (responses to comments).

3. Bases for Region 9's Decisions Not to Re-Issue Modified Permits

The Region found that the Honouliuli and Sand Island facilities were unable to satisfy all the requirements in CWA section 301(h). Specifically, neither discharge could meet applicable water quality standards for whole effluent toxicity, chlordane, dieldrin, and ammonia after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged. Additionally, the Honouliuli discharge could not meet water quality standards for bacteria. The Region also found that CCH had not demonstrated that the discharges would not interfere with attainment or maintenance of water quality that assures the protection and propagation of a balanced, indigenous population of fish, shellfish and wildlife ("BIP"), and of water quality which allows recreation.

B. Procedural Background

On January 23, 2009, CCH filed a motion seeking relief from the regulatory deadline for filing petitions for review, as well as to consolidate its petitions on the two decisions. On February 2, 2009, the Board granted CCH an extension whereby CCH would file summary petitions by February 9, 2009, in which it would identify all the issues it wished to raise on appeal and file supplemental briefing by March 11, 2009. CCH timely filed a summary petition and supplemental briefing. By order dated March 31, 2009, the Board granted the request to consolidate the challenges into a single permit appeal and directed the Region to file a response to the consolidated petition by April 30, 2009.

On April 23, 2009, the Region and CCH filed a joint motion for, among other things, additional time for Region 9 to file a response to the petition for review. On April 27, 2009, the Board granted this portion of the joint motion and directed the Region to file its response on or

before May 29, 2009. The joint motion also sought a stay of the proceedings until October 15, 2009, and CCH requested the opportunity to file by that date a reply to the Region's response and/or a motion to file supplemental briefing. The Board held those requests in abeyance pending a status conference of the parties on June 9, 2009.

Although the Board did not direct Region 9 to file an index to the administrative record or copies of pertinent documents in conjunction with its response brief, the Region understands that the filing of an index is consistent with the Board's general practice, and has attached to this response brief the Declaration of Sara Roser certifying the indexes to the administrative records for the Honouliuli and Sand Island decisions, along with the indexes for the two records. Although the petitions for review have been consolidated, the administrative records and indexes were developed separately. Documents in the Honouliuli record are prefixed with the letter "H," while documents in the Sand Island record are prefixed with the letter "S." The Region is also submitting individual copies of the key documents related to this petition: the final and tentative decisions for each treatment plant, all four response-to-comments documents, and Hawaii's water quality standards. Additionally, the Region is submitting copies of CDs containing PDF copies of all the documents in the administrative records.[20]

[20] The Board's general practice is to ask a Region to identify and submit copies of documents "pertinent to the issues raised in the petition" (EAB Practice Manual p. 36). Because of the volume of records in this case, Region 9 is submitting separate copies of the key documents, as described in the text, and submitting all other documents in the records on the CD. Six copies of the CD are being sent to the Board and one to counsel for Petitioner. The CDs are generally organized by topic corresponding to the issues analyzed in the final decisions so that, for example, documents related to whole effluent toxicity can generally found in the sections labeled "whole effluent toxicity." Each document has a number corresponding to the appropriate section (e.g. Doc. H.2.3), and pages are numbered within each section. Document numbers and page numbers are provided in this brief for the documents that are cited. Each document is included on the CD as a separate PDF document, and can be easily accessed by clicking on the number on the CD. Because draft indexes were originally developed for the tentative decisions (and copied by CCH at that time), the Region organized the documents with final-decision documents first, followed by documents used in the tentative decision. As a result, there are two sections pertinent to many issues (e.g., for whole effluent toxicity in the Honouliuli decision, sections H.6 and H.16).

STANDARD OF REVIEW AND THRESHOLD REQUIREMENTS

I. Standard of Review

A. The Board's Permit Review Power is Exercised "Sparingly."

Section 301(h) itself squarely puts the burden on an applicant to "demonstrate to the satisfaction of the Administrator" that the statutory requirements for allowing a 301(h) variance are satisfied.

In all appeals of NPDES permit decisions, moreover, EPA's rules require a petition for review to demonstrate that the permit condition (or, in this case, a finding in the Region's 301(h) denial decision) for which review is sought is based on either: (1) a clear error of law or fact, or (2) an exercise of discretion or an important policy matter that the Board should, in its discretion, review. *See* 40 C.F.R. § 124.19(a)(1) & (2); *see also In re Dominion Energy Brayton Point,* 12 EAD 490, 509 (2006). A petitioner bears the burden of establishing that review is appropriate. 40 CFR 124.19(a); *see Rohm & Hass*, 9 E.A.D. 499, 504 (EAB 2000). A petitioner must argue with specificity why the Board should grant review. *In re Puerto Rico Electric Power Authority*, 6 E.A.D. 253, 255 (EAB 1995). To meet the threshold of specificity required under 40 CFR 124.19(a), a petitioner must take two necessary steps: (1) state the objections to the permit decision that are being raised for review, and (2) explain why the Region's previous response to those objections is clearly erroneous or otherwise warrants review. *See Michigan Dep't of Envtl. Quality v. EPA*, 318 F. 3d 705, 708-09 (6th Cir. 2003) (citing *In re Puerto Rico Elec. Power Auth.*, 6 E.A.D. at 255). Thus, the mere repetition of objections made during the comment period or the "mere allegation of error" without specific supporting information is insufficient to warrant review. *In re Phelps Dodge Corp.*, 10 E.A.D. 460, 496, 520 (EAB 2002); *In re Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 5 (EAB 2000).

It is longstanding EPA policy that the Board's permit review power should be exercised "sparingly," and that most permit conditions should be finally determined at the Regional level. *See* 45 Fed. Reg. 33412 (May 19, 1980); *In re Rohm & Haas Co.,* 9 E.A.D. 499, 504 (EAB 2000). The Board generally defers to the permit issuer's judgment absent evidence of a clear error of fact or law. *See In re Inter-Power of New York,* 5 E.A.D. 130, 144 (EAB 1994) (construing 40 C.F.R. 124.19(a) in a PSD appeal). Thus, in order to obtain review, a petitioner must overcome a heavy burden. Id.

B. A Petitioner's Burden is Particularly Heavy When Challenging Decisions that are Fundamentally Technical in Nature.

When a petitioner seeks review of a permit decision based on issues that are fundamentally technical in nature, the Board assigns a particularly heavy burden to the petitioner. *In re Dominion Energy Brayton* Point, 12 E.A.D. 490, 510 (EAB 2006). Additionally, clear error or reviewable exercise of discretion is not established simply because petitioner presents a difference of opinion or alternative theory regarding a technical matter. *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001). Instead, when a petitioner challenges the Region's technical judgment, "[p]etitioners must provide compelling arguments as to why the Region's technical judgments or its previous explanations of those judgments are clearly erroneous or worthy of discretionary review." *Id.* at 668 (citing *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 404 (EAB 1997)). Moreover, where the science in an area is uncertain, a contrary opinion urged by a petitioner will neither establish that a rational, adequately explained judgment by the Region is clearly in error nor overcome the Board's traditional deference to regional technical determinations. *In re Dominion Energy Brayton Point, L.L.C.*, 12 E.A.D. 490, 511 (EAB 2006). This particularly heavy burden advances the policy imperative of "ensur[ing] that the locus of responsibility for important technical

decisionmaking rests primarily with the permitting authority, which has the relevant specialized expertise and experience." *See In re Peabody W. Coal Co.*, 12 E.A.D. 22, 34 (EAB 2005), citing *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), rev. denied sub nom. *Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). ("[W]here a permit decision pivots on the resolution of a genuine technical dispute or disagreement, the Board prefers not to substitute its judgment for the judgment of the decisionmaker specifically tasked with making such determinations in the first instance.") In such cases, deference to the Region's decision is generally appropriate if "the record demonstrates that the Region duly considered the issues raised in the comments and if the approach ultimately selected by the Region is rational in light of all the information in the record." *NE Hub*, 7 E.A.D. at 567-68. If conflicting views of the Region and a petitioner indicate "bona fide differences of expert opinion or judgment on a technical issue, the Board typically will defer to the Region." *Id.* at 567-68.

II. Threshold Requirements

The EPA's rules controlling the appeal of a NPDES permit decision require a petition for review to demonstrate that any issues raised in the petition had been raised in comment during the public comment period on the permit decision. 40 C.F.R. 124.19(a). The EAB has emphasized that comments need to be raised during the public comment period to give the Region an opportunity to address potential problems before the permit becomes final, thereby promoting the Agency's longstanding policy that most permit issues should be resolved at the regional level. *Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97, 116-7 (EAB 2005). Comments must be made with specificity, so that "the permit issuer…need not guess the meaning behind imprecise comments." *In re Dominion Energy Brayton Point*, 12 E.A.D. 490, 510 (EAB 2006), citing previous decisions. The EAB has often denied review of

specific issues raised on appeal that the commenter did not raise with requisite specificity during the public comment period. Id.

ARGUMENT

In section 301(h), Congress allows EPA to issue a permit modifying the otherwise obligatory secondary treatment requirements only if all the statutory 301(h) criteria are met. As discussed above, this includes demonstrations by the applicant that all applicable water quality standards will be achieved, and that its discharge will not interfere with attainment or maintenance of water quality that assures preservation and propagation of a BIP, and allows recreation in and on the water.

The Region disapproved the requests to re-issue the 301(h) modified permits for the Honouliuli and Sand Island facilities based on findings that CCH failed to demonstrate that the the proposed discharge would meet several applicable water quality standards:

a. At Honouliuli, water quality standards for bacteria promulgated by EPA to protect swimmers and divers in Hawaii's waters.

b. At both facilities, Hawaii's standards for toxicity designed to protect aquatic organisms.

c. At both facilities, water quality standards for the pesticides chlordane and dieldrin promulgated by Hawaii to protect persons who consume fish from Hawaii's waters, and

d. At both facilities, Hawaii water quality standards for ammonia nitrogen promulgated to protect aquatic organisms from excessive algal growth and potential eutrophication.

The Region also found CCH had failed to demonstrate that its proposed discharges would not interfere with attainment and maintenance of water quality that assures protection and propagation of a balanced, indigenous population of fish, shellfish , and wildlife ("BIP"), and allows recreation in and on the water.

In order to overturn the Region's decision on either Honouliuli or Sand Island, the Board must find for CCH on its challenges to every one of these findings for each facility. If the Board sustains the Region's decision on any of these bases for either facility, the Petition must be denied as to that facility.

Petitioners have not carried their burden to demonstrate that the Region's Section 301(h) decisions were based on clear error of law or fact or raise important policy considerations meriting review. Some of the issues raised in the petition were not raised at all -- or were not raised with adequate specificity to give the Region an opportunity to respond -- during the comment periods. Petitioner's challenges misinterpret portions of the CWA and EPA's implementing regulations. The Region's decisions to deny the applications for the modifications to secondary treatment requirements were made in the sound exercise of its discretion and in accordance with the statutory and regulatory requirements governing such decisions. Therefore, Petitioner's request for review should be denied.

I. EPA Appropriately Found That CCH Had Not Demonstrated That Its Discharges Would Meet Applicable Water Quality Standards After Initial Mixing In The Receiving Water and Therefore Failed to Meet CWA Section 301(h)(9).

CWA 301(h)(9) requires the discharger to show that it can meet water quality standards[21] after initial mixing in the waters surrounding or adjacent to the point at which the effluent is discharged. 33 U.S.C. § 1311(h)(9). EPA incorporated this requirement in its regulations at 40 CFR 125.62(a)(1), under which the discharge must not exceed water quality standards "at and beyond the zone of initial dilution," or ZID. The ZID is defined as "the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards." 40

[21] EPA interprets Section 301(h)(9)'s reference to "water quality criteria" to include State water quality standards. See 40 CFR 125.62(a) and discussion below at Sec. VI.

CFR 125.58(dd). EPA's most recent 301(h) implementation guidance provides recommendations on how to calculate the physical dimensions of the ZID. Amended Section 301(h) Technical Support Document (ATSD), EPA 842-8-94-007 (Sept. 1994), Doc. S.19.4, p. S-19-217.

Although section 301(h)(9) was not added to the CWA until 1987, EPA emphasized that water quality standards needed to be met at the ZID from the very beginning, writing in the preamble to the first 301(h) regulations, "This region, which EPA termed the 'zone of initial dilution' (ZID), established a boundary beyond which State water quality standards and a balanced, indigenous population [of fish, shellfish, and wildlife][22] must be maintained." 44 Fed. Reg. 34784, 34801 (June 15, 1979).

CCH does not contest the Region's calculation of the size and dimensions of the ZIDs for the Honouliuli and Sand Island discharge points, which were determined in accordance with the ATSD. Doc. S.1.2, p. S-01-22; Doc. H.1.2, p. H-01-27. Instead, CCH argues that the Region should not have measured attainment of water quality standards at the ZID at all. CCH characterizes the two ZIDs as "federal mixing zones," and contends that the Region should have instead used a State-generated zone of mixing ("ZOM") to determine whether water quality standards would be met.

As discussed below, CCH's arguments fail on many grounds. First, CCH mischaracterizes Hawaii's water quality standards, implying that they include a defined "State ZOM" within which standards do not apply. To the contrary, what the Hawaii standards include is a process under which a discharger may request a ZOM to address particular water quality

[22] The 1979 preamble reference discusses the requirements of CWA section 301(h)(2), which requires the attainment and maintenance of water quality that assures protection and propagation of such a balanced, indigenous biological population.

standards in a specific permit. Second, CCH's argument that the Region's position is "novel" (Pet. Br. at 25) is directly contrary to EPA's clear, longstanding regulations providing that attainment of water quality standards is measured at the ZID. Third, CCH's argument that EPA has "adopted" a federally-defined mixing zone and thereby preempted Hawaii water quality standards is based on an erroneous understanding of how State water quality standards are implemented in the context of section 301(h) decision-making. Finally, the Region's past practice does not dictate a different outcome, and even if the Region were to look to ZOMs from the prior permits to determine whether CCH's effluents could meet certain standards, that would not change the results of the Region's decisions.

In making these arguments, CCH has raised issues that it did not raise in the comment period and which the Board should therefore not consider. In reaching its final decisions on CCH's 301(h) applications, the Region fully responded to the comments that were made concerning application of the ZID.

A. Bases for the Region's Decisions that CCH Had Not Demonstrated Compliance with Water Quality Standards After Initial Mixing

In its Honouliuli and Sand Island 301(h) decisions, Region 9 analyzed whether water quality standards are met "after initial mixing" in two ways, depending on the source of the monitoring data. First, for the samples that were collected from the receiving waters, the Region directly compared the measured concentrations with the water quality standards to determine whether compliance with the standards had been, and would be, achieved at the physical location that the Region determined to be the ZID boundary. Second, for the samples that were taken from the effluent prior to discharge into the receiving waters, the Region performed initial dilution modeling to estimate what the concentrations would be after initial mixing.[23] These

[23] The Region's calculations of critical initial dilution were not identical to those originally calculated by CCH in its

concentrations were determined based on "critical" initial dilution conditions, e.g., highest effluent flows, lowest flushing, etc. Doc. S.1.2, p. S-01-21, 51.

In its decisions, the Region found that water quality standards were not being met,and would not be met under the proposed discharges, for ammonia nitrogen, chlordane, dieldrin, whole effluent toxicity, and, for the Honouliuli facility, bacteria. For ammonia nitrogen (from both facilities) and bacteria (from Honouliuli), the available data were collected from receiving water monitoring stations. CCH collected the Honouliuli samples in two locations -- both at the boundary of the ZID that had been calculated for use in its pre-existing (1991) 301(h)-modified permit,[24] and also at the boundary of a larger "zone of mixing" ("ZOM") that had been granted by the Hawaii Department of Health ("HDOH") for certain pollutants in the 1991 permit. The ZOM, which had been granted with EPA's concurrence, was developed by HDOH for a limited subset of pollutants, specifically nutrients (including ammonia nitrogen), pH, temperature and salinity. Doc. H-12-4, p. H-12-1172-3. The Honouliuli permit required sampling and monitoring at physical locations representing both the ZID and the ZOM. In the Honouliuli decision, the Region's analysis of data from these monitoring stations indicated that the ammonia and bacteria standards were not being consistently met at either the ZID or the ZOM stations. Doc. H.1.2, p. H-01-52-61, 80-1.

The 1998 Sand Island permit also included – for a limited subset of pollutants, specifically nutrients, pH, temperature, and salinity -- a ZOM that had been developed by HDOH (with EPA concurrence). Doc. S.12.2, p. S-12-129. Unlike the Honouliuli permit, the Sand

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applications because the Region used more, and more recent, receiving water data when it performed the modeling. Doc. H.1.2, p. H-01-23-4; Doc. S.1.2, p. S-01-19-20. CCH is not contesting the Region's calculations of critical initial dilution.

[24] The ZIDs calculated for the 2009 decisions were identical to those used in the existing permits for both facilities, as all were based on the 301(h) ATSD [Doc. S.19.4, p. S-19-217].

Island permit had monitoring stations only at the ZOM, but not at the ZID, as the monitoring stations had been redistributed in order to capture a wider special coverage. The application (and subsequent submissions by CCH) provided data collected directly from the receiving waters at the stations specified in the permit, including those stations situated at the boundaries of the ZOM. In the 2009 Sand Island decision, the Region analyzed the available data (which was from the ZOM) and determined that the bacteria standards could consistently be met at the ZID, but the ammonia standards could not. Although, due to the placement of the monitoring stations, there were no ammonia nitrogen data collected from the actual boundary of the ZID, the Region reasoned that because the larger ZOM area showed exceedances of the ammonia nitrogen criterion, it was likely that the number of exceedances at the smaller ZID would be even greater. Doc. S.1.2, p. S-01-65-5.[25]

For chlordane, dieldrin, and whole effluent toxicity, the available data at both facilities were based on sampling from the effluent, before any mixing in the receiving waters, so modeling was required. Neither permit had included any monitoring in the receiving water, and the State had not developed or specified a ZOM for these constituents. Thus, the permits did not allow any consideration of dilution that would occur subsequent to initial dilution (i.e., dilution that occurs within the ZID). In its 301(h) decisions, the Region used effluent data and EPA-developed dilution models to calculate what the concentrations would be after initial dilution. CCH does not challenge the critical initial dilution calculations. Region 9's calculations indicated that for both facilities, Hawaii's water quality standards for chlordane, dieldrin, and

[25] As to bacteria, the Region reviewed all the data that were available, which were data from the ZOM boundary and beyond the ZOM. The Region did not model what bacteria concentrations would be at the ZID, but concluded, using best professional judgment, that because concentrations at the ZOM were well below the water quality standards requirements, those standards could also be achieved at the boundary of the smaller ZID. See bacteria worksheets, Doc. S.20.8.

whole effluent toxicity would be regularly exceeded in the receiving waters after initial dilution, i.e., at the boundary of the ZID. Doc. H.1.2, p. H-01-68, 76-6; Doc. S.1.2, p. S-01-54, 56, 62.

B. CCH Is Raising New Arguments That Should Not Be Considered.

1. The Region Fully Responded to Comments.

During the public comment periods on both tentative decisions, CCH asserted that the Region's analyses regarding the ZID were inconsistent with past practice in the two existing permits. For Honouliuli, CCH commented that in its 1988 tentative decision, the Region had stated that the ZOM should be used to determine available dilution rather than the ZID when analyzing compliance with state water quality standards for pollutants other than BOD_5 and TSS. Honouliuli comment C5.1 (Doc. H.1.5, p. H-01-167). On the Sand Island tentative decision, CCH submitted a lengthy quotation from the response to comments on the existing Sand Island permit, issued in 1998, in which monitoring stations were relocated from the ZID to the ZOM, including language that:

> EPA finds that four stations around the ZOM boundary are sufficient to determining water quality standards compliance. To maintain monitoring of water quality standards at the ZID boundary, the four ZOM stations shall serve as the nominal ZID stations. Exceedances of standards at the ZOM boundary will automatically be considered an exceedance at the ZID boundary.

Sand Island comment C63 (Doc. S.1.5, p. S-01-181). CCH accused the Region of "remarkably" reversing its decision in the 2007 Sand Island tentative decision when the Region asserted that the absence of monitoring at the ZID was a serious weakness in the monitoring data. Sand Island comment C4.1, Doc. S.1.5, p. S-01-126. Both Sand Island comments appeared directed towards the Region's statements regarding weaknesses in CCH's Sand Island monitoring program identified in the tentative decision rather than the Region's analysis of whether water quality

standards were met at the ZID.[26]

CCH also commented on the Honouliuli tentative decision (but not the Sand Island tentative decision) that if the State standards had been formulated on the basis of being measured at the edge of the ZID, "it is logical to conclude that … different numerical standards would have been set….." Honouliuli comment C5.1 (Doc. H.1.5, p. H-01-167). CCH did not raise other issues regarding use of the ZID in either set of comments.[27]

The Region responded to CCH's Honouliuli comment as follows:

> Pursuant to Clean Water Act regulations implementing 301(h) variances, all water quality standards must be achieved at and beyond the zone of initial dilution (ZID) (40 CFR 125.62(a)(i), 125.58(dd)). A Zone of Mixing (ZOM) which encompasses a larger area, allows for more dilution than does the ZID. Numeric water quality standards are established to protect beneficial uses at levels which protect against potential harm (e.g. to human health, aquatic life, etc.). The specific numeric standards which have been exceeded by the Honouliuli discharge are standards that apply to Hawaii's marine waters, not solely to waters in the vicinity of wastewater treatment plant outfalls. It is not correct to conclude that varying numeric water quality standards would be established based on varying discharge scenarios or varying dilution calculations. Water quality standards are established by states at the level necessary to protect the designated uses, with no consideration of the size of the mixing zone or even whether or not a mixing zone will be allowed. The regulatory language in 40 CFR 125.62(a)(i) regarding the need to achieve water quality standards at the ZID is clear, and EPA's analysis of CCH's application has determined that the Honouliuli discharge has exceeded applicable water quality standards at and beyond the ZID. To the extent the language quoted in the comment [regarding the Region's 1988 decision] suggests that the ZID is only relevant to BOD and TSS, that was in error.

Response to Honouliuli comment C5.1 (Doc. H.1.5, p. H-01-167). The Region's response to the one non-CCH comment regarding the ZID (see footnote 27) explained that although the existing

[26] Although the tentative decision pointed out weaknesses in the Sand Island monitoring program, the Region did not consider monitoring program weaknesses a ground for denial of the variance, as acknowledged in CCH's Sand Island comment C63 (Doc. S.1.5, p. S-01-181).

[27] The only other commenter addressing the ZID in either tentative decision noted that although EPA regulations at 40 CFR 125.62(a) require the discharge to meet water quality standards at the ZID, the Honouliuli permit contains a ZOM situated around the ZID. Honouliuli Comment P13 (Doc. H.1.6, p. H-01-299. It was unclear whether this commenter was supporting use of the ZID in the Honouliuli decision, or raising the inconsistency argument raised by CCH.

Honouliuli permit includes monitoring stations at the ZOM as well as the ZID, the locations of the different monitoring stations do not change the underlying CWA 301(h) requirement that a discharge must meet water quality standards at the boundary of the smaller ZID. Doc. H.1.6, p. H-01-266.

In response to Sand Island comment C4.1 the Region acknowledged that the 1998 permit provides for monitoring at the boundary of the larger ZOM, but emphasized that EPA regulations require all water quality standards to be achieved at and beyond the ZID. The Region acknowledged that, in retrospect, monitoring at the ZID boundary would have facilitated making determinations as to whether the discharge would attain water quality standards. The Region explained its use of dilution models to estimate initial dilution at the ZID for the purpose of determining attainment with applicable water quality standards for WET and pesticides, and use of actual receiving water data (from samples collected at the boundary of the ZOM) for the purpose of determining compliance with applicable water quality standards for ammonia and bacteria at the ZID, and repeated the earlier EPA statement quoted by the commenter -- that "exceedances of standards at the ZOM boundary will automatically be considered an exceedance at the ZID boundary." Doc. S.1.5, p. S-01-127-8. In response to Sand Island comment C63, the Region indicated that while its intent in the 1998 permit was to redistribute monitoring stations to capture a wider spatial coverage, it was now of the opinion that in a 301(h)-modified permit, monitoring at the ZID rather than the ZOM would be more appropriate for the purpose of determining attainment of applicable water quality standards. The Region stated that CCH had not been adversely affected by EPA's analysis of monitoring data from ZOM stations, referring to its response to comment C4.1 as to how data were analyzed. Doc. S.1.5, p. S-01-184.

2. CCH's New Arguments Should Not be Considered.

CCH's EAB brief goes far beyond any comments that were submitted to the Region during the comment periods. CCH now argues, for the first time, that determining compliance with water quality standards at the boundary of the ZID is inconsistent with congressional policies in the Clean Water Act. Pet. Br. at 17, 22. CCH asserts that measuring compliance at a "federal" ZID is contrary to the requirement to evaluate compliance with State water quality standards. Pet. Br. at 11-12. CCH asserts there is a State ZOM that is an essential part of the State's water quality standards, Pet. Br. at 10, 18, and that by measuring ability to meet standards at the ZID, EPA "effectively adopted new water quality standards of its own." Pet Br. at 2, 11, and 17. CCH now contends that 40 CFR 125.58(dd) – which states that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards -- should be read that the ZID is identical to any State zone of mixing; that biochemical oxygen demand (BOD_5) and suspended solids (SS) are the only "applicable" water quality standards which must be met at the ZID, Pet. Br. at 20; that the "centerpiece" of Section 301(h) is the mixing zone, Pet. Br. at 25; and that EPA has preempted State law by measuring compliance at the ZID rather than a State-adopted ZOM. Pet. Br. at 26. None of these arguments were presented during the comment period. Indeed, regarding Sand Island, it is questionable whether CCH, or anyone else, was objecting to anything other than the Region's criticism of the absence of ZID stations in the monitoring program.[28]

The EAB has emphasized that comments need to be raised during the public comment period to give the Region an opportunity to address potential problems before the permit

[28] Nor is CCH contesting EPA's use of the ZID to analyze whether its discharges will interfere with recreation or maintenance of a balanced indigenous population of fish, shellfish and wildlife, as required by section 301(h)(2). In its comments, CCH appears to have presumed that the ZID was the proper place for analyzing whether these requirements were satisfied. See, e.g., CCH comments at Doc. S.1.5, p. S-01-172, 179; H.1.5, p. H-01-228, 237.

becomes final, thereby promoting the Agency's longstanding policy that most permit issues should be resolved at the regional level. *Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97, 116-7 (EAB 2005). Comments must be made with specificity, so that "the permit issuer…need not guess the meaning behind imprecise comments." *In re Dominion Energy Brayton Point*, 12 EAD 490, 510 (EAB 2006), citing previous decisions. The EAB has often denied review of specific issues raised on appeal that the commenter did not raise with requisite specificity during the public comment period. Id. Therefore, Region 9 submits that the Board should not consider the new arguments discussed above.

Even assuming review of CCH's new arguments in this forum were proper, however, they do not present grounds for reversing or remanding Region 9's decisions. Region 9 correctly analyzed CCH's application consistently with CWA Section 301(h) and EPA's clear, longstanding regulations, and there is no conflict with State mixing zone provisions, as discussed below.

C. The Region Reasonably Based its Water Quality Standards Findings on Attainment at the Boundary of the ZIDs.

EPA regulations and implementation guidance clearly identify the ZID as the boundary at which attainment of applicable water quality standards should be determined. EPA regulations and guidance also explain that the ZID boundary should be used for determination of compliance with all applicable water quality standards, not simply for the pollutants for which limitations can be modified under CWA section 301(h). And even if the Region were to consider monitoring data taken at ZOM stations used in prior permits, the results would not change: For the pollutants where samples were taken in the receiving waters -- bacteria and ammonia nitrogen -- the data demonstrate that water quality standards would not be met at the boundary of the ZOM for ammonia nitrogen at both facilities, and at Honouliuli for bacteria, whereas for

chlordane, dieldrin, and toxicity, compliance with standards "after initial mixing" was based on application of modeled initial dilution calculations to samples taken from the effluent, which CCH has not challenged. Thus, CCH's challenge regarding the Region's allegedly manufactured "federal mixing zones" is largely academic.

1. CCH Mischaracterizes Hawaii's Mixing Zone Provisions.

CCH now asserts that "[w]hen a state provides for a mixing zone within which its standards need not be met, the zone is inseparable from the state's numerical limits." Pet. Br. at 19. The implication of CCH's argument is that Hawaii's water quality standards include a defined mixing zone that is larger than the ZID calculated pursuant to EPA regulations and using the ATSD (Docs. S-01-22, H-01-27) To the contrary, there is no such thing as a defined mixing zone in Hawaii's water quality standards.

Rather than setting a geographically-defined State mixing zone, Hawaii's mixing zone provisions provide a process for establishing zones of mixing by the State, based on the application of the discharger for a specific permit. This process is found in section 11-54-9 of Hawaii's water quality standards (Hawaii Administrative Rules, Title 11, Chapter 54, August 31, 2004) (Doc. S.19.1, p. S-19-47 through S-19-51). Following are excerpts from section 11-54-9:

> §11-54-9 Zones of mixing.
> …
> (c) (1) Application for establishment of a zone of mixing shall be made concurrently with any discharge permits …
> (2) Each application for a zone of mixing shall be reviewed in light of the descriptions, statements, plans, histories, and other supporting information as may be submitted … and in light of the effect or probable effect upon water quality standards …
> ….
> (4) Approval of a zone of mixing shall be made either after a public hearing is held … or after the public notification and comment process duly established for a discharge permit….
> (5) No zone of mixing shall be established … unless the application and the supporting information clearly show that:

> (A) The continuation of the function or operation involved in the discharge by the granting of the zone of mixing is in the public interest; …
> [and]
> (C) Compliance with the existing water quality standards from which a zone of mixing is sought would produce serious hardships without equal or greater benefits to the public…
> ….
> (6)(B) The director may issue a zone of mixing for a period not exceeding five years;
> ….
> (7) Any zone of mixing … may be renewed from time to time on terms and conditions and for periods not exceeding five years … Any new zones of mixing or requests for zone of mixing renewals for wastewater treatment plants (WWTPs) performing primary treatment shall comply with Section 301(h) of the [Clean Water Act]. …
>
> (9) The establishment of any zone of mixing shall be subject to the concurrence of the U.S. Environmental Protection Agency;
> ….
> (12) Upon expiration of the period stated in the designation, the zone of mixing shall automatically terminate and no rights shall become vested in the designee.

These provisions in no way specify physical dimensions that are appropriate for a mixing zone, nor even that there be a mixing zone for every discharge. Rather, a zone of mixing can be set specifically for a particular permit to address particular water quality standards,, based on information submitted by the discharger and reviewed by the State, subject to a public process and the concurrence of EPA. Mixing zones are issued "for periods not exceeding five years" and "upon expiration of the period stated in the designation, …shall automatically terminate and no rights shall become vested in the designee." HAR 11-54-9(c)(7),(12). In other words, a mixing zone can never be considered a permanent entitlement under either a specific permit or under Hawaii's regulations in general. Thus, it is incorrect for CCH to state that the Region applied "the portion of Hawaii's water quality standards that sets numerical limits, while not applying the portion that defines where those numerical limits apply." Pet. Br. at 18. Hawaii's water quality standards do not provide a zone inside of which standards do not apply. Rather, they

provide for a procedure for determining whether to authorize such a zone in a particular permit to address particular water quality standards.

Finally, any argument that the Region's analyzing compliance with water quality standards at the ZID was inconsistent with Hawaii's mixing zone regulation is directly contradicted by the provision of the Hawaii standard that zones of mixing for wastewater treatment plants performing primary treatment shall comply with Section 301(h). HAR 11-54-9(c)(7), p. S-19-50.

2. Longstanding EPA Regulations Identify the ZID as the Location Where Attainment of All Water Quality Standards Must be Determined.

a. EPA's ZID regulations are longstanding.

In its Honouliuli and Sand Island decisions, Region 9 reasonably applied EPA regulations that are clear, longstanding, and consistent with the Clean Water Act, specifically the requirement that the discharge not exceed all applicable standards "at or beyond the zone of dilution," which implements the statutory direction in CWA section 301(h)(9) regarding attainment of water quality criteria "after initial mixing." In fact, the ZID requirement pre-dated section 301(h)(9), and has been part of EPA's regulations since 1979. 40 CFR 125.61(a)(1)(ii)(1980) ("The initial dilution achieved by the applicant's modified discharge … must be sufficient to meet all applicable State water quality standards at and beyond the boundary of the zone of initial dilution during those conditions defined as critical…."); 44 Fed. Reg. 34784, 34818 (June 15, 1979).[29] In 1994, the regulation was rephrased and recodified in its current form. 59 Fed. Reg. 40642, 40663 (August 9, 1994); 40 C.F.R. 125.62(a)(1) ("[T]he

[29] Although when the 1979 regulations were promulgated section 301(h) did not contain section (h)(9), the requirement to meet all applicable water quality standards at the ZID was included as part of the analysis regarding the section 301(h)(2) requirements that a modified permit not interfere with the attainment or maintenance of that water quality which assures protection of a balanced indigenous population of shellfish, fish and wildlife ("BIP"), and allows recreational activities, in and on the water. 44 Fed. Reg. 34784, 34818-9, sec. 125.61(a)(ii), (c)(iv), (d)(ii).

applicant's outfall and diffuser must be located and designed to provide adequate initial dilution…such that the discharge does not exceed at and beyond the zone of initial dilution: (1) All applicable water quality standards …."). If CCH is challenging EPA's regulation at 40 CFR 125.62(a), it is clearly too late to do so.[30]

When EPA proposed promulgation of its revised regulations in 1991, following enactment of Section 301(h)(9), it tied the ZID requirement directly to section 301(h)(9): "EPA is interpreting 'after initial mixing in the waters surrounding or adjacent to the point at which (the) effluent is discharged' to mean at the boundary of the ZID (proposed sec. 125.62(a)(1))." 56 Fed. Reg. 2814, 2820 (Jan. 24, 1991). When the revised regulations were promulgated in 1994, EPA corrected an inadvertent omission in the proposed regulations of language requiring meeting certain water quality standards at and beyond the ZID, and in doing so emphasized the continuity with EPA's ongoing practice in analyzing 301(h) applications "so that the original requirement of the 1982 regulations for meeting State water quality standards at the edge of the zone of initial dilution remains in effect." 59 Fed. Reg. 40642, 40643 (August 9, 1994).[31]

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[30] CCH suggests the EPA regulation may be unlawful, although it does not elaborate on this assertion. Pet.Br. at 2, 28. Under the Act, challenges to permit regulations must be made in the Courts of Appeals within 120 days from promulgation. CWA section 509(b)(1)(E), 33 US.C. § 1369(b)(1)(E). To the extent CCH is challenging EPA's regulations, such challenge is both too late and in the wrong forum. The Board generally does not entertain challenges to final Agency regulations in the context of permit appeals, making an exception only when there are "extremely compelling" circumstances warranting such review. *In re USGen. New England, Inc. Brayton Point Station*, 11 E.A.D. 525, 555, 558 (EAB 2004). "Once the rule is no longer subject to court challenge by reason of the statutory preclusive rule provision, the Agency is entitled to close the book on the rule insofar as its validity is concerned." Id at 556-7. For similar reasons, the Board should ignore the argument presented at Pet. Br. at 16, n22, which likewise was not raised below. That CWA section 509(b)(1) precludes review in enforcement proceedings does not mean that review of regulations is available after the 120th day after promulgation. The emphasis in the additional sentence regarding criminal enforcement is consistent with the rule of lenity. In an earlier challenge to the 301(h) regulations, the D.C. Circuit found the regulations constitute "effluent limitations" within the meaning of CWA 509(b)(1)(E) because they would in practice limit the discharge of sewage by limiting the availability of a 301(h) permit. *NRDC v. EPA*, 656 F.2d 768, 776 (D.C. Cir. 1981). Even if the "mixing zone" rule alleged by CCH were not an "effluent limitation" as narrowly suggested, the substantive decisional criterion still would be an "effluent limitation or other limitation." *NRDC v. EPA*, 673 F.2d 400, 404 & n.11 (D.C. Cir. 1982). That case also discusses the alleged litigation incentive alleged by CCH. *Id.* at 406-407.

[31] The proposed regulation had required compliance at the ZID with section 304(a) criteria and directly corresponding State water quality standards, but had inadvertently omitted those State water quality standards that

CCH's argument, Pet. Br. at 19, that EPA's definition of the ZID at 125.58(dd) does not require EPA to use the ZID when it is smaller than a state mixing zone, is not consistent with either the language of the regulations themselves or with EPA's intent as expressed in its preambles. The language of Section 125.58(dd) is clear that the ZID cannot be larger than mixing zone restrictions in state water quality standards. It does not say that the ZID must be the same as the mixing zone allowed in state water quality standards. As early as 1979, EPA was clear that its regulations could, in some circumstances, require conditions more stringent than those that might be imposed by a state:

> The proposed regulation required that applicants demonstrate that their initial dilution, as calculated in the application format, would be sufficient to meet all applicable State water quality standards under the most demanding critical conditions likely to occur during the life of any modified permit. This provision was meant to require each applicant to demonstrate that, in addition to meeting State water quality standards under conditions dictated by the State, it would also meet applicable standards using a conservative dilution model and under assumed worst case conditions. This demonstration will provide additional assurance that physical conditions at the outfall site are compatible with the attainment and maintenance of recreational water uses, public water supplies, and a balanced, indigenous population.

44 Fed. Reg. 34784, 34799 (June 15, 1979) (emphasis added).

CCH points to the fact that the clause "provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards" in the EPA regulation was added in response to a commenter "who suggested that any proposed ZID should conform to State requirements," citing 44 Fed. Reg. 34784, 347801 (July 15, 1979) (Pet.Br. at 19). That is true; the additional text was inspired in response to comment. EPA's response, however, did not accept the commenter's suggestion; it responded to it. EPA responded that the ZID should conform to restrictions in the state standards, specifically, that it be no larger than allowed by the

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do not directly correspond. 59 Fed. Reg. 40642, 40651 (August 9, 1994).

state. Moreover, in its latest regulatory revision adopting the current ZID language in 1994, EPA expressly rejected a proposal to change the regulation so as to provide that compliance with State water quality standards would be "determined under methods and conditions specified by the State in its standards." 59 Fed. Reg. at 40651.

Finally, allowing a discharger to demonstrate compliance with water quality standards using a larger mixing zone is also inconsistent with the legislative intent. As stated by the conference committee, "The term 'initial mixing' shall not be interpreted expansively." 1987 Leg Hist of WQA of 1987 sec. 303, PL 100-4, Conference Report No. 79-1004, 99th Congress, 2nd Session, p. 000834 (1986), same quotation, Conf. Report 99-1004, p. 119 or 838.

b. EPA Regulations Require Attainment of All Applicable Water Quality Standards, Not Just Those for BOD and TSS, at the Boundary of the ZID.

CCH contends that, at most, compliance at the ZID should be required only for BOD and TSS, the pollutants for which CCH is requesting the variance from secondary treatment requirements, but not other water quality standards. Pet. Br. at 2 & 20. Here, CCH has it backwards. The ZID requirement is included in 40 CFR 125.62(a), which applies to all water quality standards, but it is not included in 40 CFR 125.61, which applies only to BOD and TSS (and pH, for which CCH is not requesting variances). CCH appears to base its argument solely on the fact that the heading for 125.61 – the section that does not discuss the ZID -- includes the word "applicable," and 125.61 deals with BOD and TSS. Pet. Br. at 11, 17 & 20. CCH's interpretation of the regulations is neither straightforward nor obvious. A simpler, more consistent, more obvious, and more logical interpretation of the regulations is that "applicable" water quality standards, as that term is used in both sections 125.61 and 125.62(a), simply means the water quality standards that apply to the receiving waters. For example, standards for marine water could be "applicable" in a 301(h) analysis, but standards for freshwater would not.

Alternatively, the word "applicable" may be a historical vestige from EPA's original 301(h) regulations, in which compliance with "applicable" water quality standards was analyzed in connection with the requirements in section 301(h)(2) to attain or maintain water quality which assures protection of a balanced, indigenous population of fish, shellfish, and wildlife ("BIP"), and allows recreational activities. In that context, "applicable" referred to water quality standards related to protection of aquatic life or related to recreation. See 44 Fed. Reg. 34784, 34818-9, sec. 125.61(c)(iv) and (d)(ii). The discussion of carcinogens in 40 CFR 125.62(a)(2), moreover, would simply not make sense if the only standards that had to be met at the ZID were for BOD and TSS, which are not carcinogens. EPA's 301(h) ATSD is crystal clear that "[c]ompliance with criteria and standards … such as standards for nutrients, toxic pollutants, and coliform bacteria concentrations at the edge of the ZID, is necessary." Doc. S.19.4, p. S-19-227. Regardless, CCH's argument that the only "applicable" water quality standards that should be considered are those for BOD and TSS is illogical.

CCH contends that EPA "has always understood the regulation" to apply the ZID only to BOD and TSS (Pet. Br. at 20), basing this assertion on a preamble quotation that compliance with BOD, TSS and pH standards is mandatory – which is true, but irrelevant to the issue of the point of attainment, i.e., the ZID issue.

To the contrary, EPA's regulations, and the preamble language interpreting them, have consistently provided for 30 years that the requirement to meet water quality standards at the ZID applies, at the very least, to all water quality standards promulgated to protect "a balanced, indigenous population of shellfish, fish and wildlife" ("BIP") and recreation. As noted above, in the 1979 preamble, EPA described the ZID as "a boundary beyond which State water quality standards and a balanced, indigenous population must be maintained." 44 Fed. Reg. at 34801.

Accordingly, the original section 125.61 (corresponding to the current 125.62 and labeled "Attainment or maintenance of water quality which assures …. protection and propagation of [a BIP] and allows recreational activities") requires meeting all applicable State water quality standards "at and beyond the boundary of the ZID" (40 CFR 125.61(a)(ii)), and uses the term "applicable water quality standards" in conjunction with "water quality standards … promulgated for the purpose of attaining or maintaining water quality which provides for the protection and propagation of fish, shellfish and wildlife" (40 CFR 125.61(c)(1)(iv)) and "water quality standards … promulgated for the purpose of attaining or maintaining water quality which allows for recreational activities" (125.61(d)(1)(ii)). See 44 Fed. Reg. at 34819. These requirements could not have been referring solely to BOD, TSS and pH. Those criteria were addressed separately in the original 125.60. It would be inconsistent with the goal of protecting aquatic life and recreation to not consider whether all water quality standards specifically established to protect these uses could be attained.

When EPA promulgated the original 301(h) regulations in 1979, prior to enactment of section 301(h)(9), it may be that EPA based the requirement that all water quality standards – not just those related to BIP and recreation -- had to be met for a 301(h) modified permit to be issued, not on specific language in section 301(h) but on the requirement of CWA section 301(b)(1)(C) that all permits needed to meet water quality standards. As stated in EPA's preamble:

> [A] section 301(h) applicant will, of course, be required to meet all other applicable requirements of the Act and [EPA regulations]. Thus, no modification will be issued … where, for example, the discharge for which a modification is requested would violate State water quality or treatment standards or other State requirements within the meaning of section 301(b)(1)(C) ….

44 Fed. Reg. at 34796 (June 15, 1979). Thus, one could conceivably interpret EPA's 1979

regulations to require that only those water quality standards necessary to protect aquatic life or recreation need to have been met at the boundary of the ZID, while water quality standards established to protect other uses could be met at a larger ZOM if State standards so allowed.[32] That possible result would have been changed, however, with the legislative action in 1987 regarding section 301(h)(9).

The need to demonstrate attainment of all water quality standards at the boundary of the ZID became clear with the 1987 enactment of CWA section 301(h)(9), and even clearer with the promulgation of EPA's 1994 regulations. Those regulations, currently published at 40 CFR 125.62, explain the requirement that a discharge not exceed, at or beyond the ZID, all applicable water quality standards, including but not limited to carcinogens -- which do not include BOD, SS or pH. As noted above, EPA's 1994 ATSD for 301(h) specifically explains: "[c]ompliance with criteria and standards … such as standards for nutrients, toxic pollutants, and coliform bacteria concentrations at the edge of the ZID, is necessary." Doc. S.19.4, p. S-19-227.

3. The Region's Position is Consistent with Congressional Intent and Does Not Preempt State Water Quality Standards.

CCH attempts to buttress its arguments regarding the ZID by asserting that the purpose of 301(h) is to allow mixing in the ocean, going so far as to say that "the centerpiece of the Section 301(h) regime is the mixing zone." Pet. Br. at 25. Certainly, Congress recognized "initial mixing" in Section 301(h)(9) itself, and EPA has acknowledged that Section 301(h) was enacted in response to testimony of coastal municipalities regarding ocean waters "where wastes are rapidly assimilated and dispersed by strong currents and tidal action." 44 Fed. Reg. at 34784 (June 15, 1979).

[32] All the standards at issue in the CCH 301(h) decisions were promulgated to protect recreation (bacteria, chlordane, dieldrin) or aquatic life (ammonia nitrogen, whole effluent toxicity).

Nevertheless, Congress was clear that section 301(h) modified permits could not be granted unless the discharger made a specific showing that there was adequate initial mixing such that water quality standards would be met. As stated in EPA's 1978 preamble:

> Each applicant … will be required to demonstrate, based on the physical arrangement of its outfall structure and the physical oceanographic conditions in the vicinity of its outfall, that there is sufficient initial dilution and effective flushing to assure the attainment of water quality necessary to protect marine communities at the edge of the zone of initial dilution.

43 Fed. Reg. 17484, 17489 (April 25, 1978). EPA's 301(h) regulations recognize that some dilution is allowed – so long as water quality standards are met at and beyond the edge of the ZID. 40 CFR 125.62(a)(1).

Additionally, CCH argues that the Region's approach is unlawful preemption of State law. This argument is curious in light of CCH's contradictory argument, discussed in section VI below, that for chlordane, EPA's Section 304(a) criteria – rather than Hawaii's water quality standards – should apply. More importantly, however, this argument misrepresents the structure of the CWA, which places the initial responsibility for setting water quality standards on the states, but gives EPA an oversight role in approving such standards, and, in certain cases, establishing standards when necessary in the face of state default. Hawaii's mixing zone provisions themselves, which specifically defer to section 301(h) for discharges of primary-treated wastewater, expressly provide that any mixing zone needs EPA approval. HAR 11-54-9(c)(9), Doc. S.19.1, p. S-19-50. CCH's preemption argument further fails to recognize EPA's specific reference and deference to state standards in the regulation requiring that the ZID cannot be larger than that allowed under the restrictions in state mixing zones. 40 CFR 125.58(dd).

4. The Region's Past Practice Does Not Dictate A Different Outcome.

a. EPA Is Not Bound by Past Permit Decisions

As discussed above, the Region's approach in the 2009 decisions is fully consistent with

applicable regulations and EPA guidance. Nevertheless, CCH argues that past practice in Region 9 dictates that CCH does not have to comply with pollutants other than BOD and SS at the ZID.[33] CCH states it has never had to comply at the ZID with standards for pollutants other than BOD and TSS, and that the Region did not offer a reasonable basis for the switch in position. Pet. Br. at 21.

To the extent Region 9 may have espoused a different approach in prior permits, the plain answer is that such an approach would have been in error, as acknowledged in the Region's response to Honouliuli comment C5.1 (Doc. H.1.5, p. H-01-167) and Sand Island comment C4.1 (Doc. S.1.5, p. S-01-127-8). The Sand Island response explains that monitoring stations were relocated to the boundary of the ZOM in 1998 in order to capture a wider spatial coverage, but acknowledged that the Region was now of the opinion that monitoring should be at the ZID to facilitate analysis of a whether water quality standards were being attained. The Region's responses clearly explain why the Region requires compliance with standards at the boundary of the ZID. That conclusion is required by existing regulations, which the Region was, and is, constrained to follow. The petition does not challenge, the Region is not defending, and the Board is not adjudicating those expired permits. The duration of a permit is five years. Administrative agencies may change their interpretations of statutes and regulations, provided they explain their bases for their new decisions. *FCC v. FoxTelevision Stations, et al.*, 129 S. Ct. 1800, 173 L. Ed. 2d 738, 751 (2009) (For an agency to change an interpretation, "it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better, which the conscious change of course adequately indicates.")

[33] CCH relies on a Regional briefing document from the early 1990s requiring the discharger to meet standards for BOD, TSS and pH – which is necessary, but, again, irrelevant to the ZID issue -- and a statement in Region 9's 1988 Honouliuli tentative decision that the ZOM should apply to determine compliance with State water quality standards other than BOD and TSS. Pet.Br. at 20.

Finally, CCH's allegations regarding past practice can apply to only one pollutant at issue in these proceedings – ammonia nitrogen – as that is the only pollutant at issue here for which the past permits included a ZOM. And, as discussed below, data from the past permits show numerous exceedances for this pollutant at ZOM monitoring stations, as well as stations at the ZID.

b. Even if CCH's Arguments Were Accepted, the Results Would Not Change.

As noted above, CCH's suggestion that past permits demonstrate that compliance with water quality standards should be measured at the ZOM only applies one pollutant relevant to the Region's decision to deny renewal of the 301(h) variance – ammonia nitrogen. The discharges at issue, however, would not assure attainment of water quality standards for ammonia nitrogen at the ZOMs. See Honouliuli Tables 22a and 22b, Doc. 1.2, p. H-01-151, discussion page H-01-81; for Sand Island, Doc. S.1.2, p. S-01-63-65 and Tables 7-10a, p. S-01-106-108. At Sand Island in 2008, for example, geometric means averaging all depths exceeded the water quality criterion of 3.5 ug/L at all four ZOM stations, with means ranging from 4.8 through 7.6 ug/L (Sand Island FDD, Table 7a, p. S-01-106). For bottom samples only, three of the four ZOM geometric means in 2008 exceeded the water quality criterion, the highest calculated as 28.4 ug/L (Table 10a, p. S-01-108). Thus, because CCH does not and cannot contest that its discharge will not meet the water quality standard for ammonia nitrogen even at the boundary of the ZOMs, its challenge to the Region's application of water quality standards at the ZIDs is largely academic.

As discussed above, the current permits include zones of mixing only for specific pollutants, including nutrients (such as ammonia nitrogen), but not including bacteria, chlordane, dieldrin, or whole effluent toxicity. Permit compliance with whole effluent toxicity, chlordane and dieldrin was determined based on effluent sampling and modeling, not receiving water

sampling and direct comparison to applicable standards. Similarly, in these section 301(h) decisions, the Region analyzed water quality standards attainment for these pollutants using initial dilution calculations, which CCH has not challenged**.**

As to bacteria, CCH may be technically correct that it has not had to comply with standards at the ZID (Pet. Br. at 21); however, that is because until 2004, Hawaii did not have bacteria standards that applied in the vicinity of either the ZID or the ZOM, because Hawaii's bacteria standards only applied to waters within 300 meters (1000 feet) of shore, as discussed in section III below. Nonetheless, the data demonstrates that even if only ZOM samples were used, the Honouliuli discharge does not attain the bacteria criterion at ZOM stations. See, e.g., Doc. H.1.2, p. H-01-127, Table 9b. As shown in Table 9b, the geometric mean of 35 cfu/100 mL was routinely exceeded at bottom depths at ZOM stations throughout 2008, with the highest exceedance at 1039.7 cfu/mL.

CCH is not contesting analysis of the BIP and recreation requirements of 301(h)(2) at the ZID, and in this regard the 1991 Honouliuli permit specifically indicated that the ZID was the place to analyze whether the discharge would interfere with attainment and maintenance of a BIP and allow recreation. Honouliuli permit page 4, doc. H.12-4, p. H-12-1172.[34]

D. Conclusion Regarding the ZID

In sum, Region 9's analysis of whether the CCH facilities would meet water quality standards under a renewed 301(h) modified permit is entirely consistent with EPA's clear, longstanding regulations. There is no conflict between these regulations and Hawaii's mixing

[34] CCH's statement, Pet.Br. at 26, that Region 9 does not dispute that the state-defined ZOM is the proper mixing zone to use when determining whether the treatment plants have complied with their current permits could apply, at most, to only those specific pollutants for which the permit included a ZOM, which, as discussed above, do not include bacteria, chlordane, dieldrin, or whole effluent toxicity. Region 9 also explained in response to comments that the issue in its 2009 301(h) decisions was not whether existing permits were complied with, but whether the discharger had demonstrated a renewed 301(h)-modified permit would comply with all the 301(h) requirements. See, e.g., response to Sand Island comment C27 (Doc. S.1.5, p. S-01-143).

zone provisions, which specifically defer to Section 301(h) requirements for primary-treated discharges, do not establish a ZOM as a specific geographical area, indicate that mixing zones are subject to concurrence by EPA, and do not establish a permanent entitlement by a permittee.

For ammonia and Honouliuli bacteria, the Region correctly analyzed whether the water quality standards were met at the ZID. They were not. Nor were standards met at the ZOM for bacteria at Honouliuli (Doc. H.1.2, p. H-01-61), or for ammonia nitrogen at either facility.[35] For chlordane, dieldrin, and WET, the Region correctly analyzed initial mixing using initial dilution calculations as discussed in EPA's 301(h) ATSD, which CCH is not challenging. Region 9 appropriately found CCH's discharges could not meet water quality standards after initial mixing in the receiving water and thus did not satisfy section 301(h)(9).

II. The Region Reasonably Found That CCH Failed to Demonstrate That Its Discharges Will Not Interfere With Attainment and Maintenance of Water Quality Protective of Aquatic Life and Recreation, and Therefore Failed to Comply with Section 301(h)(2).

Section 301(h)(2) requires the discharger to demonstrate, to the satisfaction of EPA, that its discharges will not interfere with the attainment and maintenance of that water quality which supports a balanced indigenous population of fish, shellfish, and wildlife ("BIP") and allows recreation in and on the water. The Region found that neither the Honouliuli nor the Sand Island discharge satisfied this requirement.

Central to the Region's findings was CCH's failure to demonstrate that its discharges would attain water quality standards designed to protect aquatic life – i.e., a BIP – and recreation. CCH now challenges EPA's reliance on nonattainment of water quality standards in its determinations that the BIP and recreation requirements of section 301(h)(2) were not met. As discussed below, however, the very words of section 301(h)(2) emphasize the need to evaluate

[35] For Honouliuli ammonia nitrogen, see especially tables 22a and b in the FDD, Doc. H.1.2, p. H-01-151, regarding the most recent data. For Sand Island, all the monitoring data on which the Region's findings were based was from ZOM stations. See Sand Island FDD, Doc. S.1.2, p. S-01-63, 65, and Tables 7-10a, p. S-01-106 through 108.

"water quality," as do EPA's implementing regulations. The underlying purpose of water quality standards is to protect designated uses such as aquatic life and recreation, and if those standards are not being met, then by definition the discharge is interfering with attainment and maintenance of water quality protective of aquatic life or recreation.

A. The Region Appropriately Evaluated Several Independent Types of Data

The Region performed extensive analyses related to the section 301(h)(2) criteria. As suggested in the 301(h) ATSD (Doc. S.19.4, p. S-19-237), the Region evaluated the BIP criterion using the approach of EPA's Technical Support Document for Water Quality-based Toxics Control ("Toxics TSD") (1991), Doc. H.2.4, p. H-02-1808, 1818, 1828, 1849 et seq., under which three types of information -- chemical specific, whole effluent toxicity, and biological data -- are analyzed in evaluating potential for adverse impacts to marine life. Doc. H.1.2, p. H-01-83; Doc. S.1.2, p. S-01-67. Although the biological data did not show that impacts were occurring presently (H-01-03, S-01-77), the Region found that neither discharge was able to achieve water quality standards for ammonia nitrogen adopted to protect aquatic life by preventing excess algal growth that could harm the biotic community. H-01-88-9, S-01-72, 78. Additionally, whole effluent toxicity testing conducted with a Pacific sea urchin species indicated that the effluent was often highly toxic. H-01-88, S-01-71. The Region noted in the 301(h) decisions that since the sea urchin is a benthic macroinvertebrate and is considered a representative of other tropical invertebrate species that would be present in Hawaii, it was reasonable to conclude that toxicity observed with this species may potentially affect other aquatic life in Hawaiian marine waters. H-01-88, S-01-71.

In analyzing whether the discharges would interfere with water quality that allows recreation, the Region evaluated both recreational fishing and water-contact recreation. Again,

the Region evaluated several types of data, including bioaccumulation data, effluent data, and sediment data. Although the information was mixed (S-01-82, H-01-408), the Region determined that neither discharge was able to achieve water quality standards for the bioaccumulative carcinogens chlordane and dieldrin that had been adopted to protect human consumption of fish (S-01-82, H-01-408); thus, the Region found that both discharges could interfere with maintaining water quality supporting recreational fishing. S-01-82, H-01-409. Additionally, the Honouliuli discharge was unable to achieve water quality standards for bacteria adopted to protect swimmers from gastrointestinal disease, and thus would not be protective of water contact recreation. H-01-409.

B. The Region Fully Responded to Comments

CCH and others commented on both tentative decisions that because no demonstrated harm to aquatic life or recreation had been shown, the section 301(h)(2) BIP and recreation requirements were satisfied. See, e.g. Honouliuli comments C5.5, C51, C60, C61, P29 (Doc. H.1.5, p. H-01-169, 229, 236; Doc. H.1.6, p. H-01-273), Sand Island comments C4.2, C46, C57, P46 (Doc. S.1.5, p. S-01-129, 166, 175; Doc. S.1.6, p. S-01-213).

The Region responded at length to these comments. As to both the BIP and recreation criteria, the Region emphasized the requirement specified in the CWA, including specifically in section 301(h)(2), to attain and maintain water quality that assures protection of a BIP and allows recreation. For example, in response to Honouliuli comment C63 regarding recreational fishing, the Region wrote as follows:

> Hawaii has established numeric criteria for toxic pollutants in water to ensure that the fish caught by anglers in Hawaii's waters will be safe to eat. 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 specifically adopted by the state of Hawaii for two

> pesticides, dieldrin and chlordane, to protect against carcinogenic effects. 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 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. Although available fish tissue data do not, in and of themselves, point to current adverse impacts from the discharge, the absence of detection 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. The objective of the Clean Water Act is to restore *and maintain* the chemical, physical, and biological integrity of the Nation's waters. CWA section 101(a). Under Section 301(h), the applicant's burden is to show that its discharges 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.

Doc. H.1.5, p. H-01-239.

As to the BIP requirement, in response to Honouliuli comment P29 that monitoring data do not show adverse impacts, the Region stated that it had considered the environmental studies submitted by CCH; however:

> 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 to prevent such severe impacts from happening. … [Section 301(h)(2)] requires ensuring that water quality will be protected before the occurrence of adverse effects, not waiting until there are severe impacts.

Doc. H.1.6, p. H-01-273.

EPA also explained the multiple lines of evidence approach from its Toxics TSD in its comment responses. For example, in response to Honouliuli comment C60, the Region noted that despite CCH's apparent assertion that the BIP requirement was satisfied because of the absence of data showing that adverse effects of aquatic organisms had already occurred, the Region could not ignore the toxicity test results, nor the data related to ammonia nitrogen. The Region quoted from the Toxics TSD regarding the integration of chemical specific, whole

effluent toxicity, and biological data:

> It is EPA's position that the concept of "independent application" be applied to water quality-based situations. Since each method has unique as well as overlapping attributes, sensitivities, and program applications, no single approach for detecting impact should be considered uniformly superior to any other approach. For example, the inability to detect receiving water impacts using a biosurvey alone is insufficient evidence to waive or relax a permit limit established using either of the other methods.

Doc. H.1.5, p. H-01-236. In response to Honouliuli Comment C55, the Region noted that under the integrated approach to water quality-based toxics control, exclusive use of one approach alone cannot ensure required protection of aquatic life. EPA considered all three and found the discharge would not attain water quality standards established to protect aquatic life, specifically whole effluent toxicity and ammonia nitrogen. Doc. H.1.5, p. H-01-174.

The Region's responses also noted uncertainties in the biological data. In response to Honouliuli comment C42, the Region noted that infrequent monitoring (four times a year) meant that algae blooms could be occurring without being reported, and that it was appropriate to conclude that the proposed discharge could contribute to algae blooms, given the exceedances of ammonia nitrogen standards and the high percentage of the time that the receiving water was not monitored. Doc. H.1.5, p. H-01-224. Similarly, in response to Honouliuli comment C57, the Region stated: "Although there are no data that algal blooms occur, there is no regular procedure for detecting increases in algal concentration, aside from field observations made in conjunction with quarterly offshore monitoring." Doc. H.1.5, p. H-01-233.

C. The Region Reasonably Considered Attainment of Water Quality Standards in Determining Whether the Discharges Would Interfere with Attainment and Maintenance of Water Quality that would Assure Protection and Propagation of a BIP and Allow Recreation In and On the Water.

Water quality standards specify designated uses, which generally include fishing and swimming uses and protection of aquatic life. Whether or not a discharge will achieve aquatic

life water quality standards is a key component of the analysis of whether the proposed discharge will interfere with attaining and maintaining water quality that assures protection of a BIP. Similarly, whether or not the discharge will achieve water quality standards designed to protect recreation is a necessary component in the analysis of whether the discharge will interfere with attaining and maintaining water quality that allows recreation in and on the water.

In its EAB brief, however, CCH appears to be asserting that information indicating whether water quality standards will be met should not even be considered in the 301(h)(2) analysis. CCH accuses the Region of "[making] section 301(h)(2) into a standards-enforcement provision, which is a function of the permit itself" (brief p.12), and contends that if Congress had wanted Sec. 301(h)(2) to require compliance with water quality standards, it would have said so (Pet.Br. at 30).[36,37]

CCH's assertion that water quality standards should not even be considered in the BIP and recreation evaluations is directly refuted by the language of Section 301(h)(2), which specifically looks to the quality of the water:

> The Administrator … may issue a [301(h)-modified] permit … if the applicant demonstrates to the satisfaction of the Administrator that – (2) the discharge of pollutants in accordance with such modified requirements will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which assures … the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife, and allows recreational activities in and on the water [.]

[36] CCH also claims EPA's section (h)(2) analysis was incorrect because of what CCH contends are errors in EPA's analyses of compliance with water quality standards. These issues are addressed elsewhere in this brief.

[37] It is not clear that the argument that water quality standards should never be considered in the 301(h)(2) evaluation was raised in comments, although the drift of many BIP comments was that because there were no demonstrated biological impairments, the BIP requirement should be considered satisfied. The recreational fishing comments mainly pointed to fish-tissue data that did not show actual bioaccumulation of pesticides. CCH's comments on water contact recreation mainly asserted that water contact recreation was not occurring near the outfall, although there were public comments that there had not been beach closures or current health threats. In its brief, CCH did not point to any Sand Island comments related to any of theses issues. As to Honouliuli comments, CCH cited only comments C41 and C42, both of which dealt only with nutrients. Doc. H.1.5, p. H-01-223.

CWA section 301(h)(2). By writing section (h)(2) to require attainment or maintenance of water quality, Congress in fact did require compliance with water quality standards addressing aquatic life as part of the BIP analysis.

1. Implementing Regulations Include Consideration of Attainment of Water Quality Standards in Determining Whether the Discharge would Interfere with Water Quality That Assures Protection and Propagation of a BIP and Allow for Recreation.

From their inception, EPA's regulations indicated that meeting relevant water quality standards was a necessary element in 301(h)(2) analysis. In proposing the first 301(h) regulations, EPA noted that it "had determined that the actual and potential impact of the discharge on the biota should be evaluated on the basis of a chemical assessment of effluent and water quality, and a physical assessment and biological assessment of the impact of the discharge on marine life and ecosystems." 43 Fed. Reg. 17484, 17488 (April 25, 1978). The original BIP regulation, then at 40 CFR 125.61(c)(iv), included meeting aquatic life water quality standards as a component of the BIP analysis, just as the original recreation regulation at 40 CFR 125.61(d)(ii) included meeting water quality standards designed to protect recreation. 44 Fed. Reg. 34784, 34819 (June 15, 1979). As to recreation, EPA wrote in the preamble to the original regulation:

> In its proposed regulations implementing section 301(h)(2), EPA required an applicant to demonstrate, based on detailed analysis of the impact of its discharge on existing and potential recreational activities . . . that the discharge would permit the attainment or maintenance of water quality which would allow recreational activities, and comply with State water quality standards designed to protect recreational water uses.

44 Fed. Reg. 34784, 34805 (June 15, 1979). As to the BIP requirement, EPA noted in the same preamble that "compliance with applicable State water quality standards is essential and required by the statute." Id.

The necessity of analyzing information related to attainment of water quality standards as part of the BIP and recreation determinations is retained in the current regulations at 40 CFR 162.62, whose title mirrors the language of section 301(h)(2). The regulation requires attaining water quality standards (125.62(a)(1)(i)); attaining or maintaining water quality which assures protection and propagation of a BIP (125.62(c)(1)); a demonstration of the existence of a BIP (125.62(c)(2)); attaining or maintaining water quality that allows for recreational activities including swimming, diving and fishing (125.62(d)(1)); and a showing that there are no restrictions on recreational activities near the outfall (125.62(d)(2)). The preamble to EPA's current regulations states that section 125.62 implements section 301(h)(2). 56 Fed. Reg. 2815, 2822 (Jan. 24, 1991).[38]

2. The Water Quality Criteria in Approved Water Quality Standards Must Be Met to Assure the Protection and Propagation of a BIP and the Safety of Waters for Recreation.

Evaluating information regarding attainment of water quality standards is critical to analysis of water quality to protect of aquatic life and allow recreation. The purpose of water quality standards is to identify designated uses of the water and water quality criteria to protect those uses. CWA section 303(c)(2)(A) directs that standards "shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of [the CWA]." 33 U.S.C. § 1313(c)(2)(A). Implementing regulations identify such statutory purposes to include the provisions of CWA section 101(a)(2), specifically, to provide for the protection and

[38] Inclusion of section 301(h)(9) in 1987, specifically requiring compliance with water quality standards, cannot be read to exclude water-quality analysis from the BIP and recreation requirements in section 301(h)(2), as it would be strange indeed if adding an explicit requirement in (h)(9) were read as watering down the requirement of (h)(2). Nor does analyzing water-quality considerations under section 301(h)(2) make section 301(h)(9) superfluous, as (h)(9) requires compliance with all water quality standards, not just those protecting aquatic life and recreation, e.g., standards designed to protect such uses as agricultural, industrial, and navigation (see, e.g., 40 CFR 131.10). For example, Hawaii includes other uses such as scientific and educational purposes, aesthetic enjoyment, food processing, agricultural and industrial water supplies, shipping, navigation. Hawaii water quality standards, 11-54-3. Doc. S.19.01, p. S-19-9.

propagation of fish, shellfish, and wildlife and to provide for recreation in an on the water, in the designation of uses. 40 CFR 131.6(a). Water quality criteria within water quality standards must be sufficient to protect the designated uses. 40 CFR 131.6(c). Regarding specific water quality standards, bacteria criteria are set at levels deemed necessary to protect swimmers from gastrointestinal disease; if such criteria are not being met, then the discharge by definition is interfering with the attainment or maintenance of water quality that allows recreation. Hawaii's chlordane and dieldrin water quality criteria are designed to protect persons who consume fish from Hawaii's waters; if those criteria are not being met, then by definition the discharge is interfering with the attainment or maintenance of water quality that allows recreational fishing. Criteria and procedures to protect against excessive toxicity are adopted to protect aquatic organisms from death or sublethal effects, such as reduced growth or reduced ability to reproduce. Nutrient criteria, including Hawaii's ammonia nitrogen criteria, are promulgated to protect against excessive nutrient enrichment, which can lead to eutrophication and oxygen depletion.[39] If these criteria are not being met, the discharges are interfering with the attainment or maintenance of that water quality which assures the propagation and protection of a BIP.

As emphasized by the Region in its response to comments, water quality standards do not contemplate waiting for documented evidence of a dead zone, fish advisories, beach closures, or other epidemiological problems before actions are taken: They are designed both to improve substandard waters and to maintain good water quality before such events happen, just as the CWA itself, and Section 301(h)(2) in particular, are designed to "attain and maintain" water quality protective of aquatic life and recreational activities in and on the water. Doc. H.1.5, p. H-

[39] In a eutrophic situation, an increased concentration of nutrients promotes algal blooms, which can result in depleting the oxygen concentration in the waterbody so severely that other aquatic life cannot be maintained. See Doc. H.1.2, p. H-01-78.

01-239; Doc. H.1.6, p. H-01-273, 276.

Thus, both CWA section 303 – which requires the promulgation of water quality standards to protect uses such as maintenance of aquatic life and allowing recreation – and section 301(h)(2) itself, with its emphasis on attaining and maintaining water quality, dictated that the Region consider water quality standards attainment in its BIP and recreation analyses. EPA's regulations, moreover, have reflected the importance of water quality standards in the BIP and recreation analyses from their inception. The Region reasonably considered CCH's failure to demonstrate its discharges would meet water quality standards designed to protect aquatic life and recreation as a critical part of the BIP and recreation analyses.

III. Region 9 Correctly Analyzed CCH's Proposed Discharge for the Honouliuli Facility and Adequately Responded to Comments Regarding Disinfection.

Water quality standards for bacteria protect human health by limiting pathogens in waters designated for recreational use, thereby reducing the risk of illness resulting from exposure.[40] Hawaii has designated its coastal waters for primary contact recreation. HAR 11-54-2(c)(2); 11-54-6(b)(3)(B); 11-54-6(c)(1)&(2), Doc. S.19.1, p. S-19-9, 30, 32. Bacteria criteria applicable to Hawaii's marine waters within 300 meters (1000 feet)[41] of shore were promulgated by the State, whereas criteria for waters beyond 1000 feet were promulgated by EPA for Hawaii under the 2004 Beaches Environmental Assessment and Coastal Health (BEACH) Act rule, because Hawaii did not have water quality criteria for bacteria that applied to those waters. Doc. H.1.2, p. H-01-48. In its 301(h) determination, the Region analyzed several years of data from the Honouliuli facility and found that the facility consistently exceeded the BEACH Act criteria –

[40] As discussed above, the water quality standards are actually written in terms of bacterial indicators, in this case enterococcus. For convenience, they are referred to as water quality standards for "bacteria" in this brief.

[41] The Hawaii standards are written as "300 meters (one thousand feet)." Doc. S.19.01, p. S-19-47.

which were based on EPA's recommended *Ambient Water Quality Criteria for Bacteria* (1986) -- at both ZID and ZOM monitoring stations.[42] (H-01-61)

CCH now argues that the Region should have considered whether the Honouliuli facility could meet bacteria criteria if the effluent were disinfected. There was simply no reason, however, for the Region to consider disinfection in its 301h analysis for Honouliuli. Although CCH had long known its Honouliuli discharge routinely exceeded EPA's recommended *Ambient Water Quality Criteria*, and the subsequently-promulgated identical BEACH Act criteria applicable to the coastal recreation waters into which the Honouliuli plant discharges, it did not propose disinfection in its initial renewal application, or in any of the subsequent revisions and clarifications to the application. Nor did it submit detailed information required by EPA's section 301(h) regulations at 40 CFR 125.62(e) to support an improved discharge.

CCH submitted its original renewal application for the Honouliuli facility in 1995 and updated it in 2000. Doc. H.21.1, H.12.5. When the original renewal application was submitted in 1995, the facility was solely a primary-treatment plant. Subsequently, the facility added some secondary treatment, and in 2003 the Region recommended that CCH update its application to reflect changes that had occurred since submittal of the original application. Document H.2.6. On August 30, 2004 CCH submitted a revised application to incorporate these changes. On reviewing the revised application, the Region found that since the facility was discharging varying amounts of primary-, secondary-, and even tertiary-treated sewage, it was unclear on what discharge scenario CCH was basing its application for the renewed 301(h) variance.

[42]Although the BEACH Act criteria had not been promulgated as water quality standards for Hawaii during most of the term of the current permit, and were not required permit conditions, the Region compared discharges under the current permit with the now-applicable criteria in its analysis of whether they would be met under a renewed modified permit. The bacteria standards and EPA's analysis in the Honouliuli decision are discussed in more detail in Sec. IV below.

Therefore, on December 14, 2004, the Region wrote to CCH, asking it to clarify the intended discharge scenario. Document H.12.10. CCH's response, dated April 15, 2005, included six possible discharge scenarios involving various levels of treatment. Document H.12.13.

None of these submissions -- the original renewal application, the 2000 update, the 2004 amended application, or the 2005 response to the clarification letter -- included disinfection of the effluent as part of the proposed discharge. Indeed, the 2004 amended application specifically stated the discharge "will have no final effluent disinfection." Doc. H.12.8, p. H-12-1592.[43]

Nor did CCH at any time submit the types of information that would have been required had it proposed an improved discharge through disinfection – for example, a demonstration that the improvements be "thoroughly planned and studied and can be completed or implemented expeditiously"; detailed analyses projecting changes … in the applicant's discharge which are expected to result from proposed improvements or alterations"; and detailed analysis of how the planned improvements would comply with the requirements to meet water quality standards and not interfere with water quality supporting a BIP and recreation. 40 CFR 125.62(e).

In the tentative 301(h) decision, Region 9 analyzed CCH's discharge using the discharge scenarios presented by CCH in its April 15, 2005 letter. The Region had informed CCH that it would be analyzing the proposed discharge based on the "worst-case scenario" of discharging only primary-treated sewage, based on statements in CCH's application and in a meeting with

[43] In the August 2004 revised application, submitted prior to the BEACH Act promulgation (but subsequent to the proposal of the rule on July 9, 2004), CCH discussed meeting bacteria water quality standards only in terms of the state standards applying within 300 meters (1000 feet) of shore. Doc. H.12.8, p. H-12-1592. The Region subsequently called CCH's attention to the BEACH Act rule, and indicated that CCH would have to demonstrate its discharges would comply with BEACH Act criteria. Doc. H.12.10. CCH's response on April 15, 2005 indicated it would be discussing applicability of the BEACH Act criteria in Hawaii with HDOH. Doc. H.12.13, p. H-12-2976. Region 9 also wrote to HDOH on December 15, 2004 (Doc. H.14.2, p. H-14-23) to confirm EPA's understanding of the bacteria water quality standards currently in place, including the BEACH Act criteria, in Hawaii. HDOH responded by letter dated September 6, 2005, and did not disagree with the Region's understanding. Doc. H.14.3, p. H-14-26.

the Region [Doc. H.12.10], and CCH had not objected. Since nearly all the available data were from the current, better discharge, however, they were the data the Region reviewed. Doc. H.1.2, p. H-01-101. The Region did not conduct its analysis based on the possibility of disinfecting the effluent, nor did CCH ask it to. While CCH now claims it "proposed" disinfection, Pet.Br. at 34, it does not even allege that such a proposal was contained in any of the iterations of its application, nor that it even attempted to meet the requirements for an improved discharge in 40 CFR 125.62(e).

A. The Region Fully Responded to Comments.

CCH commented on the tentative decision as follows:

> EPA is … ignoring the fact that bacterial concentrations can be controlled through disinfection … CCH can accomplish effective disinfection of the current HWWTP effluent without secondary treatment.

Honouliuli comment C21, Doc. H.1.5, p. H-01-188.

Region 9 responded as follows:

> EPA is aware that bacterial concentrations can be addressed through disinfection. In fact, in the 2007 Sand Island tentative decision, EPA recognized that the ultraviolet disinfection unit can adequately disinfect the SIWWTP effluent, so long as the system is adequately operated and maintained. However, EPA disagrees with CCH's comment that denial of its 301(h) variance request due to failure to meet bacteria standards is inappropriate, 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. …

Response to Honouliuli Comment C21 [Doc. H.1.5, p. H-01-189]. The Region also noted that EPA regulations do not allow applications for permit renewal to be revised in most circumstances subsequent to a tentative decision, citing 40 CFR 125.59(d)(5), and that the

conditions under which additional information can be submitted under 40 CFR 125.59(d)(3) and 125.59(g) do not apply, as CCH has been aware for several years that it would not be able to meet the new criteria for bacteria. Id.

To the extent CCH contends that the Region inadequately responded to CCH's comments during the public comment period, such an assertion is belied by the record, as discussed above. The Region clearly indicated in its responses that it was not questioning that disinfection may be effective, but explained that disinfection was not included in the proposed discharge requested by CCH in its application and subsequent submissions. To the extent that the comments submitted to the Region were meant to suggest more, that was not clear to the Region at the time, nor is it clear from the comments themselves.[44]

B. CCH Did Not Even Attempt to Comply With the Regulations Applicable to Planned Alterations or Improvements to Discharges.

In its brief, CCH claims that EPA did not adequately explain why it would not consider disinfection for the Honouliuli facility. It asserts that in comment C5.3 (Doc. H.1.5, p. H-01-168), "CCH asked Region 9 to consider a disinfection system like Sand Island's as the appropriate remedy for any bacteria exceedances at the Honouliuli Plant." CCH states that it "acted diligently in proposing disinfection as a solution, and its proposal was supported by 'additional information it was previously not able to provide despite diligent efforts.'" Pet. Br. at 34. CCH now appears to be calling the comment on the tentative decision "a proposal." Pet. Br. at 35. Even if the comment could be considered a "proposal," however, it does not demonstrate

[44] As stated by the EAB, "the permit issuer … need not guess the meaning behind imprecise comments." *In re Dominion Energy Brayton Point*, 12 EAD .A.D. 490, 510 (EAB 2006), citing *Westborough*, 10 E.A.D. at 304, and *Steel Dynamics*, 9 E.A.D. at 230.] Comments need to be raised during the public comment period to give the Region an opportunity to address potential problems before the permit becomes final, thereby promoting the Agency's longstanding policy that most permit issues should be resolved at the regional level. *Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97, 116-7 (EAB 2005). The EAB has often denied review of specific issues raised on appeal that the commenter did not raise with requisite specificity during the public comment period. Id.

even an attempt to satisfy the regulatory requirements for proposing an improved discharge in a section 301(h) application.

EPA's regulations detail what an applicant must do to support a proposal for an improved discharge. If CCH were to propose disinfection at Honouliuli, that would be considered an improved discharge (40 CFR 125.58(i)), and the 301(h) regulations at 40 CFR 125.62(e) specifically address what an applicant must submit in its application to support an improved discharge:

> (1) A demonstration that such improvements or alternations have been thoroughly planned and studied and can be completed or implemented expeditiously;
>
> (2) Detailed analyses projecting changes … in the applicant's discharge which are expected to result from proposed improvements or alterations; … and
>
> (4) A detailed analysis of how the applicant's planned improvements or alternations will comply with the requirements of paragraphs (a) through (d) of this section [to meet water quality standards and not interfere with water quality supporting a [BIP] and recreation].

As discussed below, CCH did not submitted a proposal for disinfection at all, much less one that met these requirements, nor do Petitioner even allege that this was done.

C. CCH Did Not Request to Revise its Application or Submit New Information.

Throughout its brief, CCH asserts that it "proposed" disinfection, suggesting that its comments during the public comment period should have been treated as a request to amend its application – or an amendment itself. Pet. Br. at 13, 34. This was certainly not apparent from the comments, especially given EPA's clear regulations on how precisely to amend an application, which were noted by the Region in its response. If CCH had wanted to invoke either 40 CFR 125.59(d) or 125.59(g), it could have done so, by submitting a letter of intent to the Regional Administrator under 125.59(f)(2)(A), or, under 125.59(g)(2), submitting "additional information on current/modified discharge characteristics," a demonstration that CCH had "made

a diligent effort to provide such information with their application and were unable to do so," and "a plan of study, including a schedule, for data collection and submittal of the additional information." It would not have buried its request in a comment letter.[45]

An applicant for a Section 301(h) variance needs to submit a clear and complete application. It is not up to EPA to guess what a discharger is proposing. Nor will EPA consider alternative discharge proposals. Indeed, when EPA was writing its first 301(h) regulations,

> A number of POTWs…. indicated that they intended to apply for a section 301(h) modification based on several alternatives (e.g. several possible outfall locations or treatment systems) …. EPA will not consider alternatives to the treatment system included in a POTW's application, nor will it allow applicants to submit other options. The Act and its legislative history make it clear that the applicant must have thoroughly planned and studied the alternatives and must demonstrate that it is entitled to a modification.

44 Fed. Reg. 34784, 34793. (June 15, 1979). "[A]pplicants may submit only one proposal, not alternative proposals." Id. at 34785.

In amending the regulations in 1982, EPA again emphasized the need for an applicant to submit a clear application:

> [I]n order to assess compliance with the 301(h) criteria, EPA must have a specific proposal to evaluate…; submissions of multiple options or revisions can create confusion as to what the applicant is actually proposing. Accordingly, EPA does not agree that revisions to applications should be allowed on an informal basis, and will continue to require compliance with the formal procedures ….

47 Fed. Reg. 53666, 53668 (Nov. 26, 1982).

D. CCH Was, or Should Have Been, Aware of the Need to Addresses Exceedances of Bacteria Criteria

While acknowledging that CCH "obviously knew about disinfection and technically

[45] CCH may argue that the Region's reference to 40 CFR 125.59(d) and 125.59(g) in the responses to comments constitutes an understanding that CCH was attempting to amend its application. Such an argument would only make sense if CCH could somehow simply ignore the procedures in 40 CFR 125.59 to amend its application, along with the requirements in 40 CFR 125.62(e) to propose an improved discharge.

could have proposed it in the Honouliuli variance application" (Pet. Br. at 34), CCH now attempts to excuse its failure to do so because "when CCH originally applied for renewal, and amended its application in August 2004, there were no bacteria water quality standards in effect beyond 1000 feet from shore." Pet. Br. at 36. When CCH submitted its revised application on August 30, 2004, however, CCH obviously knew about the BEACH Act regulations, which had been proposed on July 9, 2004. Doc. H.14.4. Indeed, CCH had specifically commented on the proposed regulations concerning expected difficulties in meeting the proposed standards at its facilities in general, and in particular at the Honouliuli (Barbers Point) facility.[46] Doc. H.14.6. When the BEACH Act regulations were adopted in November 2004, CCH could easily have contacted the Region to request time to amend its application. And CCH's April 2005 response to the Region's specific request in December 2004 to clarify the discharge scenarios for which it was requesting the variance presented yet another opportunity to include a disinfection proposal.

E. Waiting for Sand Island Data Does Not Excuse Failure to Propose Disinfection.

Another justification proffered by CCH is that when it submitted the Honouliuli application, it did not have the data on UV disinfection from the Sand Island operations that would support proposing a similar system for Honouliuli. Pet. Br. at 35. However, when CCH applied for the renewed variance at Sand Island, it did not have disinfection data either, and the Region, by letter dated December 16, 2004, told CCH the Region would have to begin analysis of the Sand Island 301(h) renewal application, even though operation of the disinfection unit had not yet begun.[47] Doc. S.12.7. Moreover, the fact that the UV disinfection at Sand Island may be

[46] CCH protests that its comments on the BEACH Act rule were not meant to concede that the Honouliuli facility would not meet the proposed standards. Pet. Br. at 34-5, n. 20. Even accepting CCH's current parsing of its 2004 BEACH Act rule comments, the comments clearly indicate CCH's concern with the new criteria and the possibility that CCH would have to, in its own words, "unnecessarily have to upgrade existing treatment processes or install new disinfection facilities." Doc. H.14.6, p. H-14-63.

[47] The Sand Island permit had expired on November 3, 2003. Doc. S.1.2, p. S-01-14.

"experimental" does not foreclose the possibility of CCH proposing more traditional disinfection, such as with chlorine, as was done, for example, by the San Diego wastewater treatment facility at Pt. Loma.[48] Doc. H.21.135, p. H-21-1533-4. Indeed, references to disinfection in the current permit, as discussed below, all refer to chlorination. Doc. H.12.3, p. H-12-1136; Doc. H.12.4, p. H-12-1228.[49]

When EPA developed its first Section 301(h) regulations, it acknowledged that making the necessary 301(h) showings based on planned improvements would be difficult. Nevertheless, "[t]he Act clearly requires that the necessary showings under section 301(h) be made at the time of application." 44 Fed. Reg. 34784, 34790 (June 15, 1979). As emphasized by EPA in adopting its first 301(h) regulations in 1979, "[T]he legislative history of the Act makes it clear that the relief afforded by section 301(h) was intended for those communities which had accumulated, or could accumulate on a timely basis, the information necessary to make their case for a modification." 44 Fed. Reg. at 34791. Based on "Congress' objective that the section 301(h) process not be protracted," EPA emphasized in its first 301(h) regulations that "EPA will not allow the section 301(h) process to be used as a mechanism for delay." 44 Fed. Reg. at 34794. Thus, it is entirely contrary to Congress's intent to suggest, as does CCH, that

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[48] In its brief (Pet.Br. at 62), CCH references the San Diego (Pt. Loma) tentative 301(h) decision issued by Region 9 in December 2008, in which the Region tentatively found the Pt. Loma discharge could meet bacteria water quality standards based on an improved discharge to disinfect the effluent. As is apparent from the Pt. Loma tentative decision, San Diego's plan to disinfect -- including development of a prototype plan and layout and installation of a prototype disinfection facility, studies to ensure levels of chlorination byproducts and whole effluent toxicity would comply with State standards, and evidence of State approval to install the facility -- was an example of the type of concretely planned improvement required by EPA's regulations. [Doc. H.21.135, p. H-21-1533-4.]

[49] In its brief, CCH states that the current (1991) Honouliuli permit provides that if the results of the Sand Island monitoring program indicate that the Sand Island effluent needs to be disinfected, then disinfection of the Honouliuli effluent shall also be required. Pet. Br. at 36. The point of this quotation is unclear in the context of this proceeding. The 1991 Honouliuli permit was referring to the Sand Island monitoring and/or permit under way at that time. In 1998, Sand Island received a new permit which did require disinfection. In retrospect, this suggests that Honouliuli should have begun planning for disinfection in 1998.

until Region 9 rejected its challenges to the findings of bacterial violations, CCH had no need to propose disinfection. Pet. Br. at 36.

As noted above, the words of section 301(h) itself put the burden on the discharger to demonstrate, to the satisfaction of EPA, that its discharge will meet water quality standards and will not adversely affect recreation. The record is replete with evidence that CCH was well aware that bacteria was a problem at Honouliuli – CCH's BEACH Act comments (Doc. 14.6, p. H-14-63), EPA's letter to CCH in 2004 (Doc.H.12.10), the concerns evident in the existing Honouliuli permit and 1988 tentative decision (discussed below), plus years of data showing exceedances.[50]

F. Nothing in CCH's Current Permit Justifies Failure to Propose Disinfection.

In its comments on the March, 2007 Honouliuli TDD, CCH noted that the Region had stated in the 1988 TDD for the existing Honouliuli permit that that bacteria concentrations needed to be frequently monitored, "and effluent disinfection be initiated if unacceptable high concentrations occur within these areas." Honouliuli comment C5.3, Doc. H.1.5, p. H-01-168, However, the fact that the current Honouliuli permit mentions disinfection certainly cannot be interpreted to mean that CCH's renewal application did not have to propose disinfection.[51]

[50] As discussed below, CCH is challenging the Region's Honouliuli decision as to bacteria on the ground that geometric means were calculated based on only one sample in a month. Regardless of how many samples were averaged to calculate the geometric mean, however, the monitoring data showed sufficient exceedances to put CCH on notice that it was not adequately controlling bacteria. For example, in 2006 – over a year after the BEACH Act rule went into effect – 83% of the samples at bottom depths in the vicinity of the ZID and ZOM exceeded the geometric mean, including every sample taken at certain monitoring stations. Doc. H.1.7, p. H-01-376. If CCH thought it was meeting the geometric mean, moreover, it could have taken additional samples, as it did in 2007-2008 – when the data, based on several samples per month, clearly indicated violations. See Honouliuli final decision (Doc. H.1.2, p. H-01-52 through 56, and section IV on geometric mean below.

[51] CCH states that disinfection was "specifically provided for in CCH's existing permit." Pet. Br. at 13, 36. The 1998 Honouliuli tentative decision, which resulted in the current (1991) permit, stated that bacteria needed to be monitored, and "effluent disinfection be initiated if unacceptable high concentrations occur…" [Doc. H.12.3, p. H-12-1136]. This was incorporated into the 1991 permit in what appears to be a contingency provision that HDOH could determine that disinfection of the effluent was necessary, based on the permittee's ability to meet current State water quality standards, and also taking into consideration the results of monitoring at Sand Island, stating that if

Rather, it is further evidence that CCH knew of the potential problem and should have taken responsibility for determining a solution, performing whatever preliminary testing was necessary, adequately planning an improvement, and clearly including it as part of an improved discharge in its application. CCH may argue that if the Region had granted the variance and issued a new modified permit, it could have addressed the bacteria problem by including a disinfection requirement in the same manner as it did in 1991. The 1991 situation, however, was entirely different. At that time, there were no sampling results showing exceedances of bacteria standards (which, at that time, only applied up to 1000 feet from shore), and the references to chlorination were aimed at putting CCH on notice of what it might have to do if future samples indicated a problem. Nor can it be assumed that chlorinating effluent is something that can be done easily without a detailed plan, as is evident from the measures taken by San Diego to prepare for disinfection through chlorination at the Pt. Loma plant (see footnote 48).

G. The Region's decision-making was reasonable.

The Region was not arbitrary and capricious due to its "disparate treatment of the same evidence" in the Honouliuli and Sand Island decisions (Pet. Br. at 32). The Sand Island application and analysis were entirely different. The Sand Island application clearly included disinfection. See Doc. S.12.4, p. S-12-551 and S-12-556. For Sand Island, CCH performed analysis and a pilot study of disinfection [Docs. S.19.32, S.19.33], and when the Region was developing the 301(h) decision, there was monitoring data that demonstrated compliance with the bacteria criteria. As stated above, it is the discharger's responsibility, not EPA's, to determine how best to meet the 301(h) criteria, evaluate alternatives, thoroughly plan improvements, and submit a clear application. Nor is it "arbitrary and capricious to require CCH

"disinfection of the Sand Island WWTP effluent shall be required, disinfection of the Honouliuli WWTP effluent shall also be required." Doc. H.12.4, p. H-12-1228, n. 20.

to install secondary treatment when the objective data point to an equally effective, but significantly cheaper, solution" (Pet. Br. at 37). It is not up to the Region to dictate how a discharger will meet the 301(h) criteria. What would be arbitrary and capricious would be for the Region to ignore extensive data showing that bacteria water quality standards will not be met by the Honouliuli discharge proposed by CCH.

IV. Region 9 Correctly Found That the Honouliuli Discharge Could Not Meet Bacteria Water Quality Standards and Fully Responded to Comments Regarding the Geometric Mean.

As discussed above, water quality standards for bacteria protect human health by limiting pathogens in waters designated for recreational use, thereby reducing the risk of illness resulting from exposure.[52] At issue in this proceeding are the bacteria criteria promulgated by EPA for Hawaii in the 2004 BEACH Act rule, which was based on recommended EPA bacteria criteria issued in 1986 (see discussion in section III above and in earlier section regarding Water Quality Standards). The BEACH Act criteria include both geometric mean and single sample maximum components. The geometric mean criterion, applicable in Hawaii's waters more than 300 meters (1000 feet) from shore is 35 colony forming units (cfu) per 100 mL.

In its 301(h) decision, Region 9 found that the Honouliuli facility, which discharges into waters more than 300 meters (1000 feet) from shore, could not consistently achieve the water quality criteria promulgated in the BEACH Act rule. Doc. H.1.2, p. H-01-61, 62. Based on data submitted by CCH, the Region found exceedances of both geometric mean and single sample maximum criteria. Doc. H.1.2, p. H-01-52 through 61. CCH does not contest the Region's findings regarding the single sample maximum. As to the geometric mean, CCH's objection is that for many time periods, the geometric mean criterion should not be considered because

[52] The water quality standards are actually written in terms of bacterial indicators, in this case enterococcus. For convenience, they are referred to as water quality standards for "bacteria" in this brief.

during those periods, there was only one sample per month (or, for some years, per quarter). Basically, CCH is asserting that a geometric mean cannot be computed when there is only one number to average.

As discussed below, the Region simply could not ignore the geometric mean criterion despite the infrequent sampling. It had to analyze whether CCH's proposed discharge would meet this criterion, and it could not ignore existing data in its analysis. Perhaps more important, however, is that during the most recent years -- 2007-2008 -- CCH conducted more frequent sampling – three to six sampling events per month – so during those years, the Region could easily calculate a monthly geometric mean based on multiple samples. And these geometric means showed exceedances of the 35 cfu criterion that were both frequent and often quite large. For example, geometric means at ZID stations at bottom depths were as high as 494 cfu in 2007, and as high as 1189 cfu in 2008 (Honouliuli FDD, Tables 9a and 9b, p. H-01-126, H-01-127].

A. CCH's Data Showed Exceedances of the Geometric Mean Criterion Throughout the Period.

In the Honouliuli tentative decision, EPA analyzed monitoring data submitted by CCH from 1991 through 2006 and found that those discharges would have exceeded the current bacteria criteria promulgated under the BEACH Act throughout the 15-year period at both the ZID and ZOM monitoring stations.[53] During 2005, for example, 53% of the geometric means calculated for bottom depths[54] at the ZID, ZOM, and near-ZOM stations exceeded the geometric

[53] In its 301(h) decision, the Region analyzed whether CCH's proposed discharges would comply with water quality standards in a renewed modified permit. Although the BEACH Act criteria were not in effect during much of the terms of the current permits and were not included as limits in the permits, it will be necessary for CCH to comply with them in future permits. Since CCH is not proposing an improved discharge for the Honouliuli facility, the Region compared enterococcus concentrations in past discharges with the currently applicable criteria as part of the analysis of whether standards would be met under a renewed modified permit. Doc. H.1.2, p. H-01-59. As discussed above, the BEACH Act criteria are based on EPA's 304(a) recommended criteria published in 1986.

[54] Samples were taken at three depths, which were analyzed separately because the plume may not impact all depths at the same time. Doc. H.1.7, p. H-01-376. However, the Region also calculated geometric means combining the

mean criterion; in 2006, the corresponding percentage of exceedances was 83%.[55] Doc. H.1.7, p. H-01-375, 376.

During the 1991-2006 period, monitoring closer to shore (where State bacteria criteria applied, and were included as permit limits) was conducted several times per month, and monthly geometric means for those locations were generally based on 5-6 samples. Doc. H.1.2, p. H-01-50, 51. At the ZID and ZOM stations farther from shore, however, monitoring was only monthly or quarterly. It was still necessary to analyze whether the discharges could comply with the geometric mean criterion, so the Region compared the monthly or quarterly samples to the geometric mean criterion.

Additionally, for the more recent years analyzed in the tentative decision (2005 and 2006), the Region also calculated annual geometric means. Although this is not a standard way of calculating geometric means, the Region did this in order to calculate a longer-term average. This average also showed exceedances of the 35 cfu/100mL geometric mean criterion. For example, calculated on a calendar year basis, the geometric mean criterion was exceeded in 2005 for bottom samples at six of the nine ZID, ZOM, and near-ZOM monitoring stations, and in 2006, at all of them. Doc. H.1.7, p. H-01-376. As an example of the magnitude of the exceedances, in 2006, the annual geometric means for bottom samples ranged from 74 to 727 colony-forming units (cfu) enterococci per 100 milliliters, compared to the water quality criterion of 35 cfu/100 ml. Id. Thus, this averaging method supported the findings generated on a monthly basis. Doc. H.1.2, p. H-01-57.

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samples at the three depths and found there still would be exceedances of the standards. Doc. H.1.7, p. 50-1.H-01-375, 376.

[55] It was not expected that the plume would necessarily impact all ZID stations at the same time, as ocean currents may push the plume in a specific direction. Doc. H.1.7, p. H-01-375.

In the final decision, the Region also analyzed data submitted by CCH during 2007 and 2008, subsequent to the tentative decision. During these two years CCH had increased its monitoring, and as a result monthly geometric means could be calculated based on three to six samples per month. The final decision found that at the ZID monitoring stations, the geometric mean standard was exceeded in 31 of 40 geometric means calculated on a monthly basis for bottom depths, 8 of 40 geometric means at the middle depths, and three of the 40 geometric means calculated for the surface samples. Doc. H.1.2, p. H-01-54. Exceedances in 2008 were similar. For example, 31 of the 40 geometric means calculated on a monthly basis for bottom depths for the ZID stations exceeded the standard. Doc. H.1.2, p. H-01-57. There were also numerous exceedances of the geometric mean standard calculated on a monthly basis at ZOM stations, and exceedances of the single sample maximum standard during both years. Doc. H.1.2, p. H-01-54, 56. CCH does not challenge the geometric means that were calculated during these years and that were based on three to six samples per month.

B. The Region Fully Responded to Comments.

CCH commented on the Honouliuli tentative decision that the Region should not have analyzed compliance with the geometric mean standard for time periods when there was only one sample per month, arguing that Hawaii water quality standards specified that geometric means should be calculated based on five samples taken within 25 to 30 days of one another. See Honouliuli Comments C16 and C18, Doc. H.1.5, p. H-01-180, 183.

In its response, the Region emphasized that the EPA-promulgated bacteria criteria applicable to the receiving waters included both a geometric mean value and a single sample maximum value (Doc. H.1.5, p. H-01-181). In other words, CCH's discharges need to meet both of those criteria, and the Region could not simply ignore the geometric mean criterion. As

discussed below (Sec. IV.C.1), the BEACH Act criteria themselves do not have a requirement for the number of samples that are necessary for calculating a geometric mean. Therefore, in evaluating the single monthly (or quarterly) samples, the Region used the Hawaii procedures – which are used in calculating geometric means to determine compliance with the State bacteria criteria applicable within 300 meters (1000 feet) of shore -- as guidance. In responding to comments, the Region noted that in analyzing the geometric mean, it used as guidance two parts of the Hawaii water quality standards, one of which indicated the geometric mean should be based on not less than five samples within a period of 25 to 30 days, the other indicating that if sampling is less than five samples per twenty-five to thirty days, "the geometric mean of these samples taken during the thirty-day period" shall not exceed the standard. Hawaii standards at HAR 11-54-8, Doc. S.19.1, p. S-19-46. Thus, where there were fewer than five samples, the Region based the geometric mean calculation on the samples available, even if there was only one. The Region noted, "If CCH had monitored more frequently, more data would have been available for development of a geometric mean and subsequent assessment against the geometric mean criterion. Lack of data should not limit EPA's assessment when specific State criteria address such a situation." Honouliuli response to comment C16, Doc. H.1.5, p. H-01-180.

The Region also discussed in its responses that in 2007 and 2008, CCH conducted more frequent monitoring by collecting and analyzing three to six samples per month. These data had not been available to the Region when it issued the Honouliuli tentative decision in March 2007. In the process of responding to comments and as a check on the findings in the tentative decision, the Region calculated monthly geometric means using the 2007-2008 data, found a high frequency of exceedances of the geometric mean standard, and concluded that "the discharge would likely often exceed the water quality criterion, regardless of the frequency of

monitoring." Response to Honouliuli comment C18, Doc. H.1.5, p. H-01-183. CCH acknowledges in its brief that the Region "placed particular importance" on the 2007-2008 exceedances, but omits reference to the fact that the geometric mean calculations for those years were based on multiple samples per month. Pet.Br. at 54.

The Region also noted that the Hawaii Department of Health (HDOH) had not contradicted the Region's interpretation in the tentative decision of the State's geometric mean provisions. Response to Honouliuli comment C16, Doc. H.1.5, p. H-01-180.

C. The Region Properly Analyzed CCH's Data to Determine a Geometric Mean for Enterococci.

The text of the BEACH Act regulation does not establish a minimum sample size for determination of a geometric mean, though the associated preamble does offer suggestions and non-binding guidance. The Region's consideration of datasets containing only single values was not unreasonable. Regardless, however, data sets gathered in 2007 through 2008 do contain three to six monthly samples and demonstrate that the Honouliuli effluent does not meet the geometric mean value. Therefore, CCH's arguments on this point are purely academic.

In its EAB petition, CCH contends that Region 9 failed to adequately respond to CCH's comments because the Region erroneously read Hawaii's water quality standard, "which has a separate limitation for single samples" and, in the provision relied on by the Region dealing with months with less than five samples, the Hawaii standard refers to "these samples" in the plural.[56] Pet. Br. at 15. CCH also labeled Region 9's finding "arbitrary and capricious because it ignores the plain purpose of geometric mean measurements" of gaining a more representative sample over a longer period of measurement. Pet. Br. at 15, 54. Finally, CCH quotes nonbinding

[56] CCH cites a 1991 EPA staff document that ties geometric means to five samples. Pet.Br. at 55, n.20. As discussed above, the Hawaii standards do provide for five samples in calculating the geometric mean, but also discuss the appropriate procedure when there are fewer than five samples, which is to calculate the geometric mean based on the samples that exist.

language in the preamble to the BEACH Act rule, where EPA "recognizes the utility of single sample maximums where there are insufficient data (generally fewer than five samples over a given period) to compute a geometric mean …" Pet. Br. at 56, citing 69 Fed. Reg. 67281, 67226 (Nov. 16, 2004).

1. The Federal Water Quality Criterion Applicable in Hawaii Does Not Identify a Minimum Number of Samples on which to Calculate a Geometric Mean for Enterococci.

In promulgating water quality standards for states in the BEACH Act rule, 40 CFR 131.41(c)(2), EPA did not base the geometric mean criterion on a minimum number of samples for calculating a geometric mean. To the extent the preamble to the BEACH Act rule is interpreted to encourage more robust sampling, the Region certainly agrees. The sentence quoted by CCH, however, was not intended to restrict use of the geometric mean, but rather is an excerpt from a section in which EPA is responding to comments that the single sample maximum should be used only for making beach notification and closure decisions, and not for determining whether a water body is impaired. The preamble explains:

> EPA expects that the single sample maximum values would be used for making beach notification and closure decisions. EPA recognizes, however, that States and Territories also use criteria in their water quality standards for other purposes under the Clean Water Act in order to protect and improve water quality. Other than in the beach notification and closure decision context, the geometric mean is the more relevant value for ensuring that appropriate actions are taken to protect and improve water quality because it is a more reliable measure, being less subject to random variation, and more directly linked to the underlying studies on which the 1986 bacteria criteria were based. Nevertheless, the single sample maximum can play a role in identifying potential pollution episodes, especially in waters that are prone to short-term spikes in bacteria concentrations, e.g., waters that may be affected by a combined sewer overflow outfall.

69 Fed. Reg. 67218, 67224 (Nov. 16, 2004). While it may be reasonable for a State to use the single sample maximum when there are fewer than five samples over a given period, EPA also

indicated that this was a decision EPA was leaving to the states:

> EPA agrees that the single sample maximum values in the criteria are best used for making beach notification and closure decisions. However, as noted above, they may, but need not, also play a role in implementing other Clean Water Act programs. Except in the beach notification and closure context, EPA expects that States will determine how to use the single sample maximum criteria in the context of their broader programs implementing the Clean Water Act.

69 Fed. Reg. 67218, 67224-5 (Nov. 16, 2004).

Because the BEACH Act rule does not set a minimum number of samples for calculating a geometric mean, the Region used Hawaii's geometric mean provisions for nearshore waters as guidance and calculated a geometric mean using whatever samples – or sample – were taken during the month. As noted in the response to comments, HDOH did not contradict that approach. Thus, the Region analyzed whether the Honouliuli discharge would meet the single sample maximum and geometric mean standards based on the data that CCH had submitted.

2. Calculation of Annual Geometric Means Reinforced the Conclusion that the Honouliuli Facility Could Not Meet the Geometric Mean Criterion.

The Region went a step further, and as a check on its findings regarding geometric mean exceedances, calculated annual geometric means for those recent periods when only monthly or quarterly samples were available (November 2003-2006). Here, too, the geometric mean was frequently exceeded. Doc. H.1.7, p. H-01-376, 378. In yet another effort to develop a geometric mean based on multiple samples, the Region calculated monthly or quarterly (depending on the available data) geometric means combining data from surface and bottom depths from the same monitoring station – and again found exceedances. Doc. H.1.7, p. H-01-377, 378. While calculating a geometric mean on a calendar year basis is not consistent with Hawaii's standard practice of calculating monthly geometric means (HAR 11-54-8, Doc. S.19.1, p. S-19-46), and averaging samples at depth is not favored because a plume may not affect the surface and bottom

at the same time (Doc. H.1.7, p. H-01-376), these calculations reinforced the conclusion that the facility simply did not meet the geometric mean standard under any approach.

3. Honouliuli's Effluent Exceeds the Geometric Mean Criterion When Evaluating Only Sampling with Three to Six Data Points Per Month.

Even if the geometric means based on monthly or quarterly samples are ignored, moreover, what is left are the 2007-2008 data, when monthly geometric means could be calculated based on three to six samples per month -- and when, again, the data showed numerous exceedances. As discussed above, in 2007 at the ZID monitoring stations, the geometric mean standard was exceeded in 31 of 40 geometric means calculated on a monthly basis for bottom depths, 8 of 40 geometric means at the middle depths, and three of the 40 geometric means calculated for the surface samples. Doc. H.1.2, p. H-01-54. Exceedances in 2008 were similar. For example, 31 of the 40 geometric means calculated on a monthly basis for bottom depths for the ZID stations exceeded the standard. Doc. H.1.2, p. H-01-57. Tables 9a and 9b of the Honouliuli decision, Doc. H.1.2, p. H-01-126, 126, show the geometric means calculated from 2007 and 2008, with exceedances as high as 1189.3 cfr/100mL, compared to the criterion of 35 cfu/100 mL (see entry for February 2008, bottom depths, p. H-01-127).

There were also numerous exceedances of the geometric mean standard calculated on a monthly basis at ZOM stations, and exceedances of the single sample maximum standard during both years. Doc. H.1.2, p. H-01-54, 56. CCH does not challenge the geometric means that were calculated during these years and that were based on three to six samples per month.

D. Geometric Mean Conclusion

The applicant for a 301(h) variance bears the burden of demonstrating that its discharge will comply with all applicable water quality standards, including the geometric mean standard for bacteria. As stated in EPA's response to Honouliuli comment C16 (Doc. H.1.5, p. H-01-

180): "If CCH had monitored more frequently, more data would have been available for development of a geometric mean and subsequent assessment against the geometric mean criterion. Lack of data should not limit EPA's assessment when specific State criteria address such a situation." CCH cannot limit its sampling to once in a month or once in a quarter and now claim the Region erred in calculating the geometric mean using the data it submitted.[57]

It was not arbitrary and capricious to calculate geometric means, even given the limits in the data available at the time of the tentative decision in early 2007; indeed, it would have been arbitrary and capricious to ignore this data and thus essentially ignore the geometric mean standard. When responding to comments and developing the final decision, more recent data were available, and the Region was able to confirm its findings in the tentative decision by analyzing data from 2007-2008, when CCH was sampling three to six times per month. Again, the geometric means exceeded the water quality standard on a regular basis. CCH has not questioned the geometric means calculated for the 2007-2008 time period, nor the Region's findings concerning exceedances of the single sample maximum standard.[58] The Region thus reasonably concluded that CCH had not demonstrated that the Honouliuli discharge would meet the bacteria standards, and the Region adequately responded to comments regarding the geometric mean.

[57] The 1991 Honouliuli permit required less frequent sampling at the ZID and ZOM stations than at the nearshore stations, presumably because at that time Hawaii's water quality standards did not apply to waters more than 1000 feet from shore. Following promulgation of the BEACH Act rule in 2004, CCH could have increased the frequency of sampling at the ZID and ZOM stations if they indeed thought that more frequent sampling was needed to evaluate compliance with the new standards, and as, in fact, was done beginning in 2007. Indeed, in December 2004 the Region specifically pointed out to CCH the necessity of showing ability to comply with the newly-promulgated standards applicable to Hawaii in the BEACH Act rule. Document H.12.10.

[58] Regarding the single sample maximum, see, e.g., Table 11c of the Honouliuli final decision, Doc. H.1.2, p. H-01-130, showing the number and magnitude of single sample maximum exceedances in the samples from bottom depths, even when the less stringent single-sample maximum value of 501 cfu/mL was used in the analysis. See p. H-01-48 regarding the four potential single sample maximum values, and discussion of the 2007-8 data, p. H-01-52 through 56.

V. Region 9 Reasonably Concluded That Discharges From the Honouliuli and Sand Island Plants Would Exceed Hawaii's Water Quality Standards for Toxicity.

In both final decisions, Region 9 found the proposed discharge from the CCH facilities would not meet Hawaii water quality standards for toxicity, also referred to as whole effluent toxicity ("WET"). Doc. H.1.2, p. H-01-77; Doc. S.1.2, p. S-01-62. Additionally, the exceedances of water quality standards for toxicity contributed to the Region's determination that CCH had failed to demonstrate that its facilities' proposed discharges would not interfere with attainment or maintenance of water quality that assures attainment and maintenance of a balanced indigenous population of shellfish, fish, and wildlife ("BIP"). Doc. H.1.2, p. H-01-94; Doc. S.1.2, p. S-01-78. CCH's Water Quality Laboratory tested both facilities' effluents using two different invertebrate test species, a freshwater water flea, *Ceriodaphnia dubia*, and a Pacific sea urchin, *Tripneustes gratilla*. Both facilities' effluents were non-toxic to the freshwater species, *C. dubia*, but repeatedly toxic to the marine species, *T. gratilla*. Doc. H.1.2, p. H-01-70,77; Doc. S.1.2, p. S-01-58, 62. The Pacific sea urchin, *T. gratilla*, is indigenous to the waters in and around the Hawaiian islands; the *C. dubia* is not. Doc. H.1.2, p. H-01-67; Doc. S.1.2, p. S-01-57.

Petitioner does not question that the results from the *T. gratilla* tests indicate exceedances of Hawaii's water quality standards. However, they argue that the Region failed to adequately respond to comments that *T. gratilla* testing protocol should not be used because it is "not sufficiently reliable for determining permit compliance", Pet. Br. at 37, and that some of the results are considered to be toxic are not "biologically significant," even though they may be "statistically significant." Pet. Br. at 49. As discussed below, the *T. gratilla* test has been specified by HDOH in numerous permits in Hawaii for years, in some cases to measure compliance with permit limits, in others to require accelerated testing and evaluation of why

effluent is toxic. Not having formally published the test method or an inter-laboratory study, and use of the test in some permits as a trigger for accelerated testing rather than permit compliance, do not make the test itself, or the results it generates, "unreliable." As to "biological significance," the Region comprehensively responded to all comments, including performance of additional statistical analysis in response to CCH's comments that the test was "too sensitive," as discussed below.

A. Data From Both Facilities' Effluent Showed a Continuing Pattern of Toxicity.

Hawaii's narrative water quality criteria require that all waters be free from toxic substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water. HAR 11-54-4(a)(4), Doc. S.19.1, p. S-19-13. Additionally, Hawaii's water quality standards include a specific toxicity requirement for submerged outfalls, such as those at the Honouliuli and Sand Island facilities. For continuous discharges through submerged outfalls, HAR 11-54-4(b)(4)(A) (Doc. S.19.1, p. S-19-18), requires that the no observed effect concentration ("NOEC"), expressed as a percent of effluent concentration, not be less than 100 divided by the minimum initial dilution.[59]

Both facilities' discharges have demonstrated a continuing pattern of toxicity measured using the *T. gratilla* fertilization test, including toxicity at dilutions two or three times greater than the critical initial dilution. CCH's Water Quality Laboratory, which is highly competent in conducting the *T. gratilla* fertilization test, however, is able to achieve very precise results, i.e.,

[59] As discussed in the Water Quality Standards section above, he NOEC is the highest tested effluent concentration that does not cause an adverse effect on the test organisms. The toxicity of an effluent can also be described using Toxic $Unit_{chronic}$ (TUc), which is a statistical concept defined as the reciprocal of the NOEC (i.e. 100/NOEC). Thus, the higher an effluent's TUc rating, the more toxic the effluent. This is discussed in more detail in EPA's toxics TSD (1991). See Doc. S.2.6, p. S-02-4108 et seq.

demonstrates very low variability. Therefore, EPA conducted additional analysis of some of the individual test results that appeared to be very, very precise, and confirmed that the results were meaningful and demonstrated that the effluents were toxic.

1. Sand Island Tests and Data Analysis

The *T. gratilla* fertilization data for the Sand Island facility showed a fairly continual pattern of toxicity over several years. The existing permit requires monthly testing, and additionally if the monthly sample exceeds a specified limit, CCH must conduct six additional tests over the following 12-week period. The highest toxicity of any sample collected within a given month is reported as a daily maximum for that month. [Doc. S.1.2, p. S-01-58]. For the Sand Island facility, the Region calculated the minimum dilution available (i.e. the critical initial dilution) to be 103:1. [Doc. S.1.2, p. S-01-58]. In order to meet Hawaii's water quality standards for toxicity, WET tests on the Sand Island discharge needed to achieve a "no observed effect concentration" ("NOEC") at or above 0.97% effluent (100 divided by 103 = 0.97). The inverse proportion, the toxic units ("TUc"), would need to be less than 103 TUc. In the tentative decision, the Region found that for the time period between January 1999 and May 2007, WET testing conducted on the Sand Island effluent using *T. gratilla* indicated 72 of the 101 daily maximum results exceeding the 103 TUc value. [Doc. S.1.2, p. S-01-59].

As a check on these results and in response to comments, the Region also analyzed the WET data using percent minimum significant difference ("PMSD"), a measure of test sensitivity that establishes the minimum difference required between a control and a treatment in order for that difference to be considered statistically significant. (p. S-01-157). For results between May 2003 and May 2007,[60] EPA reviewed the data for the samples with PMSDs below the lower

[60] PMSD calculations were made in response to comments, and analyzed only data for tests conducted prior to the tentative decision. Earlier data were not analyzed using PMSD because 2003 is when the CCH laboratory set the

bound established by the CCH laboratory and recalculated the toxicity results accordingly. This analysis still showed exceedances of the WET criterion in 27 of 49 daily maximum results. This is discussed at length in the Region's response to Sand Island comments, Doc. S.1.5, p. S-01-157 through 159.

The Region also analyzed data generated using *T. gratilla* after EPA announced its tentative decision. These data, from June 2007 through October 2008, continued to show toxicity in the Sand Island effluent, exceeding the 103 TUc value in 16 out of the 17 daily maximum results. Overall, for the period between January 1999 and October 2008, 88 of the 118 maximum daily values exceeded the 103 TUc threshold. [Doc. S.1.2, p. S-01-62]. Based on these findings, the Region found in the final decision that the Sand Island facility could not meet Hawaii's water quality standards for toxicity.

2. Honouliuli Tests and Data Analysis

The available WET dataset on the Honouliuli effluent includes fewer values than the Sand Island dataset, but nonetheless shows a continuing pattern of toxicity. Compared to Sand Island, the Honouliuli discharge point allowed for a higher critical initial dilution, 118:1. [Doc. H.1.2, p. H-01-70]. The target value corresponding to that dilution meant that the Honouliuli discharge needed to achieve a NOEC at or above 0.847% effluent, which is equal to or less than 118 TUc. The existing permit included a higher permit limit based on a different dilution calculation, 159.7 TUc. [See Doc. H.1.7, p. H-01-387, and Doc. H.1.2, p. H-01-71]. The *T. gratilla* dataset on the Honouliuli effluent was less robust due to use during certain years of a faulty test procedure, and the permittee's lack of a flow meter, which precluded the gathering of representative "composite" effluent samples for analysis, during certain years. Doc. H.1.2, p. H-

upper and lower bounds on the PMSD. Doc. S.1.5, p. S-01-158; Doc. H.1.2, p. H-01-70 through 72. See also CCH SOPs at Doc. S.6.3, p. S-06-393.

01-70, 71. The Honouliuli permit also requires accelerated testing in the event the WET limit is exceeded, but the acceleration interval for Honouliuli is weekly. [Doc. H.1.7, p. H-01-388; Doc. H.1.2, p. H-01-74; Doc. H.12.4, p. H-12-1179]. Testing continues weekly until six consecutive tests have met the limit. In the event of two consecutive test failures, the permittee is required to submit for approval a plan and schedule to conduct a Toxicity Reduction Evaluation ("TRE").

Though the dataset was more limited, the Region concluded that the proposed Honouliuli effluent would not meet the toxicity standard based on *T. gratilla* data gathered between September 2005 and November 2006, the period on which the Region focused in the tentative decision. During that period, 12 of the 15 monthly average results exceeded the toxicity standard associated with the available dilution, i.e., greater than 118 TUc, and 14 of the 15 daily maximum values exceeded 118 TUc. [Doc. H.1.7, p. H-01-387; Doc. H.1.2, p. H-01-71]. Additionally, three datasets measuring Honouliuli's primary treated effluent demonstrated greater toxicity using *T. gratilla* tests than concurrent tests measuring toxicity in blended effluent. [Doc. H.1.2, p. H-01-73].[61]

After proposing the tentative decision, the Region re-evaluated the Honouliuli data using the PMSD data analysis discussed above. [Doc. H.1.2, p.H-01-74]. Of the 55 tests conducted between September 2005 and November 2006, 41 generated a PMSD above the 3% lower bound criterion previously established by the CCH Water Quality Laboratory. [Doc. H.1.2, p.H-01-75]. Of those 41, 32 exceeded the 118 TUc threshold. Of the 14 tests with a PMSD below the 3% lower bound criterion, 7 tests exceeded the 118 TUc threshold, and therefore were recalculated.

[61] Since 1996, CCH had been mixing portions of highly treated wastewater from secondary and tertiary treatment processes with primary effluent prior to discharge. Test samples were collected downstream of where the separate wastewater streams mixed; thus, the tested effluent took into account the blending. The proposed discharge in the 301(h) application, however, allowed for discharging primary-treated effluent without mixing in the better quality effluent. These three tests were the only ones conducted on Honouliuli's primary effluent, without the addition of more highly treated wastewater streams. Doc. H.1.2, p.H-01-73.

Six of those 7 results remained unchanged after re-calculation based on the PMSD result, and the seventh, while changed, remained in excess of the water quality standard. Thus, the results were not changed based on the PMSD analysis: 12 of the 15 monthly average values, and 14 of the 15 daily maximum values, exceeded the water quality standard. Id.

Also while considering the comments, the Region analyzed data submitted by CCH subsequent to the tentative decision. These subsequently gathered data, collected between December 2006 and October 2008, continued to show exceedances of the 118 TUc threshold. [Doc. H.1.2, p. H-01-76]. Ten of the 21 monthly average results, and 11 of the 21 daily maximum results, exceeded the threshold value. Id. Therefore, the Region reasoned that the Honouliuli effluent did not meet – and the effluent proposed by CCH for a renewed 301(h) modified permit (which potentially would be of poorer quality than the effluent that had been used in the WET tests conducted under the existing permit) -- would not meet the applicable Hawaii water quality standards for toxicity. [Doc. H.1.2, p. H-01-78].

B. The Region Fully Responded to Comments.

CCH commented on the tentative decisions that the sea urchin fertilization test using *T. gratilla* should not be used for regulatory compliance purposes, noting that EPA had not standardized the procedure for nationwide use. [Doc. S.1.5, p. S-01-150; Doc. H.1.5, p. H-01-199]. CCH noted that EPA had not documented inter-laboratory testing of the *T. gratilla* test. [Doc. S.1.5, p. S-01-150]. CCH commented that EPA guidance discourages the development of WET tests for indigenous species. [Doc. S.1.5, p. S-01-153; Doc. H.1.5, p. H-01-200]. Regarding Sand Island data, CCH argued that the large number of values based on statistical hypothesis testing[62] created a perception of unacceptable toxicity that did not exist. [Doc. S.1.5,

[62] Hypothesis testing is the type of statistical testing used by the CCH laboratory in evaluating the *T. gratilla* data, and the type of testing that is necessary to evaluate compliance with Hawaii's water quality standards. The

p. S-01-154; Doc. H.1.5, p. H-01-208]. On both decisions, CCH argued that the statistical articulation of the test endpoint was overly conservative. [Doc. S.1.5, p. S-01-154; Doc. H.1.5, p. H-01-201]. CCH argued that the range of control gamete response, specifically, fertilization from 100% to 70%, should be considered the expected level of natural biologically variability, [Doc. S.1.5, p. S-01-160], implying that a difference in response between control organisms and test organisms within that range should be attributable to natural variability rather than toxicity [Doc. H.1.5, p. H-01-208-209]. Finally, CCH argued that, though CCH laboratory performance was of high quality, the problems identified in their comments were inherent in deficiencies in the test method relative to biological variability inherent in the indigenous sea urchin, and urged the Region to switch to a different statistical data evaluation method and/or species. [Doc. S.1.5, p. S-01-163; Doc. H.1.5, p. H-01-218.]

The Region responded at length to the comments presented by CCH prior to reaching its final decisions. See Doc. S.1.5, p. S-01-150 through 163, and Doc. H.1.5, p. H-01-199 through 218. Region 9 explained that the standardized chronic WET tests using marine species that are approved for nationwide use did not apply in Hawaii and other West Coast states. [Doc. S.1.5, p. S-01-151]. EPA promulgated the standardized WET test methods specified in 40 CFR Part 136 to measure chronic toxicity in marine organisms only for waters of the Atlantic Ocean and Gulf of Mexico. 67 Fed. Reg. 69955, 69962 (Nov. 19, 2002). The Region explained that the *T. gratilla* method used to evaluate the CCH effluents had become the standard method for use in NPDES permits issued by the Hawaii Department of Health since 1998, including CCH permits for its facilities in Kailua and Waianae. [Doc. S.1.5, p. S-01-151]. Regarding indigenous

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hypothesis evaluated when using statistical hypothesis testing using a NOEC is the "null hypothesis," that the test replicates at the concentration of interest are "not toxic," i.e., that there is not a statistically significant different between the response measured in the test replicates and the controls.

species, the Region responded that some state regulations require their use or prohibit the importation of non-indigenous species, and that Hawaii's strict regulation of non-native species inspired the State to develop the *T. gratilla* test. [Doc. S.1.5, p. S-01-154; Doc. H.1.5, p. H-01-201]. The Region also responded that WET testing in general has been documented to have ecological relevance. Regarding hypothesis testing, Region 9 noted that EPA supports hypothesis testing as a valid statistical method for analyzing WET data and emphasized that Hawaii's water quality criterion for WET for submerged outfalls is expressly written in terms of the NOEC, which by definition relies on hypothesis testing. Thus, hypothesis testing is the only appropriate way to assess attainment of the applicable water quality standards for WET for these discharges. [Doc. S.1.5, p. S-01-155-160; Doc. H.1.5, p. H-01-203-207]. The Region noted CCH's demonstrated ability to conduct the *T. gratilla* test well, with consistently excellent precision, and consistency in the results of reference toxicity control charts. [Doc. S.1.5, p. S-01-163; Doc. H.1.5, p. H-01-218].

C. The *T. gratilla* Fertilization Test Produces Reliable and Representative Results.

The Pacific sea urchin fertilization test produces valid and reliable results to determine whether a test sample causes toxicity as defined by Hawaii water quality standards. The State specifies use of the test to measure toxicity. Inter-laboratory studies to characterize a test's variability are not required, and the CCH Water Quality Laboratory generates precise results with low levels of variability. The test also generates results that are representative of effects in the receiving waters; the test uses an indigenous invertebrate as a surrogate for the aquatic biota to be protected by State standards. Doc. H.1.5, p. H-01-200-201 and 214-215; Doc S.1.5, p. S-01-151, 153-4, 162. The statistically significant results, therefore, are ecologically relevant. Id. The test includes quality assurance and quality control procedures to minimize any variability

due to analyst error or stress in test cultures due to factors other than effluent toxicity. Doc. H.6.3, p. H-06-314; Doc. H.16.1, p. H-16-8 through 11; Doc. S.6.3, p. S-06-391. If the test demonstrates toxicity, that toxicity is due to stresses caused by the effluent. In its petition, CCH proposes how to account for what CCH alleges to be the "biological noise" in Pacific sea urchin test results. The proposal, however, was not raised with specificity in its comments on the Region's decision, but regardless, would not assure compliance with, much less implement, Hawaii water quality standards.

In its brief, CCH concedes that the *T. gratilla* tests it conducted at the Honouliuli and Sand Island facilities show frequent exceedances of the Hawaii water quality standards. Pet. Br. 37. However, CCH now challenges Region 9's decisions regarding WET on two grounds. First, in section V.A of its brief, CCH argues that the *T. gratilla* test method does not generate data that are sufficiently reliable for the purposes of determining attainment of Hawaii's water quality standard for toxicity. Pet. Br. at 37-42. CCH suggests that use of the Pacific sea urchin test is not justified under State standards because it is not listed in test method manuals or otherwise a method "specified by the Director." Pet. Br. at 37. CCH argues that the State has not used the method in permits for the purposes of monitoring for compliance with permit limits, but rather only for other purposes, such as to trigger accelerated monitoring, which may then lead to a requirement to investigate the source of the problem. Pet. Br. at 39. CCH argues that the method has not been finalized and has not been subject to inter-laboratory variability testing, which it alleges is required prior to use for compliance purposes. Pet. Br. at 38. Second, in section V.C of its brief, CCH argues that the Region has not established the biological relevance of *T. gratilla* fertilization impairment test results that demonstrate statistically significant toxicity. Pet. Br at 47-53.

As discussed below, CCH's challenges to Region 9's conclusions that CCH failed to demonstrate that the proposed modified discharges from the Sand Island and Honouliuli plants would comply with the applicable water quality standard for toxicity lack merit, and its proposal for how to use WET testing based on "biological significance" was not presented with specificity during the public comment period. Additionally, as discussed below, the Region adequately responded to the comments concerning WET testing.

1. The *T. gratilla* Fertilization Test is Reliable and Widely Used in Hawaii.

The *T. gratilla* fertilization test yields valid, reliable results to demonstrate whether a test sample, including an effluent sample, causes toxicity as defined by Hawaii water quality standards at a specified critical initial dilution. Use of the test is clearly consistent with Hawaii's water quality standards. In addition to the narrative standard prohibiting toxic substances in toxic amounts and the standard for submerged outfalls based on the NOEC, Hawaii's water quality standards discuss how to determine toxicity. The Hawaii standards define chronic toxicity (e.g., impairments to fertilization) to mean "the degree to which a pollutant, discharge, or water sample causes a long-term adverse impact on aquatic organisms, such as a reduction in growth or reproduction." HAR § 11-54-4(b)(1)(B), Doc. S.19.1, p. S-19-13. The definition continues: "[t]he chronic toxicity of a discharge or receiving water is measured using methods specified in section 11-54-10 (Doc. S.19.1, p. S-19-59 [which incorporates EPA test method manuals by reference], unless other methods are specified by the director." Id. "All state waters shall also be free from chronic toxicity as measured using … methods specified by the director." HAR § 11-54-4(b)(2)(B), Doc. S.19.1, p. S-19-14. Hawaii standards make no distinction regarding whether the purpose for the WET testing using the specified methods is for compliance monitoring or for any other purpose. Measured toxicity is toxicity that exceeds the water quality

standards.

The director of the Hawaii Department of Health has required use of the *T. gratilla* fertilization test method in numerous permits.[63] See Sand Island response to comment P10, Doc. S.1.6, p. S-01-198, 199. Indeed, it has been the standard method for use in permits issued by HDOH for dischargers to marine waters for 10 years. [S-01-151].

In response to comments, Region 9 noted the State's use of the method in CCH permits for plants in Kailua, Waianae, and Hilo. [S-01-162]. CCH's references to the accelerated monitoring and TRE triggers in the Hawaii NPDES permits for Waianae (1999 and 2004) and Kailua (1999 and 2006), Pet. Br. at 40 n23, only demonstrates that the State has specified use of the *T. gratilla* fertilization test to measure toxicity. CCH's unsupportable suggestion that Hawaii does not specify use of the *T. gratilla* test for compliance monitoring is belied by recent permits issued by the State that do use *T. gratilla* for compliance monitoring. To counter CCH's proffer of permits attached as Exhibit A to the Supplemental Brief in Support of Consolidated Petition, the Region attaches Exhibit A, which includes relevant portions of Hawaii NPDES permits for the Hawaii Electric Company, Inc., Kane Generating Station (issued Oct. 5, 2005), and for the County of Kauai, Wailua Wastewater Treatment Plant (issued April 20, 2007), both of which document the State's use of the *T. gratilla* fertilization test to monitor compliance with permit limits.

2. The *T. gratilla* Tests in the Administrative Record Demonstrate Low Variability and Prior Inter-Laboratory Studies are Not Required.

EPA is not required to publish inter-laboratory variability studies prior to use of the *T.*

[63] In its brief, CCH refers to comments made that the *T. gratilla* was not on EPA's list of approved species for testing wastewater effluent, Pet. Br. 37, but apparently concedes that EPA or the state director retains the authority to specify tests on a case-by-case basis. Pet. Br. 41. To the extent this may still be an issue, the Region adequately responded in response to Sand Island comment C.31. See Doc. S.1.5, p. S-01-150.

gratilla fertilization test for regulatory compliance decisions. CCH does not identify any basis for any such requirement; and it cannot. That EPA, in fact, conducted multi-laboratory studies on a subset of the WET methods published at 40 C.F.R. Part 136 in the seven years after promulgation of those methods does not establish a requirement to do so. EPA initially published the standardized WET methods at 40 C.F.R. Part 136 in 1995. 60 Fed. Reg. 53,529 (Oct. 16, 1995). Subsequently, EPA conducted multi-laboratory studies of some of the WET tests[64] to demonstrate the Agency's earlier assertions that levels of test precision achieved within laboratories had a strong correlation to levels of test precision between laboratories. 60 Fed. Reg. at 53535. EPA had reasoned that, though an inter-laboratory study provides a useful and desirable means of validating an analytical method, such a study is not a requirement for approval for nationwide use. Id. For each method for which an inter-laboratory study had been conducted, pre-existing single laboratory data demonstrated similar, satisfactory precision. Further, specified quality assurance and quality control procedures in the test method protocol minimize any variability due to analyst error or stress in test cultures due to factors other than effluent toxicity. Finally, toxicity test methods specify a procedure for a series of initial repetitive tests to ensure that laboratory results during any particular analysis establish a pattern of satisfactory performance and define that laboratory's precision. Id. Both CCH and Region 9 agree that the CCH Water Quality Laboratory produces high quality test results using the *T. gratilla* method protocol, with high levels of precision. [Doc. S.1.5, p. S-01-163; Doc. H.1.5, p.

[64] EPA conducted the studies, and took other actions, pursuant to a settlement agreement, prior to undertaking further rulemaking that ratified its earlier action on the WET tests, except for two of the tests for which the Agency was unable to obtain sufficient laboratory participation within the timeframe for a multi-laboratory study. 67 Fed. Reg. 69952, 69955 (Nov. 19, 2002). EPA explained that it was unnecessary to approve the two methods using the two test species (for which an insufficient number of participating laboratories could be found) for nationwide use because very few permits actually required use of either test species. 67 Fed. Reg. at 69961. The Agency further explained that its decision not to occupy the category of Pacific Ocean and West Coast marine test protocols with nationally approved species would avoid the displacement of WET test protocols that had been developed for use in those waters. 67 Fed. Reg. at 69962.

H-01-217-218]. Thus, like the methods for which EPA had conducted an inter-laboratory study that confirmed the high degrees of precision based on pre-existing single laboratory data, it is reasonable to anticipate that an inter-laboratory study conducted on the *T. gratilla* fertilization test should yield similar high degrees of precision.[65]

In sum, the Agency adequately responded to CCH's comment that the *T. gratilla* test method is not reliable. The test has been specified by HDOH in numerous permits in Hawaii for years, in some cases to measure compliance with permit limits, in some cases to require accelerated testing and to require a permittee to evaluate why the effluent is toxic. Not having formally published the test method or an inter-laboratory study, and use of the test in some permits as a trigger for accelerated testing rather than permit compliance, do not make the test itself or the results it generates "unreliable." The Region's reliance on data submitted by CCH using this test in its evaluation of the toxicity of CCH's effluents was entirely reasonable.

3. CCH's Arguments Regarding the "Biological Significance" of *T. gratilla* Fertilization Test Results Do Not Raise Issues Warranting Review.

CCH's other argument regarding the WET test results on which the Region based its toxicity findings is that the test results have only "statistical significance," not "biological significance". As a preliminary, the Region's findings regarding toxicity are relevant to two of the section 301(h) criteria: the necessity of complying with water quality standards (301(h)(9)), and the necessity of attaining and maintaining water quality which assures protection and propagation of a BIP (301(h)(2)). CCH does not appear to contest the Region's comparison of CCH's WET test results with the Hawaii standard itself. Rather, CCH's biological significance

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[65] The results of an inter-laboratory study validating the *T. gratilla* fertilization test have not yet been published and thus were not available for consideration at the time of the Region's decision on review in this petition. Therefore, those results are not included in the administrative record to this proceeding.

argument appears to relate only to the Region's finding that the discharge, by not assuring compliance with Hawaii's water quality standards for aquatic toxicity, does not assure protection and propagation of a BIP. In other words, CCH is challenging the Region's finding that the WET test exceedances meant that CCH had not made the demonstration required by 40 CFR 125.62(c)(biological impact of the discharge), and is not challenging the Region's finding that those exceedances meant that CCH had not made the demonstration required by 40 CFR 125.62(a)(1).

As to biological significance, Hawaii water quality standards for toxicity establish the threshold of "biological significance" necessary to meet designated uses under those standards. For submerged outfalls, the Hawaii standard requires that the NOEC shall not be less than one hundred divided by the minimum dilution – in other words, there cannot be observed adverse effects at the critical initial dilution.[66] This, then, is Hawaii's expression of biological significance: In order to protect the designated uses – i.e., aquatic life – effluent from a submerged outfall, when diluted by the critical initial dilution, cannot show adverse effects in WET testing.[67] Thus, CCH's arguments that, essentially, small differences between the controls and the tests using CCH effluents are not enough to be biologically relevant are merely an attempt to substitute CCH's judgment for that of the State of Hawaii as to what is necessary to protect the State's biota.

Hawaii not only set the numeric test for biological relevance, it also has specified test

[66] Throughout the Honouliuli and Sand Island decisions, and the responses to comments, the standard is "translated" into TUc numbers. As discussed above, using the statistical "TUc" concept, this means that the TUc = the critical initial dilution. Using the TUc terminology is a way of facilitating comparison of numbers derived from WET testing with a numeric expression of the water quality standard.

[67] For nonsubmerged outfalls – where a pipe discharges effluent into the water from above – Hawaii sets a different standard. Under HAR 11-54-5(b)(4)(B), Doc. S.19.1, p. S-19-19, the survival of test organisms in an undiluted acute toxicity test shall not be less than 80 percent. Thus, Hawaii has made a determination that dilution cannot be taken into consideration when analyzing the toxicity of effluent for nonsubmerged outfall, unlike for submerged outfalls.

method protocols that can be used. One such test is the *T. gratilla* test method, specified by HDOH in permits across the state and by HDOH and EPA jointly in the current CCH 301(h) permits. By isolating external variables, the standardized testing procedure (including associated data interpretation methods) for measuring the toxic effects of an effluent on *T. gratilla* fertilization reliably characterizes the degree of biological relevance that the State has determined to be necessary to meet water quality standards.

CCH's primary argument is that the Region did not respond to its comments regarding biological significance, i.e., that the Region's responses were irrelevant to the issue argued because the responses were confined to statistics and the comment focused on "actual biologically significant population variance." Pet. Br. at 51. CCH then argues that the Region unreasonably rejected CCH's proposed method to account for biological significance, which would be to establish an arbitrary 70% fertilization threshold for gametes exposed to effluent at the critical initial dilution. Pet. Br. 53. CCH's challenge to the Region's response is premised on an isolated reference to "biological significance" in an EPA guidance document designed to explain WET test method variability and how to account for such variability.

As discussed below, the statement in the EPA guidance does not support the meaning or significance that CCH attributes to it. The record evidence that CCH cites to support its proffered 70% biological significance accounting method ignores the remaining record evidence that would support a finding of toxicity even under CCH's proffered methodology. The Region reasonably responded to CCH's comment that the *T. gratilla* fertilization test results on its effluents measured only small statistical differences between the test gametes and controls that were not, according to CCH, "biologically significant."

a. EPA Studies Have Confirmed that WET Test Results Accurately Predict Real-World Effects.

It is not clear whether CCH is challenging – or whether it raised in its comments – the ecological relevance of WET testing in general. To the extent this is an issue, the Region responded adequately. EPA has documented and considered the representativeness or comparability of WET methods in several studies that demonstrated the ability of WET tests to predict impacts of effluents on the biological integrity of receiving waters. 67 Fed. Reg. at 69965-69966. In responding to comments, the Region referred to studies discussed in the Agency's technical support document for water quality-based toxics control that correlated effluent toxicity measurements to receiving water toxicity:

> Together, these studies comprise a large data base specifically collected to determine the validity of toxicity tests to predict receiving water community impact… The results, when linked together, clearly show that if toxicity is present after considering dilution, impact will also be present.

Response to Sand Island comment C34, Doc. S.1.5, p. S-01-155. The Region's response went on to discuss how test procedures are designed to eliminate "false positive" findings of toxicity [S-01-156, 157].

b. The Region's Explanations Based on Statistics Do Not Ignore Biological Significance.

Based on the *T. gratilla* results, the Region found that the CCH discharges would exceed Hawaii water quality standards for toxicity. CCH's argument as to biological relevance does not contest that finding. Hawaii's water quality standards require that there be no observed effect in the biological response between the test sample (e.g., effluent at the critical initial dilution) and controls, i.e., no statistically significant difference. The *T. gratilla* test results showed that this standard was not met.

Throughout this portion of the brief, CCH repeats its contention that "statistical significance" is something different from "biological significance." The thrust of the argument

seems to be that the test is so sensitive that statistical effects do not reflect "adverse population impacts to this organism."[68] Pet. Br. at 47.

The Region responded to CCH's comments that the test was "too sensitive" by re-analyzing the data considered in the tentative decision by evaluating results below the lower PMSD as discussed above. EPA guidance encourages the uses of the PMSD procedure described earlier, so that dischargers using high quality laboratories are not disadvantaged (compared to dischargers using lower quality laboratories) due to the high precision (low variability) achieved by the high quality laboratories. Doc. H.6.16, p. H-06-897; Doc. S.6.18, p. S-06-1005. Test review by establishing PMSD bounds and evaluating results outside those bounds is written into the *T. gratilla* fertilization test standard operating procedure (SOP) used by the CCH Water Quality Laboratory. Doc. H.6.3, p. H-06-315, Doc. S.6.3, p. S-06-303. That SOP establishes upper and lower bounds for the percentages of smallest statistically significant difference between control mean response and the test concentration responses. For the individual test results that fell below the lower bound (i.e., days when the control responses and test concentration responses were determined to be statistically significantly different because the testing was very precise), the Region re-evaluated and re-calculated the individual test result generated in order to confirm or refute the result achieved.

The Region's response regarding application of the lower PMSD bound did not ignore the concern about biological significance raised during the comment period. Doc. H.1.5, p. H-01-211 through 214; Doc. S.1.5, p. S-01-157 through 160. CCH's suggestion that EPA's responses are irrelevant to the issue raised is premised on a statement from an EPA guidance document: "minimal variability in all treatments of a test may lead to such high statistical power

[68] CCH's comments during the public comment period suggesting that small statistical differences did not yield biologically meaningful responses did not use the term "population" or "populations" or otherwise make references to the "thriving populations" off Oahu where test organism are collected.

that detected differences may not be biologically significant. …" Pet. Br. at 50 (citing a statement from a "Frequently Asked Questions" appendix to an EPA guidance document that explains how to understand and account for method variability in WET tests; the quotation is at Doc. H.2.5, p. H-02-3469-70). The EPA guidance document does not explain further the nature of the biological significance that the statement addresses. The statement does describe variability in individual test results and the statistical power of an individual test, so it is not unreasonable to assume that the statement may have referred to biologically significant differences among and between organisms (or gametes) used in an individual test, e.g., similarity of responses due to the similarity of organisms (or gametes) used within the test rather than the capacity of the test to predict an adverse population response. The document, moreover, also explains how the statistical tool, the lower PMSD bound, accounts for small differences detected by high power tests, specifically providing a procedure by which the tests result can be re-calculated based on results achieved in that very sensitive test. Doc. H.6.16, p. H-06-896, 897; Doc. S.6.18, p. S-06-1105 (excerpts from same document). As discussed above, in responding to comments, the Region used this additional tool to re-analyze the WET test data that had been examined in the tentative decision. Doc. H.1.5, p. H-01-211-214; Doc. S.1.5, p. S-01-157-60.

CCH poses the question as to biological relevance in its brief as follows: "The important question is, at what point does a reduction in fertilization success, as measured in the laboratory, become a meaningful measure of an adverse effect to the real-world population, especially when there is no evidence that the real-world population is suffering any ill effects." Pet. Br. at 52. The Region submits that this question was answered by Hawaii when it set the water quality standards it considered necessary to protect the aquatic life in its waters. It was not up to the Region, nor is it up to CCH, to define "biological significance," as the State of Hawaii has

already done so.

c. CCH Does Not Deny That *T. gratilla* Test Results Predict Actual Adverse Effects; CCH's Proferred 70% Fertilization Percentage Threshold is a Red Herring.

CCH appears willing to concede that EPA's responses to comments regarding "false positives" support the Agency's conclusion that the effects observed in the laboratory will actually occur in the real world, Pet. Br. at 49, but instead contends that such predictions may not be biologically significant regarding the degree of the adverse impact.

In its brief (Pet. Br. at 52), and in its comments (Doc. S.1.5, p. S-01-160), CCH has urged using a 70 percent fertilization as a measure of biological significance. In other words, any sample that results in 70 percent or higher fertilization is defined as non-toxic.

This approach has several problems. First and foremost, it is not how Hawaii's water quality standard for submerged outfalls is written. If Hawaii had wanted to base findings of toxicity on the fertilization success alone, it could have done so, as it did for survival in the case of nonsubmerged outfalls (see footnote 67 above).

Second, the 70 percent percentage appears to be arbitrary. In its comments, CCH appeared to be suggesting that because in the EPA-approved method for a different sea urchin, 70 percent was used as a "test acceptability criterion," that that number would be appropriate as a definition of non-toxicity under the *T. gratilla* method protocol. As explained in the Region's responses, however, this mixes apples and oranges:

> This comment misinterprets test acceptability criteria (TAC), which set minimum requirements for performing toxicity tests. In its 2002 Final WET Rule … EPA restricted the term "test acceptability criteria" to biological measurements in test **controls** …. In the context of EPA's WET methods with sea urchins, a TAC is used to invalidate tests where there is inadequate fertilization in controls (i.e., 100% dilution water). For example, if there is 65% fertilization success in the **controls**, then the TAC would be used to reject the test, regardless of the results in **treatments**. Neither [of the sea urchin] fertilization methods published by

> EPA (2002, 1995) state that the TAC is intended to be used for interpreting acceptable fertilization in treatments (i.e., mixtures of effluent and dilution water).

Response to Sand Island comment C35, Doc. S.1.5, p. S-01-160. The Region added that in its opinion, a more appropriate approach for ensuring biological significance was the PMSD approach, which is the approach taken by the CCH laboratory [Doc. S.1.5, p. S-01-161]. In development of the response to CCH's comment suggesting that CCH's proposal was based on action by another EPA Region, Region 9 confirmed its position with that Region, which agreed with Region 9's use of the PMSD bounds to define the appropriate level of test sensitivity and how to use test sensitivity in the decision process. Doc. S.9.24, p. S-09-652; Doc. H.9.25, p. H-09-1006.

Third, even if CCH's arbitrary 70% test were used, that would not demonstrate that its effluents were nontoxic. CCH notes that, applying its 70% fertilization threshold to test gamete replicates at the critical initial dilution, "nearly half of the excursions ("toxic" events) would not be considered excursions." Pet. Br. at 53. Implicit in this statement is that that nearly half of those toxic events would still be considered excursions. For the Sand Island dataset, applying CCH's 70% threshold would mean that 57% of the data points (69 of 121) indicating toxicity would be determined to be non-toxic on the basis of biological insignificance. Doc. S.1.5, p. S-01-155. Applying the threshold would mean that 66.4% of the Honouliuli data points (95 of 143) would be changed from a conclusion of toxicity to no toxicity.

CCH wrongly concluded that because so many test results would not be considered toxic if its 70% fertilization threshold were applied to test gametes, the *T. gratilla* test was "inherently susceptible to type I errors" or "false positives." [Doc. H.1.5, p. H-01-208; Doc. S.1.5, p. S-01-155]. Presumably, CCH would concede that the other 43% (52 of 121) of the Sand Island results indicating toxicity and 33.6% (48 of 143) of Honouliuli results indicate toxicity, i.e., "true

positives". Regardless, CCH inappropriately conflates the statistical concept of "false positives" and its conception of biological insignificance. A substantial portion of the facilities' WET test results predict an observed adverse effect on *T. gratilla* fertilization at or above the critical initial dilution and thus the facilities would not attain or maintain the State's narrative water quality criterion for toxicity.

d. CCH's "Biological Noise" Concern Was Not Raised with Specificity In Comments Below

Based on the comments actually presented, and now presented in CCH's brief, Region 9 believes it may now understand CCH's "biological noise" argument. Prior to conducting the *T. gratilla* fertilization test, the analyst is directed to conduct "range finding" to determine the optimum sperm-to-egg ratio that achieves "about 90% fertilization." Doc. H.1.2, p. H-01-70; Doc. H.6.3, p. H-06-315. In the test itself, results are rejected and the test must be repeated if the fertilization percentage in the controls approaches 100%, which is considered over-sperming. Doc. H.6.3, p. H-06-316. In its brief, CCH notes that the species shows considerable variability in fertilization from week to week and month to month, specifically, with a range of about an order of magnitude. Pet. Br. at 52. CCH characterizes this range as natural variation and reflective of some degree of resilience to natural stressors. Id. Based on this natural variation, and because the *T. gratilla* test can predict toxicity even when as many as 95% to 99% of the gametes test replicates fertilize, CCH argues that "it is clear that using only statistical significance cannot accurately or adequately reflect actual reproductive toxicity." Id. CCH did not raise this issue with specificity, i.e., the connection between the range of sperm-to-egg ratios in controls and high fertilization percentages at the critical initial dilution, during the comment period.

CCH did present arguments regarding high fertilization percentages at the critical initial

dilution during the comment period and EPA's responses described operation of statistical controls on variability, including use of the PMSD, as discussed previously. The two instances of high fertilization percentages in test replicates at the critical initial dilution, however, do not convey an accurate characterization of the toxicity of the facilities' effluent. CCH identifies the two tests on Sand Island's effluent, where fertilization percentages of 95% and 99% in test replicates were found to be toxic, as purported evidence that a very small statistical change can be "misconstrued" as toxicity. Pet. Br. 48. (See Table IIB-2 in Doc. S.2.1, p. S-02-87-89.) Of the 130 data points in the cited table, however, the Region did not base its decision on these two data points standing alone. The table documents that 69 of the 130 data points exceeded the threshold of 103 TUc. Forty five of the tests were toxic at two concentrations lower than the allowable critical initial dilution; one test was at three concentrations lower than the critical initial dilution.[69]

The two instances where the Sand Island effluent was predicted as "toxic" even though test replicates had fertilization percentages of 95% and 99% percent are belied by the 50 instances where the effluent was predicted to be toxic and the test replicates had fertilization percentages lower than 80%. The isolated instances of high fertilization percentages also do not account for the 14 instances where fertilization percentages fell below 70% and the effluent was not predicted to be toxic. Doc. S.2.1, p. S-02- 87-89**.** Indeed, CCH's focus on fertilization percentages solely in the test replicates completely ignores that methodological comparison of the relative <u>differences</u> in gamete responses between control replicates and effluent test replicates

[69] Under the test protocol, the effluent is added to the test chambers in concentrations near the critical dilution, and at concentrations that are above and below those concentrations by multiples of two. For example, if critical dilution is 20%, then in addition to the 20% concentration test chambers, there are also test chambers with effluent concentrations at 5%, 10%, 40% and 80%. This is referred to as "bracketing" the test concentration. In the WET test data in this matter, the effluents were not tested at the critical initial dilution used in the current analysis, because the critical initial dilution in the existing permits, under which the tests were conducted, had been calculated differently.

is the essence of Hawaii's toxicity water quality standard for submerged outfalls.

Regardless, the reference to the natural variation of Pacific sea urchin fertility (based on the range in sperm-to-egg ratios that achieve about 90% fertilization in range finding tests) is another red herring. As CCH notes, the variation may be due to a degree of resilience to natural stressors. Pet. Br. at 52. Effluent from POTW plants, however, is not "natural" stressor. Variation in fertility may be due to seasonal or climatic changes, but variation in POTW effluent discharges do not correspond to such changes. Any natural variation in fertility of Pacific sea urchins is controlled and isolated in the test method protocol because test material (gametes) comes from the same culture, its distribution is randomized among and between test replicates and controls, and the remaining sources of possible variation in test results, other than the exposure of effluent, are controlled to the extent possible. That the numbers of sperm necessary to fertilize 90% of eggs varies over the course of weeks, months, or years is of no significance. CCH's suggestion that the toxicity caused by its effluents can be discounted because the *T. gratilla* species may exhibit "a degree of resilience" to natural stressors should be rejected. The State has established the degree of resilience that exposed gametes that it considers to be biologically significant pursuant to its water quality standards – no observed effect at the critical initial dilution.

e. The sensitivity of the *T. gratilla* test is not a flaw.

As discussed in the Region's response to Sand Island comment C.37, the fact that the *T. gratilla* is more sensitive to toxicants found in CCH's effluents than the alternative *C. dubia* does not demonstrate a deficiency with the *T. gratilla* test, nor does it mean that the results with *T. gratilla* should somehow be discounted. Rather, it illustrates the reason for conducting WET tests with more than one species. As stated by HDOH in a guidance document regarding WET

testing,

> A major concern about biomonitoring as a means to prevent toxicity is that the organisms used in the test may not be as sensitive as the most sensitive organism which either inhabits the receiving water, or would be present in the absence of pollutant. … Generally, testing with three diverse species … is likely to ensure protection of the most sensitive receiving water species. …

See Response to Sand Island comment C.37, Doc. S.1.5, p. S-01-162-3.

Nor can the failures of the Honouliuli and Sand Island plants to meet the WET standards based on the *T. gratilla* testing be attributed to the sensitivity of the method itself, as other permittees in Hawaii, including other CCH facilities consistently meet target values based on the water quality standards and the appropriate dilution, even, in at least one case, where the appropriate dilution is less than that allowed for the Honouliuli and Sand Island facilities. Doc. S.1.5, p. S-01-163.

D. Conclusion regarding Whole Effluent Toxicity

Although the tests with the non-native freshwater flea did not indicate toxicity in CCH's effluents, the tests with the native marine sea urchin showed significant toxicity[70] in both the Honouliuli and Sand Island effluents. The Region could not ignore these important tests when analyzing whether the proposed CCH discharges would comply with water quality standards, and whether they could interfere with attainment or maintenance of water quality supporting a BIP. In responding to comments, the Region not only thoroughly discussed the *T. gratilla* method and WET tests of this type, and the concerns that had been raised in the comments concerning these methods, but also conducted additional analysis, applying the lower PMSD bound process, in order to ensure the tests were not unfairly evaluated due to the laboratory's

[70] For example, Table 6a in the Sand Island FDD [Doc. S.1.2, p. S-01-104] shows that every sample but one during 2007-8 exceeded 357.1 TUc – more than three times the water quality standard (based on Sand Island's dilution) of 103 TUc.

high level of test precision. The results continued to show significant toxicity. The Region reasonably relied on the *T. gratilla* test results in determining that the proposed discharges would not comply with water quality standards or the BIP requirement, and adequately responded to comments regarding the test method.

VI. Region 9 Correctly Found That Neither the Honouliuli nor the Sand Island Proposed Discharge Would Meet Hawaii's Water Quality Standards for Chlordane.

In both decisions, Region 9 found CCH's proposed discharges would not meet Hawaii's human health water quality criterion for chlordane of 0.000016 micrograms/L. This criterion was established by Hawaii to protect persons consuming fish caught in Hawaii's waters from carcinogenic effects through fish consumption. CCH now asserts that the Region "failed to adequately explain why it ignored comments that the plants did not violate EPA's [recommended] water quality criteria for chlordane." Pet. Br. at 42. As discussed below, this issue was not clearly raised below. Moreover, the argument is directly contrary to EPA's 301(h) regulations requiring compliance with state water quality standards, which, in this case, were deliberately set at a more stringent level than the EPA recommended criterion because of higher fish consumption in Hawaii. See October 15, 2007 Declaration of HDOH Deputy Director Laurence K. Lau, Doc. S.15.8.

A. The Record Demonstrates Repeated Exceedances of the Hawaii Criterion for Chlordane.

In the Sand Island tentative decision, the Region found Hawaii's human health water quality criterion for chlordane of 0.000016 ug/L was exceeded in all 105 months from December 1998 through August 2007.[71] Doc. S.1.2, p. S-01-55, including Figure 3c. Subsequently to the tentative decision, the Region reviewed chlordane data submitted for the months September 2007

[71] Samples were taken monthly but reported by CCH as a running annual average. Doc. S.1.2, p. S-01-52, 53. Thus, in this case, the annual average is the mean of the preceding 12 monthly results, not the mean of the results on a calendar year basis.

through September 2008 to evaluate whether any changes were necessary in the conclusions reached in the tentative decision. The data showed that all 13 running annual average values for chlordane from this period exceeded the water quality criterion. Doc. S.1.2, p. S-01-55. At Honouliuli, only three samples were available for analysis in the tentative decision because Honouliuli samples were only taken annually, and prior to December 2003 CCH had submitted approximate values due to problems with the Honouliuli effluent flow meter. Therefore, EPA focused its review on the samples collected after the flow meter was installed. Doc. H.1.7, p. H-01-382. In the tentative decision, the Region found the human health chlordane criterion exceeded in two of the three samples. Doc. H.1.7, p. H-01-382. For the final Honouliuli decision, three additional samples were available for analysis, and all three showed exceedences of the chlordane criterion. Doc. H.1.2, p. H-01-65, including Figure 4.

B. EPA Fully Responded to Comments.

In its comments on the tentative decisions, CCH criticized use of the 0.000016 ug/L Hawaii criterion to analyze compliance with water quality standards. Although there was mention of the recommended EPA chlordane criterion in CCH's comments, the main thrust of those comments appeared to be that the current Hawaii criterion had been set erroneously based on a typographical error, and that the number that should be used to analyze compliance with water quality standards was a less stringent, "corrected" version of the standard. .Honouliuli comment C23 (Doc. H.1.5, p. H-01-190), Sand Island comment C23 (Doc. S.1.5, p. S-01-139). In the tentative decisions, the Region had used the chlordane criterion in Hawaii's water quality standards of 0.000016 micrograms/liter. In its comments CCH stated, "As EPA knows, the corrected value is 0.00016 micrograms per liter, and the HDOH has affirmed its intent to rectify this error" (Sand Island comment C23, Doc. S.1.5, p. S-01-139), and "as EPA recognizes,

corrected value is 0.00016 micrograms per liter." (Honouliuli comment C23, Doc. H.1.5, p. H-01-190).[72]

CCH also mentioned EPA's national recommended water quality criteria. On the Honouliuli tentative decision, CCH commented as follows:

> It should be noted that, when using the most current EPA National Recommended Water Quality Criteria (which include the most current toxicity factors and regulatory defaults for fish consumption, etc.), there were …no exceedances of chlordane [from February 20, 2002 through January 17, 2007].

Honouliuli comment C23, Doc. H.1.5, p. H-01-190. CCH's comments on the Sand Island tentative decision stated that Hawaii had not revised its water quality standards for chlordane since the 1990s, that Hawaii's water quality standards were outdated in light of subsequent EPA studies, that between 2000-2007 CCH's effluent had not exceeded EPA's 2006 recommended criterion of 0.00081 ug/L, and that "EPA's reliance on criteria that have been superseded represents EPA's arbitrary and unjustified attempt to support its predetermined conclusion." Sand Island comments C25-C26, Doc. S.1.5, p. S-01-142, 143. CCH also discussed the national recommended criterion in its comments on the section 301(h)(2) recreation criterion for the Sand Island tentative decision (comment C58, Doc. S.1.5, p. S-01-177), and appeared to do the same for Honouliuli (comment C64, Doc. H.1.5, p. H-01-239).

The Region responded to both sets of comments that "[u]ntil an alternative criterion is approved, 0.000016 ug/L remains the water quality standard for fish consumption for chlordane and is the appropriate value for the 301(h) evaluation." The current Hawaii chlordane standard had been presented for public review in 1989 and adopted in 1990, and not changed when Hawaii's standards were revised in 2000 and 2004. Response to Sand Island comment C23 (Doc. S.1.5, p. S-01-139) and Honouliuli comment C23 (Doc. H.1.5, p. H-01-190).

[72] The difference is an extra zero, the "corrected" standard being ten-fold less stringent than the actual standard.

Additionally, the Region noted that although in October 2007, the Hawaii Department of Health (HDOH) had stated its intent to amend the fish consumption water quality standard for chlordane [to 0.00016 micrograms per liter],[73] HDOH had not yet conducted the formal process to amend the standard, which requires a formal proposal, public review, formal adoption, and EPA approval. Response to Sand Island comment C23 (Doc. S.1.5, p. S-01-139). Nevertheless, the Region found that even if the criterion were changed to 0.00016 micrograms/liter, exceedances would be common.[74]

Regarding the 2006 national recommended criteria, the Region responded to the Honouliuli comment as follows:

> Nor is it appropriate to assess concentrations of these pesticides against general EPA criteria when the State of Hawaii has specifically adopted criteria for these pesticides to ensure the fish caught by anglers in Hawaii's waters will be safe to eat.

Honouliuli response to comment C23 (Doc. H.1.5, p. H-01-190). In response to the Sand Island comments, the Region stated that the national recommended value "is not Hawaii's water quality standard. Therefore, CCH's review of the monitoring data against this value is not relevant." The Region also stated that it is not appropriate for EPA to assess the effluent concentrations against criteria that may or may not be adopted in the future (response to Sand Island comments C25-C26, Doc. S.1.5, p. S-01-142, 143). EPA responded to the comments regarding recreation similarly. Doc. S.1.5, p. S-01-177; Doc. H.1.5, p. H-01-239.

[73] This refers to a proposal to change the standard to 0.00016 ug/L to correct the alleged typographical error, as discussed in Sand Island comment C23 itself. (Doc. S.1.5, p. S-01-139.

[74] Figure 4 in the Honouliuli final decision and Figure 3c in the Sand Island final decision show the exceedances of the "corrected" standards as well as the actual standard. Doc. S.1.2, p. S-01-55; Doc. H.1.2, p. H-01-65.

C. The Region Reasonably Applied the Criterion in Hawaii's Promulgated Water Quality Standards, Rather than the Federally-Recommended Criterion.

1. CCH's Current Argument Regarding Chlordane Was Not Clearly Raised Below.

The record clearly demonstrates that CCH's discharges do not meet either the existing Hawaii criterion of 0.000016 ug/L, nor what the Hawaii criterion would be if state standards were amended to correct the alleged typographical error and set the criterion at 0.00016 ug/L. CCH apparently concedes that even at the "corrected" level, there would be violations of the State standard, and in its brief calls the typographical error issue irrelevant. Pet. Br. at 43, note 28. Instead, CCH now contends that the Region should have applied EPA's recommended chlordane criterion, rather than any State criterion. That issue was not clearly raised below. Even if it were, CCH's arguments are directly contrary to EPA's promulgated section 101(h) regulations, and find no support in preambles from the National Toxics Rule cited in Petitioner's brief. Hawaii's water quality criterion is intentionally more stringent than the CWA section 304(a) recommended criterion because of the State assumes higher levels of fish consumption rate than EPA's national recommended assumption. Doc. S.5.4, p. S-05-98; see also Doc. S.15.8.

CCH now argues that the Region should not be analyzing its plants' ability to comply with Hawaii's water quality standard – even at the "corrected" level -- but instead should be analyzing only whether CCH's discharges meet the less stringent national criteria established under CWA section 304(a). CCH bases its argument on the wording of Section 301(h)(9), which states that a modified 301(h) permit must "meet the criteria established under section 304(a)(1) of the Clean Water Act," referring to the national recommended criteria. Pet. Br. at 44. CCH quotes from EPA's Federal Register notice promulgating the National Toxics Rule that "in section 301(h)(9), applicants must meet the section 304(a) criteria as if they were regulatory."

57 FR 60848, 60874-5 (Dec. 22, 1992). Pet. Br. at 14. CCH also contends that the national recommended criteria should have been considered in the Region's analysis of section 301(h)(2) (the BIP and recreation requirement), because section 304(a) requires the EPA criteria to "accurately reflect[] the latest scientific knowledge." Pet. Br. at 46.

This new issue was not clearly raised in any comments on the tentative decisions. While CCH commented on both tentative decisions that its discharges did not exceed the national recommended criteria, and commented on the Sand Island decision that Hawaii's chlordane standard is out of date and should be revised based on the EPA criteria, CCH did not assert that Hawaii's water quality standards should not be considered at all based on the language of section 301(h)(9). Not only was this point not raised, but the thrust of CCH's comments on chlordane in general appeared to be that the correct standard was 0.00016 micrograms/liter, i.e., the Hawaii criterion as it would be if "corrected" for the presumed typographical error. As discussed above, comments submitted to the Region need to be made with clarity and specificity, so that the Region does not have to guess at what a comment means. Therefore, this argument should not be considered by the Board.

2. EPA's Regulations Clearly Require A Discharger to Meet Promulgated State Water Quality Standards.

To the extent the Board considers this issue, however, Region 9 submits that it adequately responded to CCH's comments and correctly found that CCH's discharges could not meet the human health water quality standard for chlordane. EPA's regulations at 40 CFR 125.62(a)(1)(i) and (ii) are abundantly clear that the Region must evaluate a discharger's ability to meet water quality standards, and only look to EPA's recommended criteria when there is no applicable EPA-approved standard that directly corresponds to the EPA criterion for the pollutant. CCH, in

another section of its brief, admits as much.[75] Specifically 40 CFR 125.62(a)(1) requires that the discharge not exceed (i) all applicable water quality standards; and (ii) all applicable EPA water quality criteria for pollutants for which there is no applicable EPA-approved water quality standard that directly corresponds to the EPA water quality criterion for the pollutant. A State water quality standard "directly corresponds" to an EPA criterion when it addresses the same pollutant, and when it is numeric – factors that Hawaii's chlordane criteria obviously satisfy. 40 CFR 125.62(a)(1)(iii). In proposing the current regulations in 1991, EPA clearly stated its interpretation of section 301(h)(9):

> [Section 301(h)(9)]…. requires … at the time the waiver becomes effective, that discharges meet water quality criteria established by EPA under CWA section 304(a)(1) of the Act after initial mixing … In general, CWA section 304(a) criteria serve only as guidance to the States. States may base their development of water quality standards on the 304(a) criteria as modified to reflect site-specific conditions or on other scientifically defensible methods (see 40 CFR 131.11(b)). In addition, water quality standards are subject to EPA approval, and are approved by EPA notwithstanding differences with the 304(a)(1) criteria where they are deemed appropriate with respect to local conditions.
>
> Accordingly, EPA believes that Congressional intent behind this part of section 301(h)(9) will best be satisfied if the applicant demonstrates compliance with directly corresponding numerical water quality standards, instead of section 304(a)(1) criteria, where such an EPA-approved numerical standard exists for a pollutant.

56 Fed. Reg. 2814, 2818 (Jan. 24, 1991).

EPA expanded on its interpretation when finalizing these regulations in 1994, writing as follows:

> Under the CWA, States may develop water quality standards based on the section 304(a) criteria, as modified to reflect site-specific conditions, or they may use other scientifically defensible methods for developing water quality standards.

[75] "Section 301(h)(9) does not clearly override the statutory policy of deference to state standards….EPA has correctly recognized that Section 301(h)(9) establishes a hierarchy of applicable water quality standards for variance applications. Applicable state standards take precedence, followed by EPA-promulgated standards when no applicable state standards exist, followed at last by the 'criteria' of Section 304(a)(1) … when neither the state nor EPA has adopted applicable standards." See 59 Fed. Reg. 40642, 40650 (Aug. 9, 1994)." Pet. Br. at 23-4.

> State standards are subject to EPA review and approval. They are developed by the States to protect the types of biota in, and beneficial uses of, their local waters, and thus represent scientifically appropriate standards for each State's specific situation. EPA does not believe that, in amending section 301(h), Congress intended to interfere with this statutory scheme, nor require compliance with the national guidance contained in the section 304(a)(1) criteria when CWA section 303 standard-setting process results in adoption of different standards to reflect local conditions and those standards have been subject to EPA review and approval. Rather, EPA believes that the intent of this provision was to ensure compliance with the national section 304(a)(1) criteria in those cases where the States have not adopted a directly corresponding State standard and EPA has not itself promulgated a standard in light of such State inaction. Today's final rule therefore retains the proposal's approach.

59 Fed. Reg. 40642, 40650 (August 9, 1994).[76]

In addition to the requirements of section 125.62(a), EPA's section 301(h) regulations require the State to certify that its water quality standards are met (40 CFR 125.61), and, at 40 CFR 125.59(b)(1), prohibit issuing 301(h)-modified permits that would not comply with EPA regulations that require that permits ensure compliance with water quality standards. 40 CFR 122.4(d), 122.44(d). It would be anomalous indeed to look to State water quality standards when analyzing these portions of the regulations, but to use only the national recommended criteria when evaluating compliance with 125.62(a).

CCH's quotation from the National Toxics Rule, Pet. Br. at 14 (citing 57 Fed. Reg. 60848, 60874-5 (Dec. 22, 1992)), for the proposition that "in section 301(h)(9), applicants must meet the 304(a) criteria as if they were regulatory" is inapposite. The National Toxics Rule (NTR), whose preamble CCH is quoting, was not implementing section 301(h), but was promulgating numeric criteria based on 304(a) criteria for priority toxic pollutants for several states that did not have them, and the quotation was in response to a comment that the 304(a) criteria are merely informational. Nor did EPA state in the NTR preamble that section 304(a)

[76] CCH does not appear to be challenging the regulation itself. If it were, it would clearly be too late, as discussed previously.

criteria were to be used under section 301(h)(9) *in lieu of* State water quality standards.[77] As discussed above, the Region does not question that applicants must meet the 304(a) criteria – but only if there are no directly-corresponding State standards, as discussed at length by EPA in the 1991 and 1994 301(h) preambles excerpted above.

3. Hawaii's Chlordane Criterion Is Purposefully More Stringent than the EPA-Recommended Criterion

States can and often do have stricter water quality standards than federal criteria. The State standards reflect State determinations of levels necessary to achieve uses, and can take into account State-specific factors. That is precisely what Hawaii did with regard to chlordane. As explained by HDOH Director Laurence Lau in 2007, Hawaii's chlordane standard was purposefully set at a more stringent level than EPA's 304(a) recommended criterion to account for higher fish consumption in Hawaii. Document S.15.8; see also Doc. S.5.4, p. S-05-98. Thus, the Region's use of the State chlordane standard in analyzing whether CCH's discharges were protective of recreation under section 301(h)(2) was appropriate. As the Region explained in response to one of CCH's comments on recreation, "In this 301(h) analysis, protection of fish consumption must be analyzed in terms of the particular water quality standards applicable in the state of Hawaii to protect persons consuming fish caught in Hawaii waters." Response to Honouliuli comment C64 (Doc. H.1.5, p. H-01-239) and Sand Island comment C58 (Doc. S.1.5, p. S-01-177).

EPA properly looked to Hawaii's chlordane standards in evaluating whether the CCH discharges would meet section 301(h)(9), and whether its discharge would allow maintenance of water quality supporting recreation under section 301(h)(2). EPA could not ignore the State of Hawaii's determination of the appropriate level for protecting persons who eat fish from

[77] The NTR did not promulgate chlordane standards for Hawaii. In fact, the NTR did not promulgate any water quality standards for Hawaii.

Hawaii's waters. Reliance on Hawaii's standard was not arbitrary and capricious. To the contrary, it would have been arbitrary and capricious to ignore the standard set by Hawaii, and the data showing frequent exceedances of that standard.

VII. Region 9 Reasonably Determined that Neither CCH Facility Could Meet Water Quality Standards for Dieldrin, and Adequately Responded to Comments Concerning Dieldrin Testing Methods. Remand to Consider New Information Is Not Appropriate.

In both 301(h) decisions, Region 9 found the CCH facilities could not meet Hawaii's water quality criterion for the pesticide dieldrin. This criterion was adopted by the State to protect human health from exposure to pollutants through fish consumption. At Sand Island, the Region found the dieldrin criterion exceeded in all 118 of the monthly samples taken between December 1998 and September 2008.[78] Doc. S.1.2, p. S-01-54, 56. At Honouliuli, the Region found the dieldrin criterion exceeded in five of the six annual samples between December 2003 and July 2008. Doc. H.1.2, p. H-01-67.[79]

The dieldrin data submitted by CCH was analyzed using EPA Method 608, an EPA-approved method specified in both permits for determining amounts of various pesticides, including dieldrin, in CCH's effluent. In addition to EPA Method 608, EPA has approved the use of one other test method, EPA Method 625, for analyzing effluent samples for dieldrin. See 40 CFR 136.3, Table 1D, List of Approved Test Procedures for Pesticides. The existing Sand Island permit specifies only EPA Method 608 for analyzing effluent samples for pesticides (1998 Sand Island permit, Doc. S.12.2, p. S-12-154), while the existing Honouliuli permit allows use of

[78] Sand Island samples were taken monthly and reported as a running annual average. Doc. S.1.2, p. 50-51S-01-52, 53.

[79] Honouliuli samples were only taken annually. EPA focused its review on samples collected beginning in December 2003 because prior to that time CCH submitted approximate values due to problems with the Honouliuli effluent flow meter. Doc. H.1.2, p. H-01-63.

either EPA Method 608 or EPA Method 625.[80] EPA Methods 608 and 625 are both included as appropriate for dieldrin testing in effluent in EPA's 301(h) ATSD. ATSD Table C-10, page E-60, Doc. S-19.6, p. S-19-464.

CCH now urges the Board to remand the case to Region 9 based on new evidence CCH is submitting as to alternative testing performed using a third test method, Method 8270, a method that has not been approved by EPA for testing for pesticides in wastewater. Essentially, CCH is asserting that the Region should have simply disregarded years of data using the EPA-approved Method 608. As discussed below, the newly-submitted documents should have been submitted during the public comment, and it would be inappropriate to consider them now. And even if they were considered, the Region could not ignore significant exceedances of the dieldrin criteria using the EPA-approved Method 608.

A. The Region Fully Responded to Comments

In its comments on the tentative decisions, CCH questioned the results obtained using EPA Method 608, and submitted data based on split samples CCH stated had been analyzed using both EPA Method 608 and another method, EPA Method 8270. SI comment C29 (Doc. S.1.5, p. S-01-144); Honouliuli comment C25 (Doc. H.1.5, p. H-01-193). EPA Method 8270 was not included in CCH's permits, the ATSD, or 40 CFR Part 136 for effluent samples. CCH commented that it was difficult to obtain reliable results for pesticides such as dieldrin using EPA Method 608, because of interfering constituents such as fats and proteins in municipal wastewater. CCH stated that in the split-sample analysis, dieldrin was not detected using the EPA Method 8270 method, whereas it had been in the EPA Method 608 analyses, and concluded

[80] The 1991 Honouliuli permit indicates that effluent samples should be collected and analyzed pursuant to EPA's 1987 301(h) Field and Laboratory guidance. Doc. H.12.4, p. H-12-1176. Table B-2 of the 1987 guidance lists only two test methods -- EPA Method 608 and EPA Method 625 -- for dieldrin.

that the results from EPA Method 608 were, or were likely, false positives. Doc. S.1.5, p. S-01-144; Doc. H.1.5, p. H-01-193.[81] CCH included in its comments a technical memorandum on pesticides discussing EPA Methods 608 and 625 (which uses a similar process as EPA Method 8270), but not EPA Method 8270. [The technical memorandum is found in the Honouliuli AR, document H.2.2, page numbers H-02-264 and the Sand Island AR, document S.2.2, page numbers S-02-553.]

The Region provided lengthy responses to these comments, concluding that CCH's arguments and the additional laboratory data submitted by CCH in its comments did not provide sufficient reason to disregard the existing laboratory data reviewed in the tentative decisions. Region 9's responses included the following points[82]:

a. The test method used by CCH in the samples submitted under its permit and the variance renewal application, EPA Method 608, is specified in the permits, and is an EPA-approved test method listed in Table 1D of 40 CFR 136.3 and in the Section 301(h) ATSD (Doc. S.19.4, p. S-19-464). CCH does not contest this point.

b. Method 608 includes cleanup methods to decrease detection interferences from chemicals not targeted for analysis. 40 CFR Part 136, App. A, Method 608, par. 3.3 and Sec. 11. CCH does not contest this point.

c. EPA Method 8270 has not been approved by EPA for testing pesticides in wastewater, and to use an alternative test method, the discharger must follow the steps in 40 CFR 136.5, which CCH had not done. Following the requirements of this regulation, the Region noted,

[81] Honouliuli comment C25 (Doc. H.1.5, p. H-01-193) and Sand Island comment C29 (Doc. S.1.5, p. S-01-144) also questioned the appropriateness of Hawaii's water quality standards for pesticides. The appropriateness of Hawaii's dieldrin standard is not at issue in this proceeding. Issues raised by CCH concerning Hawaii's chlordane standard are discussed in Sec. VI of this brief.

[82] These points were all included in the Region's responses to Honouliuli comment C25 (Doc. H.1.5, p. H-01-194 through 199) and Sand Island comment C29 (Doc. S.1.5, p. S-01-145 through 149).

would ensure that correct and clearly defined laboratory procedures were applied and resulting data presented in a clear manner for review by EPA. CCH now contends that the procedures of Part 136 are not relevant, an argument that both could have been presented in comments and is not persuasive, as discussed below.

d. Based on the comments and information submitted to the Region by CCH, and review of Method 8270, the Region identified technical concerns with Method 8270. For example, the Region pointed to the statement in the technical memorandum submitted by CCH that for organochlorine pesticides (such as dieldrin), the major drawback of the type of detection used in EPA Method 8270 "is that the typical reporting limits are much higher than the typical reporting obtained from [the detection process used in method 608]." The Region discussed that although the EPA-approved EPA Method 625 uses the type of detection used in EPA Method 8270, EPA Methods 625 and 8270 are not equivalent. CCH is now proffering an affidavit to respond to these concerns. As discussed below, this is the type of discussion that could have been presented in the comments; moreover, the newly-proffered affidavit still leaves questions.

e. The Region identified various reasons CCH's supplemental analysis was misleading, including that the technical memorandum attached to CCH's comments suggested that analysis of the Honouliuli effluent was conducted using EPA Method 625, but those results were not presented; there was not enough information to confirm that the tests were truly based on split samples because the EPA Method 608 results were not submitted and dates did not correlate[83]; and the samples were grab samples rather than the composite samples required in the permits.

[83] For example, page S-02-99 of Doc. S.2.1 (Figure IIB-3 of CCH's comments on the Sand Island TDD) listed a sample date of 9/3/07 and indicated laboratory analysis using methods 608 and 8270. Figure IIIB-3 did not list a sample date of 9/4/07. However, page S-02-470 of Doc. S.2.2 presented a laboratory data sheet for a sample collected on 9/4/07 (not 9/3/07) and analyzed using Method 8270. In the data submitted with CCH's comments on the Sand Island TDD, there was no corresponding laboratory data sheet for the analysis conducted using Method 608, thus raising questions as to whether this was a true split sample. It was also unclear whether the sample was taken on 9/3/07 or 9/4/07.

CCH has now submitted a declaration to counter these concerns. As discussed below, this is information that could have, and should have, been submitted during the comment period; moreover, even if the new information were considered, questions remain.

B. The Region Reasonably Relied on the Data Submitted by CCH Using the EPA Approved Test Method Published in 40 CFR Part 136 to Conclude That the Discharges Would Not Meet the Water Quality Criterion for Dieldrin.

CCH's Water Quality Laboratory measured the effluent from both facilities using analytic testing procedures approved for measurement of waste water. Test results demonstrated that the discharges would not meet the Hawaii water quality standard for dieldrin. The effect of interferences identified by CCH are speculative, and its laboratory could have used additional methodologies to control such interferences. Test results derived from a different test not approved for this use, a test that itself has identified shortcomings, are irrelevant. In addition, the use of the test at a different facility is irrelevant.

CCH now urges the Board to remand the case to Region 9 to reconsider its findings with regard to dieldrin. CCH states that during the comment period, it "offered the results of testing under a more sensitive, EPA-approved, alternative test method, which found no dieldrin where Region 9's method found dieldrin at levels exceeding the Hawaii water quality standard." Pet. Br. at 16. As a preliminary matter, CCH's characterization of its submissions during the comment period is very misleading. EPA Method 8270 is not EPA-approved for determining concentrations of pesticides in wastewater effluent. See 40 CFR 136.3, Table ID.[84] It is not a more sensitive test method; indeed, that is one of the problems with it, as discussed more below. Finally, EPA Method 608 is not "Region 9's method"; it is EPA's method. EPA Method 608 is one of two EPA-approved methods for testing for dieldrin in wastewater effluent, and the

[84] Method 8270 is EPA-approved for other purposes, specifically for use in determining regulatory compliance under the Resource Conservation and Recovery Act.

method that CCH was using under its permits.

1. The Proffered Affidavit and Declaration Should Be Rejected as Untimely Comments.

CCH has now submitted two sworn statements, one of which includes lengthy exhibits, and asserts that the Board should remand to the Region to consider this newly-submitted evidence. CCH also urges a remand because method 8270 was used in the Pt. Loma (San Diego) 301(h) renewal application for which Region 9 issued a tentative decision recommending approval in December 2008, subsequent to close of the Sand Island and Honouliuli comment periods. CCH states that it is proffering this new evidence to support its assertions that the Region's responses to comments concerning alternative EPA Method 8270 are based on factual errors.

As a preliminary matter, the Region submits that remand to consider the documents proffered by CCH is neither necessary nor appropriate. The information submitted in the two sworn statements could have been submitted during the comment period,[85] and consideration of such information at this point is counter to the regulatory requirement that all comments need to be clearly made during the comment period. Remand is not appropriate for consideration of the Pt. Loma tentative 301(h) decision, as that decision was already before the Region during the Honouliuli and Sand Island decision-making processes and, moreover, is not relevant to the issues before the Board in this proceeding.

The EAB has consistently held that all reasonably ascertainable issues and arguments

[85] Exhibit C, the Tenno declaration, attaches records related to the split-sample procedure and is introduced to counter concerns with that procedure identified in the Region's responses to comments. For example, the attachments include chain-of-custody forms to respond to the Region's concern that there was not sufficient information to confirm that the tests were truly based on split samples. All the records attached to the Tenno declaration were in existence and could have been submitted during the comment period to clarify the process and verify the data from the split-sample investigation. Exhibit B, the Bishop affidavit, was written by the author of the technical memorandum submitted by CCH in its comment, and is proffered to respond to the Region's concerns with method 8270, the test method used in CCH's split-sample procedure. If CCH had wanted to add to the technical memorandum, it could have done so during the comment period.

must be raised during the public comment period to be preserved for review by the Board. Adhering to this requirement ensures that the Region has an opportunity to address potential problems with the draft decision before it becomes final, thereby promoting the Agency's longstanding policy that most permit issues should be resolved at the regional level, and providing predictability and finality to the permitting process. *Arecibo & Aguadilla Regional Wastewater Treatment* Plants, 12 E.A.D. 97, 116-7 (EAB 2005).

Similar considerations should apply to submission of documents during the petition for review process: If the petitioner could have submitted such documents during the public comment period and did not, they should not be considered during the EAB process. The EAB process is not an extension of the comment period, nor does it contemplate a protracted procedure under which if EPA finds fault with a submission, the discharger can submit documents it previously had but failed to submit. Here, CCH had five months to comment on the Honouliuli tentative decision and nearly four on the Sand Island tentative decision, and could have included these documents and arguments in its comments then. As EPA stated when adopting its first 301(h) regulations, the 301(h) process is not meant to be a process for delay. 44 Fed. Reg. at 34784, 34794 (June 15, 1979). While the EAB under certain circumstances has allowed submission of new information at the petition for review stage to counter new material added to the administrative record in response to public comment, *Dominion Energy Brayton Point*, 13 EAD __, slip op. at 15 (EAB 2007), that precedent is not applicable here. The Region's responses being challenged here did not present new material or information.[86] Rather, the responses explained the Region's analysis of the documents and comments submitted by CCH. CCH is simply trying to get a second bite at the comment period, not to reply to new

[86] The Region did include some new data – CCH's samples from 2007-2008 -- concerning pesticides. The Region analyzed whether these data supported its tentative conclusions in the tentative decision and found that they did. CCH is not challenging this finding or responding to this new data.

information the Region included in its responses.

2. Use of Another Method in a Different State in a Different Proceeding Does Not Negate Test Results on CCH's Effluents Using an EPA-Approved Method.

The Region acknowledges that the Point Loma tentative decision was issued subsequent to the close of the Honouliuli and Sand Island comment periods and that CCH could not have discussed it in its comments. The Point Loma tentative decision was considered by EPA in the decision-making process for the CCH applications and is included in the administrative records for the Honouliuli and Sand Island decisions. Doc. H.21.135; S.9.25. Moreover, it is not necessary to remand for Region 9 to address the alleged inconsistency between the Point Loma and CCH decisions, because use of another testing method by the Point Loma facility is simply not relevant. The issue is not whether the use of EPA Method 8270 is ever appropriate, but whether it was appropriate for the Region to rely on the data submitted by CCH using EPA Method 608. The fact that another discharger in a different state may have used EPA Method 8270 does not make the CCH data using the approved EPA Method 608 unreliable. Region 9 submits that the Point Loma decision is irrelevant to the issues before the EAB on the CCH permits. Therefore, remand for consideration of the Point Loma decision is neither appropriate nor necessary.

3. Even if the Proffered Evidence Were Considered, the Region's Analysis Was Reasonable

As discussed above, the Region in its response to comments presented a comprehensive explanation of why it could not ignore the data submitted by CCH under its permits, in the course of several years, using Method 608. Even if the newly-proferred documents were considered, they do not address all of the issues raised by the Region in its responses. For example, as discussed above, CCH does not contest the Region's statements in its responses to

comments that Method 608 is EPA-approved for wastewater testing, was specified in the permits, and included in EPA's ASTD for 301(h) decision, and that Method 608 can adequately address potential oil and grease interferences. Doc. H.1.5, p. H-01-195; Doc. S.1.5, p. S-01-146

The Region also noted in its responses that if CCH had wanted to use an alternative test method, it should have followed the procedure in 40 CFR 136.5. Doc. H.1.5, p. H-01-194; Doc. S.1.5, p. S-01-146. CCH now contends that the procedures of Part 136, specifically Section 136.5, are not relevant because CCH was not asking for approval of the alternative method 8270 for purposes of compliance, but rather that it had conducted the split-sample testing to further support a recommendation for the most appropriate protocol for the next permit. Pet. Br. at 59. This argument could have been made in the comments, as CCH surely knew the contents of Part 136 and that Method 8270 was not approved for wastewater effluent testing, not included in the CCH permits, and not cited in the ATSD. Additionally, this argument has no merit. The requirements of Part 136, including the requirements for requesting alternative methods in 136.4 and 136.5, do not relate solely to compliance, but also to NPDES applications, which is precisely the situation here. 40 CFR 136.1(a)(1). If CCH had used the procedures of Part 136 to propose an alternative test method, it could have submitted the newly-proffered documents and presented the Region with an organized, clear submission regarding the method. See, e.g., 40 CFR 136.4(c)(4) that the applicant must provide a detailed description of the alternative test procedure. Instead, CCH presented a memorandum comparing Method 608 with Method 625. If they had wanted to go a step further and compare Method 625 with the Method 8270 -- for example, by submitting information contained in the proffered Bishop affidavit -- this could have been done during the comment period.

With regard to the newly-proferred Bishop affidavit, Region 9 acknowledges that the

Bishop affidavit answers some of the concerns noted in the responses to comments. For example, Bishop correctly states that dieldrin is not a multi-component compound, in response to the Region's statement in its responses that Method 8270 is not appropriate for the quantification of multi-component analytes.[87] The Bishop affidavit also explains that the sample procedure used with Method 8270 in the split-sample testing is a procedure authorized under Method 625, in response to the Region's concern noted in its responses that Method 8270 includes some sample procedures that are not authorized for Method 625 (the EPA-approved alternative to Method 608).

On the other hand, information included in the Bishop affidavit regarding selective ion monitoring still leaves questions, as Bishop is quoting from what appears to be an earlier version of the protocol for Method 8270 than the one on which the Region had based its concerns.[88] Thus, the Bishop affidavit does not address of the Region's concerns regarding Method 8270.

Nor does the Tenno declaration address all the Region's concerns regarding the comparative testing. For example, as discussed above, the Region noted that the technical memorandum submitted by CCH suggested that there had been an analysis of CCH's effluent using Method 625 (the approved alternative to Method 608),[89] but these data were not presented in CCH's comments. CCH did not respond to this concern. Another concern raised by the

[87] Here, the Region was responding to CCH's comments regarding the use of Method 608 for other compounds as well, including for chlordane, which is a multi-component analyte.

[88] In its responses, the Region included a quotation from the protocol for method 8270 that because Method 8270 uses selective ion monitoring, it "may provide a lesser degree of confidence in compound identification." The Bishop affidavit added to that quotation the clause "unless multiple ions are monitored for each compound," and states that in the split-sample tests using method 8270, multiple ions were monitored. In reviewing the affidavit, however, the Region found that the original Regional quotation came from the protocol for Method 8270D (Feb. 2007, doc. H.5.3), while the Bishop quotation (affidavit par. 7) comes from the protocol for Method 8270C (1996), which appears to be an earlier version of the method. Thus, questions as to the degree of confidence remain.

[89] In a section which is headed "Improvements to Method 625," and which discusses only Method 625, the technical memorandum states, "For analysis of the effluent samples from Honouliuli WWTP….the following changes have been made." Doc. H.2.2., p. H-02-265; S.2.2, p. S-02-554.

Region was that some of the samples appeared to be grab samples rather than the composite samples that were required by the permit. CCH now asserts that grab samples were appropriate for comparison testing, even if not appropriate under the permits. Knowing the permits' requirements for composite testing, however, this, too, was an argument that could have been made during the comment period. And even with the new information presented with the Tenno declaration, questions remain. For example, there are places where laboratory reports for the 8270 samples state "grab" where the chain-of-custody forms submitted with the Tenno declaration say "composite".[90]

C. Conclusion regarding Dieldrin Test Methods

Region 9's findings that CCH's discharges could not meet dieldrin standards were reasonable. The Region appropriately determined that the alternative test results submitted by CCH during the comment period did not demonstrate the unreliability of the results obtained through Method 608, an EPA-approved method that is found in EPA's regulations at 40 CFR Part 136, was specifically provided for in both CCH permits, was specified in the ATSD as one of two methods (the other being Method 625, not Method 8270) to be used for 301(h) analyses of dieldrin in effluent, and has been used by CCH for years. The Region correctly analyzed the data it had – data showing significant exceedances of the dieldrin criterion.

It is neither necessary nor appropriate to remand for further consideration of the split-sample data or the Pt. Loma tentative decision. The Pt. Loma tentative decision is irrelevant. The newly-submitted documents related to the split-sample process could have been submitted

[90] As example, the information originally submitted by CCH in its comments included AR Doc. S.2.2, p. S-02-470, which was a laboratory data sheet indicated to be for a grab sample collected on 9/4/07. However, the handwritten chain-of-custody record in Doc. S.2.2, p. S-02-472, which appears to relate to the same sample (see footnote 83 above), indicated, in hand-writing, that the sample was an effluent composite, and neither the column for "grab" or "composite" was checked. Among the (unnumbered) data sheets attached to the Tenno Declaration is one that appears to correspond to page S-02-472 (although slightly different), which still includes the handwritten "composite" note, and neither box is checked.

during the public comment period, and it is inappropriate for them to be submitted now.

CONCLUSION

CCH has not demonstrated that the Region's section 301(h) decisions were based on clear error of law or fact or raise important policy considerations meriting review. CCH's challenges misinterpret portions of the CWA and EPA's implementing regulations. In correctly implementing the applicable statutory and regulatory requirements, the Region reasonably determined:

- that the CCH discharges would not meet several Hawaii or federal water quality standards after initial mixing in the receiving waters, using the definition of "zone of initial dilution" in the regulations implementing CWA section 301(h);
- that non-attainment of water quality standards would interfere with attainment and maintenance of water quality to assure protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife and allow for recreation in and on the water;
- that the proposed discharges from the Honouliuli facility would not meet water quality criteria for bacteria, for which CCH had not proposed to improve or alter its discharge with disinfection;
- that the CCH discharges would not meet Hawaii water quality standards for toxicity, as measured using the Pacific sea urchin test, including measurements demonstrating reproductive toxicity at concentrations two or three times as dilute as the critical initial dilution;
- that the *T. gratilla* fertilization test yields biologically significant results as established by Hawaii water quality standards;
- that the discharges would not meet the numeric criterion in the approved Hawaii water quality standard for chlordane; and
- that the discharges would not meet the applicable water quality criterion for dieldrin measured using the analytic procedures approved for measurement of that pollutant in wastewaters.

Some of the issues raised in the petition were not raised at all -- or were not raised with adequate specificity to give the Region an opportunity to respond -- during the comment periods, for example, that use of the ZID to determine attainment of applicable water quality standards preempts state standards, and that the Region should have used the recommended CWA section 304(a) criterion for chlordane rather than the approved Hawaii criterion (or even the Hawaii criterion "adjusted" to correct a possible typographical error).

Even if some of CCH's arguments, were valid, CCH's discharges still would not satisfy the demonstration requirements of CWA section 301(h). For example, CCH's discharges would not meet Hawaii water quality standards for ammonia nitrogen (at both facilities) or bacteria (at Honouliuli) at the boundary of a state mixing zone, and data that CCH does not contest demonstrate that the Honouliuli discharge would not meet the geometric mean in the bacteria criteria calculated based on several samples per month.

The Region's decisions to deny the applications for the modifications to secondary treatment requirements were made in the sound exercise of its discretion and in accordance with the statutory and regulatory requirements governing such decisions. Therefore, CCH's petition for review should be denied.

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Respectfully submitted,

Suzette E Leith

Of Counsel:
Stephen J. Sweeney
Office of General Counsel (2355A)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Suzette E. Leith
Office of Regional Counsel
EPA- Region IX (ORC-2)
75 Hawthorne St.
San Francisco, CA 94105
Tel: (415) 972-3884
Fax: (415) 947-3570