

GET Committee

From: Richelle Thomson <Richelle.Thomson@co.maui.hi.us>
Sent: Monday, September 02, 2019 3:49 PM
To: GET Committee
Subject: 2019-9-3 Correspondence from Corporation Counsel (GET-26)
Attachments: Acrobat.pdf

I will bring 15 copies to the meeting.

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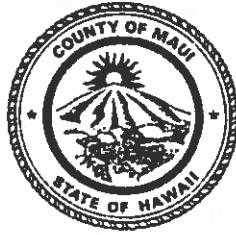
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September 3, 2019

TO: Michael J. Molina, Chair
Governance, Ethics, and Transparency Committee

FROM: Richelle M. Thomson, Deputy Corporation Counsel 

RE: Hawaii Wildlife, et al., v. County of Maui
(U.S. Supreme Court 18-260) (GET-26)

This memorandum addresses certain topics relevant to the Committee's consideration of a modification of the 2015 Settlement Agreement and Order in the above-identified lawsuit, potential withdrawal of the petition to the U.S. Supreme Court, and provides reference documents where appropriate.

The Federal Clean Water Act

The Clean Water Act (CWA) established the basic structure for regulating discharges of pollutants into "waters of the United States," which do not include groundwater. The CWA also sets water quality standards for surface waters. In the CWA, Congress differentiated between point source and nonpoint source pollution in controlling pollution to the waters of the United States. The CWA regulates point source permits through National Pollutant Discharge Elimination System (NPDES) permits, while nonpoint source pollution is controlled through federal oversight of state management programs, and other non-CWA programs.

Hawaii Wildlife v. County of Maui – the "Lahaina injection well lawsuit"

The Lahaina Wastewater Reclamation Facility (LWRF) distributes R-1 recycled water to users in West Maui. This is the highest quality of recycled water in the state. What is not utilized for irrigation is disposed of into 4 deep wells, where it mixes with groundwater and slowly flows to the ocean about a half-mile away, where groundwater modeling has shown that it exits along a 2-mile stretch of coastline.

In 2012, the plaintiff groups filed suit against the County, claiming that the use of the wells for disposal of excess recycled water into groundwater that eventually reaches the ocean requires a Clean Water Act NPDES permit in addition to the state and federal Safe Drinking Water Act permits that the facility has complied with for decades. Neither the state or federal regulators ever required an NPDES permit nor brought any type of enforcement against the County for lack of such permit for use of the wells.

The Hawaii District Court, acknowledging in its own order that it was not following precedent, created a new “conduit” theory of CWA liability when it ruled in favor of the plaintiffs on motions for summary judgement. In 2015, the parties agreed to settle the penalty phase of the lawsuit, which capped the potential damages and specifically was based upon the parties’ right to appeal to the Ninth Circuit Court of Appeals and onto the U.S. Supreme Court. The County has relied on and complied with the terms of this Settlement Agreement and Order for 4 years (**Attachment 1**).

The Ninth Circuit, in its review of the case, declined to adopt the Hawaii District Court’s new test and instead created its own “fairly traceable” test for Clean Water Act liability. The Ninth Circuit’s test blurred the lines between point and nonpoint source pollution, and applies to pollutants that reach navigable waters by nonpoint sources (such as groundwater) so long as the pollutants can be “traced” in more than “de minimis” amounts to a point source. This holding expands the CWA permitting to a vast number of other sources that were previously regulated under the CWA’s nonpoint source program and other regulatory programs.

For clarification, the Ninth Circuit’s decision did not address whether the recycled water caused any harm to the ocean water quality or aquatic life. The Ninth Circuit’s decision was, in simple terms, that if more than minimal pollutants can be traced to a source, regardless that they travel through groundwater, a nonpoint source, a Clean Water Act permit is required. A finding of harm to the receiving water body or aquatic life is not required.

Potential effects of Ninth Circuit’s decision

At the end of this memo is a list of municipalities, organizations, and entities that are similarly situated to the County of Maui, all of which filed amicus briefs in support of the County. These briefs are uploaded in full to Granicus. Many of these briefs address the fact that there are other state and federal laws that are better designed to address pollution resulting from discharges to groundwater. For example, the Lahaina WWRF has been operating in compliance with Underground Injection Control permits issued by both the Hawaii Department of Health and the Environmental Protection Agency. These UIC permits also

incorporate protections for the groundwater itself, as well as the near shore waters.

The National Association of Clean Water Agencies (NACWA), of which Maui County is a member, has supported the County throughout this lawsuit. NACWA has provided testimony to the GET Committee, and points out both in testimony and in its amicus brief filed with the U.S. Supreme Court:

The underlying issues in this case are not about leaving groundwater pollution unregulated, nor are they about lessening environmental protections. Discharges to groundwater are already regulated under other federal and state environmental statutes better suited to address such releases. The federal CWA was never intended to regulate discharges to groundwater and using the CWA permit program is like trying to fit a square peg in a round hole; doing so will have unintended and harmful consequences, while simultaneously failing to have any meaningful beneficial environmental or public health impacts. **(NACWA testimony dated August 30, 2019)**

CWA NPDES permits are designed to regulate direct discharges to surface water bodies. Pollutants are measured and regulated at the point of discharge, so that impacts to the receiving water can be managed. NPDES permit applications require precise location of the point of discharge by GPS coordinates. Going back to the Lahaina situation, the recycled water discharges into wells a half-mile inland, where the recycled water mixes with groundwater and any number of other sources of pollutants, and gradually flows seaward. En route, chemical processes occur, such as significant denitrification (decrease in nitrogen). When the recycled water/groundwater exits, it does so in a broad and diffuse manner – the opposite of an outfall pipe. Identifying a precise point of discharge may be an impossible task. The UIC permits under the federal and state Safe Drinking Water Act are the proper regulatory tool for this type of discharge.

As amicus groups and County personnel have pointed out, a variety of common uses will require that the County and the Hawaii Department of Health analyze whether a proposed or existing use requires an NPDES permit. To extrapolate from the Ninth Circuit's "fairly traceable" decision, this would likely at least include any project located within ½ mile from the coastline or a waterway (river, stream). Or any project that can be shown (through computer modeling or dye testing) to have a transit time of 4 years or less.

Even if these sources could obtain an NPDES permit, it is unlikely that even the County with its tertiary treated and UV disinfected recycled water – one step

below drinking water – would be able to technologically comply with ocean water quality limits if they are imposed at the inland point of disposal into groundwater. Also, as previously stated, this ignores any subsurface chemical changes that are known to occur as the recycled water mixes with groundwater and flows slowly to the ocean. For information, please see Dr. E. John List's testimony, **Attachment 5**.

Finally, there is the issue of state sovereignty over its groundwater resources, which under the Ninth Circuit's reasoning is transferred to the federal government under its reading of the Clean Water Act. While NPDES permitting authority may be delegated to the states, the federal EPA retains primary authority.

Clean Water Act – legal liability, penalties, and enforcement

The Clean Water Act is a strict-liability statute. The current maximum fine is \$54,833 per day, per violation (See, <https://www.govinfo.gov/content/pkg/FR-2019-02-06/pdf/2019-00785.pdf>). Lahaina has 4 wells, which the court considered each to be a separate source. There is a 5-year statute of limitations. The County utilizes 18 wells at its 4 wastewater reclamation facilities.

18 wells x \$54,833 = \$986,994 per day in potential maximum fines
x 365 days x 5 year statute of limitations period = \$1,801,264,050

The Clean Water Act also provides for potential criminal penalties (fines and jail time) for any person who negligently or knowingly discharges a pollutant from a point source into a water of the United States without an NPDES permit.

The CWA may be enforced by state or federal regulators. The CWA also includes a citizen's suit provision, which was the method utilized to bring suit against the County for its use of disposal wells in Lahaina.

U.S. Supreme Court review cannot "gut" the Clean Water Act

The plaintiffs brought suit to expand the Clean Water Act to discharges to groundwater. This is why municipalities and other entities across the nation have joined in support of the County of Maui seeking clarity from the U.S. Supreme Court. At this time, there is no settled law in this area, and the various federal circuits are deciding cases differently.

The lower courts themselves acknowledged that they were creating new tests for Clean Water Act liability. As is evidenced by the state and federal regulators never bringing an enforcement action against the County for its lack of an NPDES permit, the use of UIC disposal wells is not a "loophole" the County is trying to

exploit. Rather, the County must know which of its operations either need, or do not need, NPDES permits.

The U.S. Supreme Court is taking up this, and only this, limited question:

Whether the Clean Water Act requires a permit when pollutants originate from a point source but are conveyed to navigable waters by a nonpoint source, such as groundwater.

Other projects and uses impacted by the Ninth Circuit's decision

The Ninth Circuit's decision is currently the law in Hawaii, unless and until the U.S. Supreme Court holds differently. The Ninth Circuit's decision has far-reaching impacts to public infrastructure and resources, as well as to private property interests. The following types of systems, projects, or uses commonly utilize collection and discharge of water containing pollutants to the groundwater, which if they meet the court's test may require NPDES permits or modifications of the use so that no discharge occurs. **None of these required NPDES permits historically. Application of this permitting program to these sources is a vast expansion of the CWA.**

- Septic systems and cesspools – the County has converted its large capacity cesspools to septic systems, but these septic systems, depending on their location, may be in violation of the Clean Water Act under the Ninth Circuit's ruling. The U.S. EPA's correspondence, dated August 28, 2019, confirms such systems could require NPDES permits. **(Attachment 2)**
- Groundwater recharge (For example, injection of treated wastewater into the groundwater aquifer to supplement or "recharge" the aquifer and later treated and used for drinking water)
- Water reuse – the County's recycled water is used on properties (public and private) close to the ocean. Over-spray, over-irrigation, or irrigation during rain events, or even normal usage could cause recycled water to seep into the groundwater and out to the ocean
- Stormwater management and flood control projects
- Infiltration basins, settling ponds
- Green infrastructure such as rain gardens, grassed swales, permeable pavement
- Injection wells – there are almost 7,000 in the State of Hawaii, many located near the coast (See: <https://www.epa.gov/uic/uic-injection-well-inventory>)

Confusion as to whether the Ninth Circuit's Ruling Applies to Private Properties with Cesspools and Septic Systems

There has been some confusion regarding how to interpret Hawaii Department of Health Deputy Director of Environmental Health Keith Kawaoka's June 18, 2018, statement in a letter responding to Councilmember Tasha Kama's questions: "DOH has no plans to enforce NPDES permit requirements against existing septic systems and cesspools."

Please refer to the EPA's correspondence dated August 28, 2019 (**Attachment 2**): "If the Ninth Circuit's decision is upheld by the U.S. Supreme Court, all releases of pollutants from a point source to groundwater that ultimately reach a surface water could be subject to the NPDES permit program. This expansion of the Act's coverage could require NPDES permits for commonplace and ubiquitous activities such as releases from homeowners' backyard septic systems that find their way to jurisdictional surface waters through groundwater."

Whether the state or federal regulators enforce against private property owners with **existing** cesspools or septic systems does not mean that the property owners are exempt from the law and may be in violation of the Clean Water Act if their systems connect to the groundwater and are traceable to the ocean. Such property owners additionally may face citizen's suits. Additionally, DOH's letter does not address how or whether it intends to process applications for future septic systems in coastal areas or near gulches or other waterways, or whether such systems will even be allowed in these areas.

For additional reference as to the location of on-site disposal systems, including septic systems and cesspools, as well as the "traceability" of these sources to the near shore waters, please see:

Whittier, Robert, and El-Kadi, Aly. *Human Health and Environmental Risk Ranking of On-Site Sewage Disposal Systems for the Hawaiian Islands of Kauai, Molokai, Maui, and Hawaii* (2014), prepared for DOH/SDWB, available at https://health.hawaii.gov/wastewater/files/2015/09/OSDS_NI.pdf (Portions of the 257-page report are attached as **Attachment 3**). "The majority of these OSDS (80 percent) are cesspools where the effluent receives no treatment prior to being released to the environment. It is estimated that statewide OSDS discharge nearly 70 million gallons per day of minimally treated effluent to groundwater. This produces an estimated nutrient load to the environment of over 12,500 and 3,500 kilograms per day of nitrogen and phosphorus, respectively."

Identifying locations of sewage pollution within Puako's watershed for management actions (**Attachment 4**)

“The condition at Pūako is that cesspools are in close proximity to the water table, which is 1 to 5 meters in elevation. As a result, homeowners building new homes or renovating existing ones are required to install septic tanks. Presently, there are 49 cesspools, 66 septic tanks, 23 ATUs, and 21 home where the type of OSDS is unknown.” Tracer dye tests on cesspools, septic systems, and advanced treatment units showed that dye reached the shoreline in less than 5 hours up to 10 days.

**Amicus Brief Support of Parties Similarly Situated with County
County of Maui Supreme Court Petition**

1. Municipal briefs: two separate briefs joined by many organizations – National Association of Clean Water Agencies (NACWA) brief and National Conference of State Legislatures brief, including the following:

NACWA:

- San Francisco Public Utilities Commission
- Denver Metro Wastewater Reclamation District
- City of New York

National Conference of State Legislatures:

- WaterReuse Association
- California Association of Sanitation Agencies
- Association of California Water Agencies
- Idaho Water Users Association
- Idaho Water Resources Board
- International Municipal Lawyers Association
- International City/County Management Association
- League of California Cities
- National Association of Counties
- National League of Cities
- National Water Resources Association
- Western Coalition of Arid States

2. Federal Water Quality Coalition brief
3. Water Systems Council and National Ground Water Association brief
4. Florida organizations brief
 - Florida Water Environment Association-Utility Council
 - Florida Rural Water Association
 - Florida Electric Power Coordinating Group-Environmental Committee

5. Agricultural Business Organizations brief:

- Agricultural Retailers Association
- CropLife America
- Family Farm Alliance
- The Fertilizer Institute
- American Farm Bureau Federation
- National Pork Producers Council
- National Cattlemen's Beef Association
- National Corn Growers Association

6. States brief:

- Alabama
- Alaska
- Arkansas
- Florida
- Georgia
- Idaho
- Indiana
- Kansas
- Kentucky
- Louisiana
- Mississippi
- Missouri
- Montana
- Nebraska
- Ohio
- Oklahoma
- South Carolina
- Texas
- Utah
- West Virginia
- Wyoming

7. National Association of Home Builders brief

ATTACHMENT 1
Resolution

No. 15-107

AUTHORIZING SETTLEMENT IN HAWAII WILDLIFE FUND, ET AL. V.
COUNTY OF MAUI, CIVIL NO. 12-00198 SOM BMK

WHEREAS, Plaintiffs Hawaii Wildlife Fund, et al. filed a lawsuit in the United States District Court on April 16, 2012, Civil No. 12-00198 SOM BMK, against the County of Maui, alleging violations under the Federal Water Pollution Control Act, also known as the Clean Water Act; and

WHEREAS, by Resolution 15-75, the Council approved settlement of this case; and

WHEREAS, the County of Maui, to avoid incurring expenses and the uncertainty of a judicial determination of the parties' respective rights and liabilities, will attempt to reach a resolution of this case by way of a negotiated settlement or Offer of Judgment; and

WHEREAS, the Department of the Corporation Counsel has requested authority to settle this case under the terms set forth in an executive meeting before the Committee of the Whole; and

WHEREAS, having reviewed the facts and circumstances regarding this case and being advised of attempts to reach resolution of this case by way of a negotiated settlement or Offer of Judgment by the Department of the Corporation Counsel, the Council wishes to authorize the settlement; now, therefore,

Resolution No. 15-107

BE IT RESOLVED by the Council of the County of Maui:

1. That it hereby approves settlement of this case under the terms set forth in an executive meeting before the Committee of the Whole; and

2. That it hereby authorizes the Mayor to execute a Release and Settlement Agreement on behalf of the County in this case, under such terms and conditions as may be imposed, and agreed to, by the Corporation Counsel; and

3. That it hereby authorizes the Director of Finance to satisfy said settlement of this case, under such terms and conditions as may be imposed, and agreed to, by the Corporation Counsel; and

4. That certified copies of this resolution be transmitted to the Mayor, the Director of Finance, the Director of Environmental Management, and the Corporation Counsel.

APPROVED AS TO FORM AND LEGALITY:



RICHELLE M. THOMSON
Deputy Corporation Counsel
County of Maui

COUNCIL OF THE COUNTY OF MAUI

WAILUKU, HAWAII 96793

CERTIFICATION OF ADOPTION

It is HEREBY CERTIFIED that RESOLUTION NO. 15-107 was adopted by the Council of the County of Maui, State of Hawaii, on the 4th day of September, 2015, by the following vote:

MEMBERS	Michael B. WHITE Chair	Donald S. GUZMAN Vice-Chair	Gladys C. BAISA	Robert CARROLL	Eleanora COCHRAN	Donald G. COUCH, JR.	S. Stacy CRIVELLO	G. Riki HOKAMA	Michael P. VICTORINO
ROLL CALL	Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye



COUNTY CLERK

ATTACHMENT 1

DAVID L. HENKIN #6876
SUMMER KUPAU-ODO #8157
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Attorneys for Plaintiffs*

IN THE UNITED STATES DISTRICT COURT
DISTRICT OF HAWAI'I

HAWAI'I WILDLIFE FUND, a)	CIVIL NO. 12-00198 SOM BMK
Hawai'i non-profit corporation,)	
SIERRA CLUB - MAUI GROUP, a)	SETTLEMENT AGREEMENT AND
non-profit corporation, SURFRIDER)	PROPOSED ORDER RE:
FOUNDATION, a non-profit)	REMEDIES; EXHIBIT A
corporation, and WEST MAUI)	
PRESERVATION ASSOCIATION, a)	
Hawai'i non-profit corporation,)	
)	
Plaintiffs,)	
)	
v.)	
)	
COUNTY OF MAUI,)	
)	
Defendant.)	

* Pursuant to Local Rule 10.2(b), please refer to the signature page for the complete list of parties represented.

SETTLEMENT AGREEMENT AND ~~PROPOSED~~ ORDER RE: REMEDIES

WHEREAS, on April 16, 2012, Plaintiffs Hawai'i Wildlife Fund, Sierra Club - Maui Group, Surfrider Foundation, and West Maui Preservation Association (collectively, "Plaintiffs") filed a Complaint against Defendant County of Maui ("Defendant"), since amended, alleging violations of section 301(a) of the federal Clean Water Act ("CWA"), 33 U.S.C. § 1311(a), and Haw. Rev. Stat. § 342D-50(a) associated with the discharge into the nearshore ocean waters of West Maui of wastewater from injection wells operated by Defendant at the Lahaina Wastewater Reclamation Facility ("LWRF"), which is located at 3300 Honoapi'ilani Highway, Lahaina, Hawai'i 96761;

WHEREAS, Defendant maintains it has authorization under State and federal Safe Drinking Water Act permits for its four underground injection control wells that allows Defendant to discharge treated wastewater to groundwater that has a hydrological connection to navigable waters;

WHEREAS, on May 30, 2014 and January 23, 2015, the Court found that Defendant's discharges of treated wastewater from each of the LWRF injection wells without a National Pollutant Discharge Elimination System ("NPDES") permit violate the CWA;

WHEREAS, on June 25, 2015, the Court held Defendant is not immune from civil penalties because of a lack of fair notice that an NPDES permit was required;

WHEREAS, Plaintiffs and Defendant (collectively, “the Parties”) have agreed to enter into this Settlement Agreement and Order Re: Remedies (“Agreement”), without any admission of fact or law; and

WHEREAS, it is in the interest of the public, the Parties, and judicial economy to resolve the remaining issues related to remedies without protracted litigation;

NOW, THEREFORE, IT IS STIPULATED BY AND BETWEEN THE PLAINTIFFS AND DEFENDANT, AND THE COURT ORDERS AS FOLLOWS:

1. This Agreement resolves all remaining issues in the remedies phase of the above-captioned lawsuit. The effective date (“Effective Date”) of this Agreement is the date the Agreement is entered by the Court.

DEFENDANT’S RESERVATION OF RIGHT TO APPEAL

2. By entering into this Agreement, Defendant does not admit liability. The Parties agree Defendant reserves the right to appeal any and all rulings of this Court other than the entry of this Agreement, including the Court’s rulings on liability and fair notice.

3. Appeals may be made to the Court of Appeals for the Ninth Circuit and the Supreme Court.

4. Defendant's obligations under Paragraph 8 shall be triggered by this Court's entry of this Agreement. Defendant's obligations under Paragraphs 9 through 13 herein are triggered by a Final Judgment that (1) discharges of treated wastewater from any of the LWRF injection wells without an NPDES permit violate the CWA and (2) Defendant is not immune from civil penalties because of a lack of fair notice that an NPDES permit was required. For purposes of this Agreement, the phrase "Final Judgment" is defined as in the Equal Access to Justice Act, 28 U.S.C. § 2412(d)(2)(G).

5. In the event of a remand, the Parties agree that the remedies provided for in this Agreement control and are binding, that no additional remedies shall be assessed and that this Agreement and the remedies provided herein resolve all remaining issues regarding the remedy phase of the above-captioned lawsuit. Notwithstanding the foregoing, neither Party waives its right to litigate any remanded issue(s), including a liability determination as to any well or a ruling on fair notice.

LIMITATION ON FUTURE ACTIONS PENDING APPEAL

6. From the date of execution of this Agreement through Final Judgment, Plaintiffs shall not bring any claim in any State or federal court against

Defendant seeking additional civil penalties or injunctive or declaratory relief for alleged violations under State or federal law based on the lack of an NPDES permit for the LWRF's injection wells.

7. No penalties shall accrue or otherwise be imposed in this action from the Effective Date through the Final Judgment.

NPDES PERMIT

8. Defendant shall make good faith efforts to secure and comply with the terms of an NPDES permit for the LWRF injection wells. Such good faith efforts shall include, but not be limited to, cooperating in good faith with the Hawai'i Department of Health to secure an NPDES permit, including providing additional information when requested. Defendant's obligations under this paragraph as to any well shall cease only in the event of a Final Judgment that discharges of treated wastewater from that well without an NPDES permit do not violate the CWA.

SUPPLEMENTAL ENVIRONMENTAL PROJECT

9. In the event of a Final Judgment that (1) discharges of treated wastewater from any of the LWRF injection wells without an NPDES permit violate the CWA and (2) Defendant is not immune from civil penalties because of a lack of fair notice that an NPDES permit was required, Defendant shall fund and implement one or more projects located in West Maui, to be valued at a minimum

of Two Million Five Hundred Thousand Dollars (\$2.5 million), the purpose of which is to divert treated wastewater from the LWRF injection wells for reuse, with preference given to projects that meet existing demand for freshwater in West Maui. Examples of projects that would further this purpose include, but are not limited to, expansion of the R-1 distribution system for the LWRF's treated wastewater and indirect or direct potable reuse. Projects under this Agreement shall not include projects already required to be implemented by third parties.

10. No later than thirty (30) days following the Final Judgment as provided for in Paragraphs 4 and 9, the Parties shall meet and confer (in-person not required) in a good faith effort to reach agreement on one or more projects that further the purpose set forth in Paragraph 9, which agreement shall not be unreasonably withheld. If the Parties are unable to reach agreement within sixty (60) days of the Final Judgment as provided for in Paragraphs 4 and 9, Defendant shall, within ninety (90) days thereafter, instead pay a penalty of Two Million Five Hundred Thousand Dollars (\$2.5 million) to the U.S. Treasury. If the Parties reach agreement on one or more projects that do not meet the Two Million Five Hundred Thousand Dollars (\$2.5 million) value threshold, the balance shall be paid to the U.S. Treasury (for example, if a mutually agreed-upon project is valued at \$1.5 million, with no agreement as to other projects, Defendant would submit a \$1.0 million penalty payment to the U.S. Treasury).

11. No later than two (2) years following a Final Judgment as provided for in Paragraphs 4 and 9, Defendant shall complete the design of the project(s) agreed upon pursuant to Paragraph 10. Defendant shall complete the construction of those project(s) no later than five (5) years of the Final Judgment.

12. Defendant shall provide notification to Plaintiffs in accordance with Paragraph 27 when design of the project(s) is complete and when construction is complete.

CIVIL PENALTIES

13. In the event of a Final Judgment that (1) discharges of treated wastewater from any of the LWRF injection wells without an NPDES permit violate the CWA and (2) Defendant is not immune from civil penalties because of a lack of fair notice that an NPDES permit was required, Defendant shall pay a penalty in the amount of One Hundred Thousand Dollars (\$100,000.00) to the U.S. Treasury within ninety (90) days of the Final Judgment.

DELAY IN PERFORMANCE AND STIPULATED PENALTIES

14. Unless excused due to a Force Majeure event as defined below, Defendant shall be liable for Stipulated Penalties for each day it fails to comply with any of its obligations under Paragraph 11, as follows:

- a. \$250 per day for the first 15 days;

- b. \$500 per day for days 16 to 60; and
- c. \$1,000 per day for days 61 and beyond.

15. Stipulated Penalties shall begin to accrue on the day a violation occurs and shall continue to accrue through the final day of the correction of the violation.

- a. Plaintiffs may seek Stipulated Penalties under this Section by making a written demand. Plaintiffs shall send notice to Defendant in accordance with Paragraph 27 that Plaintiffs intend to seek Stipulated Penalties and stating the basis for Plaintiffs' demand.
- b. If Defendant disputes Plaintiffs' demand for Stipulated Penalties, the Parties shall meet and confer (in-person not required) in a good faith effort to resolve the dispute. If the Parties are unable to resolve their dispute within ten (10) days after receipt of the written notice, Plaintiffs may submit the dispute to the Court for resolution. Stipulated Penalties shall continue to accrue during the Court's resolution of any dispute, with interest on accrued penalties payable and calculated at the rate established by the Secretary of the Treasury, pursuant to 28 U.S.C. § 1961, but need not be paid until the following:

- i. If Plaintiffs prevail in whole or in part in a Court action regarding Stipulated Penalties, Defendant shall pay all accrued penalties determined by the Court to be owing, together with interest, within thirty (30) days of receiving the Court's decision or order, except as provided in subparagraph ii., below. Defendant shall also pay Plaintiffs' costs of litigation (including reasonable attorneys' fees).
- ii. If any party appeals the District Court's decision, Defendant shall pay all accrued penalties determined to be owing, together with interest, within fifteen (15) days of receiving the final appellate court decision. If Plaintiffs prevail in whole or in part in an appeal regarding Stipulated Penalties, Defendant shall also pay Plaintiffs' costs of litigation (including reasonable attorneys' fees).
- c. If Defendant does not dispute Plaintiffs' demand for Stipulated Penalties, within thirty (30) days of service of the written demand, Defendant shall pay the Stipulated Penalty set forth in Plaintiffs' demand.

d. Defendant shall pay any Stipulated Penalties by certified check or cashier's check in the amount due, payable to: Hawai'i Department of Health, Environmental Response Revolving Fund and provide timely proof of payment to Plaintiffs in accordance with Paragraph 27.

16. The payment of Stipulated Penalties shall not alter in any way Defendant's obligation to comply with the terms of this Agreement.

FORCE MAJEURE

17. A "Force Majeure event" is any event beyond the control of Defendant, Defendant's employees, consultants or contractors, or any entity controlled by Defendant, that delays or prevents the performance of any obligation under this Agreement despite Defendant's best efforts to fulfill the requirements of the Agreement and includes, but is not limited to, acts of God or war. "Best efforts" includes anticipating any potential Force Majeure event and addressing the effects of any such event (a) as it is occurring and (b) after it has occurred, to prevent or minimize to the greatest extent possible any resulting delay in fulfillment of the requirements of the Agreement. "Force Majeure" does not include Defendant's financial inability to perform any obligation under this Agreement.

18. If and to the extent Defendant is prevented from performing any of its obligations under Paragraph 11 by a Force Majeure event, while Defendant is so prevented, Defendant shall be relieved of its obligations to perform and pay Stipulated Penalties, but shall make its best efforts to continue to perform its obligations under this Agreement as far as reasonably practicable.

19. If and to the extent Defendant suffers a delay in performing as a result of a Force Majeure event, Defendant shall be entitled to a reasonable extension of time to complete performance.

20. Defendants shall provide timely notice orally or by electronic transmission as soon as practicable, after the time Defendant first knew of, or by the exercise of due diligence, should have known of, a claimed Force Majeure event.

21. Defendant shall also provide notice to Plaintiffs in accordance with Paragraph 27 within seven (7) business days of the time Defendant first knew of, or by the exercise of due diligence, should have known of, the event. The notice shall state the nature and duration of the Force Majeure event, its cause(s), the anticipated delay of performance of any obligation(s) under Paragraph 11, a schedule for carrying out those obligations, and Defendant's rationale for attributing the delay to a Force Majeure event.

22. If Defendant provides notice of a claimed Force Majeure event in accordance with Paragraphs 20 and 21, Plaintiffs shall, within a period not to exceed twenty (20) days from the date of Defendant's notice of the event, provide a response to Defendant in accordance with Paragraph 27 about whether Plaintiffs agree that a Force Majeure event has occurred. Plaintiffs "agree that a Force Majeure event has occurred" when they agree with Defendant in writing as to both the nature and duration of the event.

23. If Plaintiffs fail to provide a written response to Defendant within the twenty (20) day period provided for in Paragraph 22, Plaintiffs will have been deemed to agree with Defendant's determination that a Force Majeure event has occurred.

24. If Defendant provides notice of a claimed Force Majeure event in accordance with this Agreement and:

- a. Plaintiffs timely agree that a Force Majeure event has occurred as provided in Paragraph 22, the Parties may agree to extend the time for Defendant to come into compliance with the Agreement by making the appropriate modification via stipulation pursuant to Paragraph 32; or
- b. Plaintiffs do not agree that a Force Majeure event has occurred or fail to timely provide the response pursuant to Paragraph 22,

Defendant may, within thirty (30) days of receipt of written notice of the disagreement or the deadline for Plaintiffs' response, file a written motion with the Court seeking an extension of time to perform. If Defendant does not file a motion within that time frame, Defendant waives its claim that a Force Majeure event has occurred.

25. To prevail on any written motion under Paragraph 24(b), Defendant bears the burden of proving, by clear and convincing evidence, that any claimed Force Majeure event is a Force Majeure event, that Defendant gave the notice required by this Agreement, that the Force Majeure event caused any delay in Defendant's performance of any obligation under Paragraph 11 that Defendant claims was attributable to that event, and that Defendant exercised best efforts to avoid or minimize any delay caused by the event.

26. When Plaintiffs agree or the Court rules that a Force Majeure event has occurred that delays performance of an obligation under Paragraph 11, Defendant shall not be liable for Stipulated Penalties for the time period of the delay caused by the Force Majeure event.

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ADDRESSES FOR NOTICES, SUBMISSIONS, OTHER COMMUNICATIONS

27. Unless otherwise specified herein, whenever notifications, submissions, and/or communications are required by this Agreement, they shall be in writing, and be addressed and sent via U.S. Mail or electronic mail as follows:

To Plaintiffs, via Plaintiffs' attorney of record:

David Lane Henkin
Earthjustice
850 Richards Street, Suite 400
Honolulu, Hawai'i 96813
Phone: (808) 599-2436
E-mail: dhenkin@earthjustice.org

To Defendant, via Defendant's attorney of record:

Patrick K. Wong
Corporation Counsel
County of Maui
200 S. High Street
Wailuku, Hawai'i 96793
Phone: (808) 270-7740
Email: pat.wong@co.maui.hi.us and corpcoun@co.maui.hi.us

28. Any Party may, by written notice to the other Party, change its designated notice recipient or notice address provided above.

ATTORNEYS' FEES AND COSTS

29. Within thirty (30) days of the Effective Date, the Parties will meet and confer (in-person not required) in a good faith effort to reach agreement as to the amount of Plaintiffs' costs of litigation (including reasonable attorneys' and expert

witness fees) pursuant to Section 505(d) of the CWA, 33 U.S.C. § 1365(d), for proceedings before this Court. If the Parties are unable to reach agreement, Plaintiffs may file a motion with this Court for the recovery of fees and costs no later than sixty (60) days after the Effective Date, pursuant to Federal Rule of Civil Procedure 54(d)(2)(B).

30. Defendant shall not be required to pay Plaintiffs' attorneys' fees and costs until ninety (90) days following Final Judgment. During any appeals period, interest on any award of attorneys' fees and costs shall be calculated at the rate established by the Secretary of the Treasury, pursuant to 28 U.S.C. § 1961, but need not be paid until ninety (90) days following Final Judgment.

ENFORCEMENT OF THIS AGREEMENT

31. This Court has jurisdiction to enforce the terms of this Agreement. See Kokkonen v. Guardian Life Ins. Co. of America, 511 U.S. 375 (1994).

32. This Agreement may be modified by the Court upon good cause shown by written stipulation between the Parties filed with and approved by the Court.

33. In the event that either Party seeks to enforce the terms of this Agreement, including any of the deadlines for any action set forth herein, or in the event of a dispute arising out of or relating to this Agreement, or in the event that either Party believes that the other Party has failed to comply with any term or

condition of this Agreement, the Party raising the dispute, or seeking enforcement, shall provide the other Party with written notice of the claim. The Parties agree that they will meet and confer (in-person not required) at the earliest possible time in a good faith effort to resolve the claim before bringing any matter to the Court. If the Parties are unable to resolve the claim within ten (10) days after the notice, either Party may bring the claim to the Court.

ENTRY OF AGREEMENT

34. Upon the Government's confirmation of no objection to, or no action on, this Agreement within forty-five (45) days of receipt of this Agreement pursuant to 40 C.F.R. § 135.5, the Court shall enter this Agreement and enter judgment in this action. The Parties shall not withdraw their consent to this Agreement during the period of Governmental review of this Agreement without further notice; provided, however that either Party has the right to withdraw its consent to this Agreement if, prior to entry, the Court changes or the Government objects to any term or provision of this Agreement.

EPA FOIA DOCUMENTS

35. Plaintiffs agree that all EPA FOIA documents obtained by the County in response to a May 2, 2014, FOIA request that were submitted to the Court are authentic and that Plaintiffs will not challenge the authenticity of the documents.

A listing of all EPA FOIA documents that were submitted to the Court is attached hereto and incorporated herein as Exhibit A.

AUTHORIZATION TO SIGN

36. This Agreement shall apply to and be binding upon the Parties, their members, delegates, and assigns. The undersigned representatives certify that they are authorized by the Party or Parties they represent to enter into the Agreement and to execute and legally bind that Party or Parties to the terms and conditions of this Agreement.

COUNTY OF MAUI
200 South High Street
Wailuku, Maui, Hawai'i 96793

By: /s/ Alan M. Arakawa
ALAN M. ARAKAWA
Its Mayor

September 24, 2015
DATE

EARTHJUSTICE
DAVID L. HENKIN
SUMMER KUPAU-ODO
850 Richards Street, Suite 400
Honolulu, Hawai'i 96813

By: /s/ David L. Henkin
DAVID L. HENKIN
Attorneys for Plaintiffs Hawai'i Wildlife
Fund, Sierra Club – Maui Group,
Surfrider Foundation, and
West Maui Preservation Association

September 24, 2015
DATE

APPROVED AS TO FORM AND LEGALITY

By: /s/ Richelle M. Thompson
RICHELLE M. THOMSON
Deputy Corporation Counsel
Attorney for Defendant
County of Maui

September 24, 2015
DATE

DATED: Honolulu, Hawaii; November 17, 2015.



/s/ Susan Oki Mollway
Susan Oki Mollway
Senior United States District Judge

Hawai'i Wildlife Fund, et al. v. County of Maui, Civil No. 12-00198 SOM-BMK
(D. Haw.); SETTLEMENT AGREEMENT AND ~~[PROPOSED]~~ ORDER RE:
REMEDIES; EXHIBIT A

ATTACHMENT 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901



AUG 29 2019

Mr. Michael J. Molina
Chair, GET Committee
County Council
County of Maui
200 S. High Street
Wailuku, Maui, HI 96793

Subject: Hawaii Wildlife Fund, et al. v. County of Maui (USSC 18-260)

Dear Mr. Molina:

On behalf of EPA, this is in response to your correspondence dated August 27, 2019 inviting Mr. David Smith, EPA Region 9, to make a presentation at the Committee's meeting on September 3, 2019. Consistent with Ms. Anna Wildeman's August 28, 2019 email to Ms. Richelle Thomson, EPA Region 9 will not be submitting a presentation. For more information on this matter, please refer to the August 28, 2019 email a copy of which is enclosed for your convenience.

Sincerely,

A handwritten signature in cursive script, appearing to read "Laurie Kermish".

Laurie Kermish
Water & General Law Branch Chief
Office of Regional Counsel

Enc.

cc: Sylvia Quast, Regional Counsel
David Smith, Manager Water Division

From: Wildeman, Anna [<mailto:wildeman.anna@epa.gov>]
Sent: Wednesday, August 28, 2019 1:04 PM
To: Richelle Thomson <Richelle.Thomson@co.maui.hi.us>
Cc: David Fotouhi <Fotouhi.David@epa.gov>
Subject: RE: Hawaii Wildlife v. County of Maui (USSC 18-260)

Hi Richelle,

Thank you for the note and the call this afternoon. As we discussed, it is unusual for EPA to provide live or written testimony for local government proceedings, so EPA will not be submitting formal testimony for the Committee meeting next week. However, I am providing this email to address some of the questions you raised on the phone about EPA's April 23, 2019 *Interpretive Statement on Application of the Clean Water Act National Pollutant Discharge Elimination System Program to Releases of Pollutants >From a Point Source to Groundwater* (84 FR 16810) (Interpretive Statement) and the interaction with the Clean Water Act NPDES permit programs.

As explained in detail in the Interpretive Statement, EPA has concluded that the CWA is best read as excluding all releases of pollutants from a point source to groundwater from NPDES program coverage, regardless of a hydrologic connection between the groundwater and jurisdictional surface water. However, EPA has chosen not to apply the Interpretive Statement in the Ninth and Fourth Circuits to maintain the status quo pending further clarification by the Supreme Court. 84 FR 16812 n. 1.

The County of Maui is subject to the Ninth Circuit Court of Appeals' decision in *Hawai'i Wildlife Fund v. Cty of Maui*, 886 F.3d 737 (9th Cir. 2018), and therefore discharges of pollutants to groundwater that ultimately reach jurisdictional surface waters and are "fairly traceable" back to a point source and more than *de minimis* are currently subject to the NPDES permit program. *Id.* at 749. If the Ninth Circuit's decision is upheld by U.S. Supreme Court, all releases of pollutants from a point source to groundwater that ultimately reach a surface water could be subject to the NPDES permit program. This expansion of the Act's coverage could require NPDES permits for commonplace and ubiquitous activities such as releases from homeowners' backyard septic systems that find their way to jurisdictional surface waters through groundwater. 84 FR 16823. These activities would therefore fall within EPA's state program oversight responsibilities and could subject unpermitted discharges to state or federal enforcement or citizen suit liability under the Clean Water Act.

Regards,
Anna

Anna Wildeman
Principal Deputy Assistant Administrator
Office of Water
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460
202-564-5700
Wildeman.Annar@epa.gov

ATTACHMENT 3

HUMAN HEALTH AND ENVIRONMENTAL RISK RANKING OF ON-SITE SEWAGE DISPOSAL SYSTEMS FOR THE HAWAIIAN ISLANDS OF KAUAI, MOLOKAI, MAUI, AND HAWAII

FINAL

Robert B. Whittier and Aly I. El-Kadi

September 2014

PREPARED FOR

State of Hawai'i Department of Health
Safe Drinking Water Branch

Principal Investigator: Aly I. El-Kadi
School of Ocean and Earth Science and Technology
Department of Geology and Geophysics
University of Hawai'i at Mānoa
Honolulu, Hawai'i 96822

**OSDS Density
(units/mi²)**

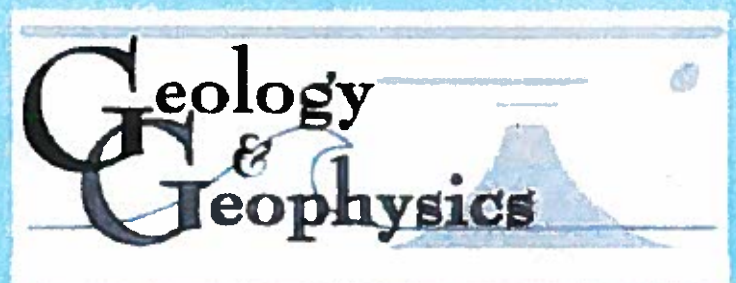
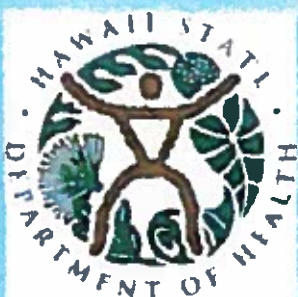


Table ES-1. The OSDS inventory results and effluent discharge totals

Island	Total OSDS	CLASS I	CLASS II	CLASS III	CLASS IV	Effluent Discharge (mgd)	N FLUX (kg/d)	P FLUX (kg/d)
Hawaii	58,982	8,951	694	68	49,344	34.6	6,607	1,848
Kauai	18,011	3,107	910	304	13,688	12.5	2,115	607
Maui	16,883	4,015	559	75	12,242	11.6	1,869	554
Molokai	1,956	477	33	4	1,442	1.2	206	59
Oahu*	14,606	2,620	534	199	11,253	9.7	1,732	500
Total	110,438	19,170	2,730	650	87,969	69.6	12,529	3,568

*Oahu OSDS data taken from Whittier and El-Kadi (2009)

Class I – OSDS utilizing soil treatment

Class II – Septic systems discharging to a seepage pit

Class III – Aerobic treatment units discharging to a seepage pit

Class IV – Cesspools

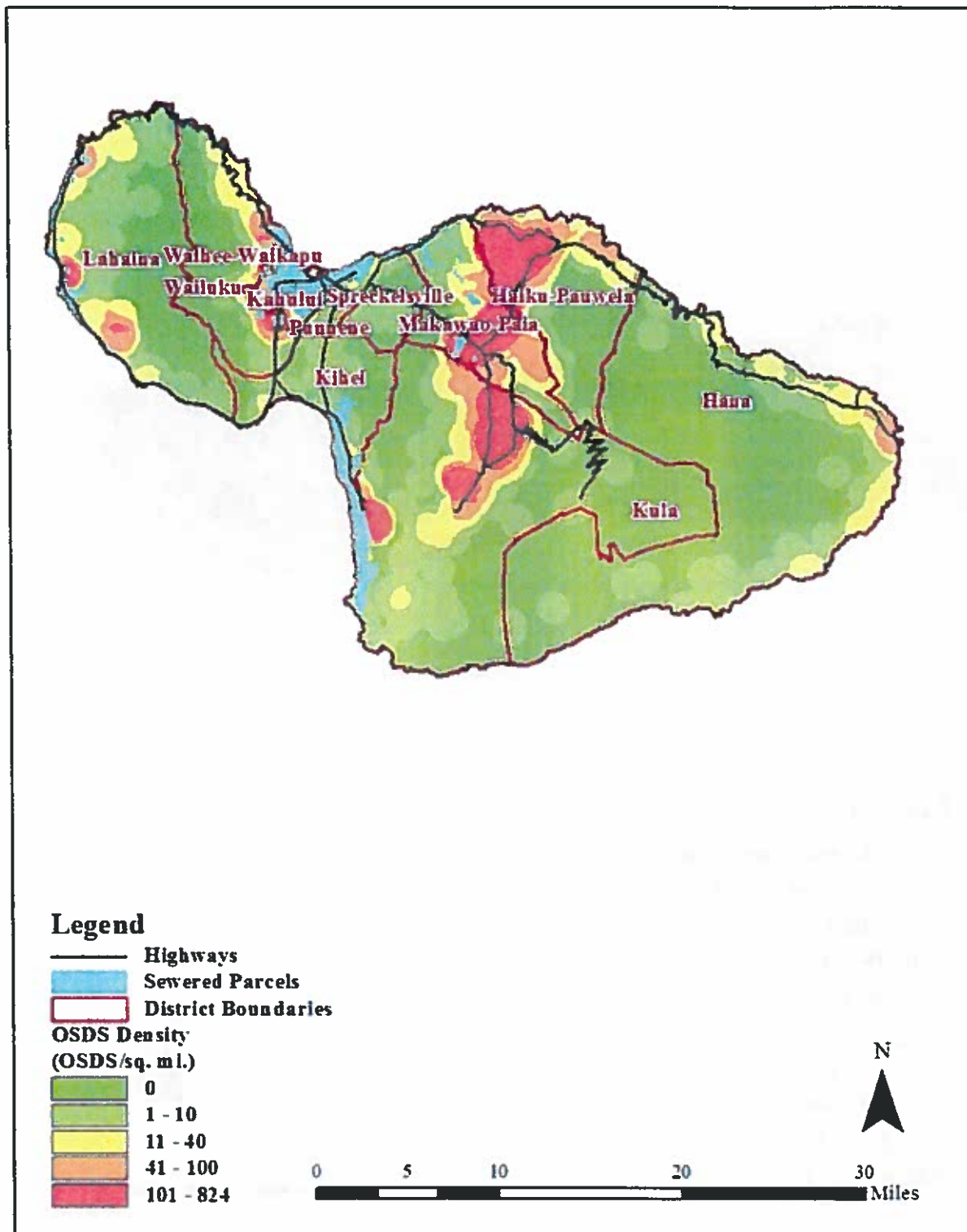


Figure ES-3. The distribution of OSDS density on Maui shown with district boundaries and sewered areas

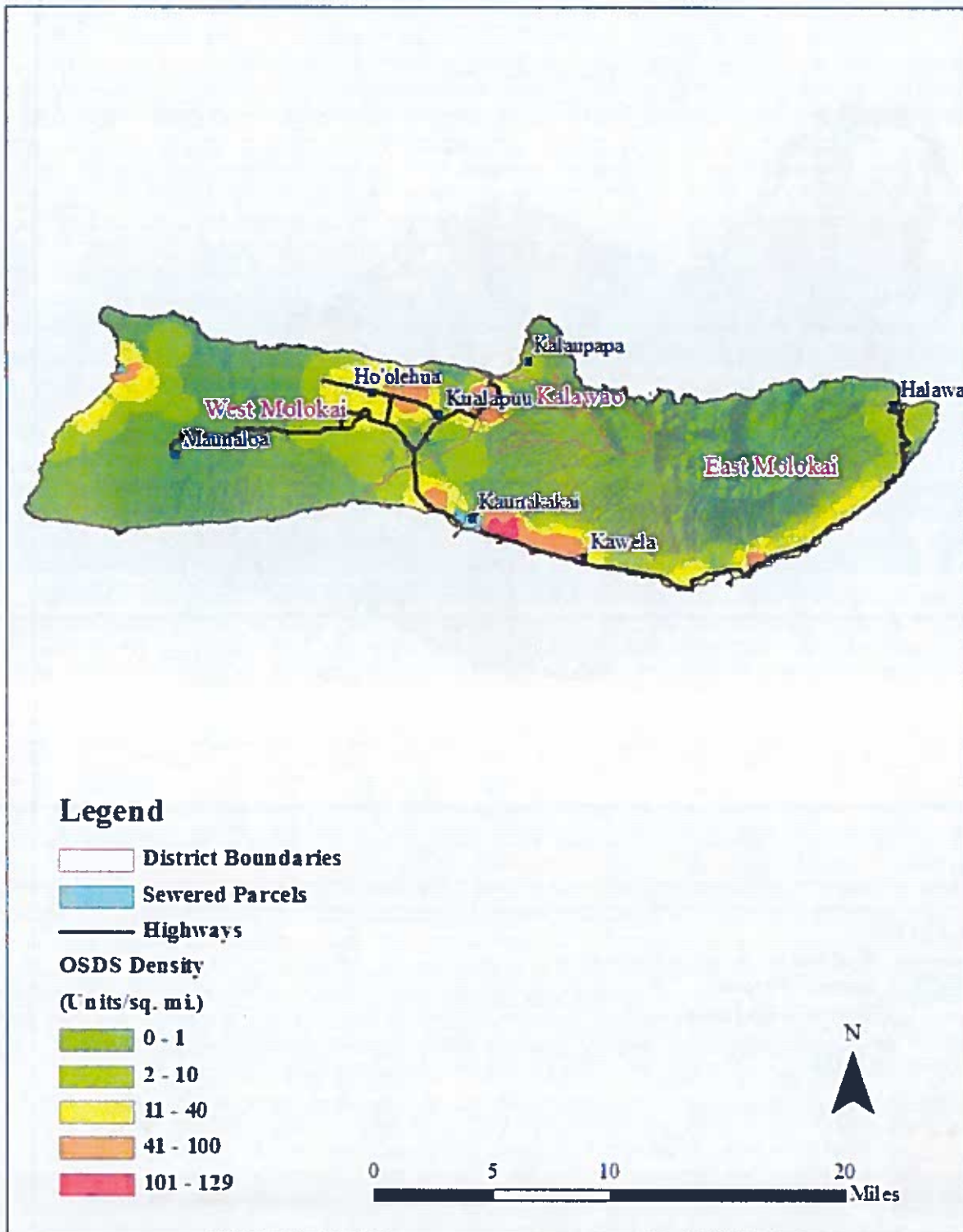


Figure ES-4. The OSDS density distribution on Molokai shown with district boundaries and sewered areas

method estimation method. These non-residential activities included businesses, churches, schools, parks, and condominiums. The OSDS discharge rate for non-residential systems was based on estimates given in Metcalf and Eddy (1991).

EFFLUENT QUALITY

The mass of nutrients reaching surface or coastal waters determines the degree of impact on the receiving bodies. The risk to human health is driven by the concentration and types of contaminants in drinking water impacted by OSDS. It is beyond the scope of this study to evaluate all of the contaminants in the OSDS effluent. The contaminants of greatest concern are the nutrients that cause excessive bio-productivity in surface waters and, in the case of nitrate, toxic substances. The nutrients evaluated, nitrogen and phosphorous, were considered with nitrogen used as the primary species to evaluate risk. This approach was taken because nitrogen can be a limiting nutrient in aquatic and marine waters, making it a contaminant of concern. The transport of nitrogen in the form of nitrate can be more reliably modeled due its conservative nature in oxic waters. The contaminant flux to the environment was based on concentration estimates given by the Water Resources Research Center (WRRC) and Engineering Solutions, Inc. (2008). The concentration was then multiplied by the estimated effluent rate to compute the total nutrient load. Table 2-3 lists the effluent characteristics by OSDS type.

Table ES-3. Effluent Characteristics of OSDS Classes

(WRRC and Engineering Solutions, 2008)

OSDS Class	Typical Nitrogen Concentration (mg/L as nitrogen)	Typical Phosphate Concentration (mg/L as phosphorus)	Typical Fecal Coliform Concentration (colony forming units [CFU]/100 mL)	Table or Page Number (WRRC and Engineering Solutions, 2008)
Class I, Soil Treatment	1	<2	13	Table 4-1, page 4-6
Class II, Septic tank to seepage pit	39-82	11-22	1-100E+06	Table 4-1, page 4-6
Class III, Aerobic treatment to seepage pit	7-60	2-18	1.00E+06	Page 5-19
Class IV, Cesspools	15-90	5-20	1-100E+06	Table 4-1, page 4-6

colony forming units (CFU); milligrams per liter (mg/L); milliliter (mL)

Table ES-2 shows that the quality of effluent released to the environment from an OSDS varies with the amount of treatment it receives. The effluent from cesspools, the Class IV OSDS, receives no treatment and thus no reduction in nutrients and pathogens prior to release to the environment. Systems utilizing soil treatment (Class I OSDS) and can attain nitrogen removal rates of greater than 90 percent (refer to Table ES-2).

Summary of risk to groundwater and drinking water

Constituents in wastewater that may pose a risk to health include pathogens, regulated contaminants such as nitrate, and a wide spectrum of unregulated and emerging contaminants. Knowledge of the OSDS that are located within a drinking water source's zone of contribution is critical when evaluating the risk that OSDS pose to drinking water. The current analysis benefited from the drinking water source zones of contributions delineated by the Source Water Assessment Program (SWAP) (Whittier et al., 2004). The SWAP delineated two zones of contribution referred to as capture zone delineations (CZD) for all public drinking water sources in the State of Hawaii based on time-of-travel (TOT) criteria. The first CZD was a 10-year TOT delineation designated as the Zone B CZD. The second delineation, Zone C CZD, included a zone of contribution to the drinking water well where the TOT was greater than 2 years but less than or equal to 10 years. We estimate that nearly 2,800 OSDS are located within the Zone B. OSDS located within this zone have the potential to introduce pathogens into the intake of these wells. In excess of 3,000 OSDS are estimated to be located within Zone C. The introduction of pathogens into the well intakes from these OSDS within Zone C is unlikely, but the undesirable chemical constituents of wastewater can degrade the quality of the water captured by the affected wells. Maui has the highest number of OSDS within the specified zones of contributions to the drinking water wells. There are estimated to be over 1,000 OSDS in Zone B and over 1,100 OSDS in Zone C. This is equivalent to over 12 percent of the OSDS on Maui that are located within a 2 or 10 year CZD of drinking water wells. Molokai has the lowest number with only 52 OSDS within each zone.

It is expected that an isolated OSDS that is not located in the immediate vicinity of a drinking water well poses a very small risk potential. OSDS in clusters, such as would occur within a housing development, will have a cumulative and adverse impact on the groundwater. The cumulative effects of OSDS on water quality were investigated through modeling, with nitrogen, primarily as nitrate, as a representative chemical of those existing in the effluent. The OSDS effluent discharge with its entrained nitrogen was combined with natural and agricultural recharge. The recharge values used by Whittier et al. (2004) were updated to include the contribution of the OSDS effluent based on the total effluent discharge per TMK in the OSDS inventory. The groundwater flow models based on MODFLOW were then rerun with the updated recharge coverage to generate a groundwater flow field. The contaminant transport model MT3D-MS used the groundwater flow model results to simulate the increase in groundwater nitrogen concentration that could be attributed to OSDS effluent discharge. The nitrogen transport simulations were run for 50 years to approximate the long-term impact of OSDS on groundwater. The nitrogen transport simulations did not account for the travel time from the point of discharge to the water table or any natural attenuation processes that might reduce the nitrogen content in the leachate.

This approach identified the groundwater zones most impacted by OSDS and the drinking water wells most at risk from these systems. On Hawaii Island, the transport modeling indicated that the

zones of contribution for most of the drinking water wells serving communities from near the Keahole Airport to south of Captain Cook may be impacted by elevated levels of OSDS derived groundwater nitrogen (ODGWN). Additionally, a few wells near the communities of Pahala, Waimea, and along the northeast coast may likewise be impacted. On Kauai, nearly all of the wells near the coastal communities may have elevated levels of ODGWN with their zones of contribution. This is a particularly serious problem in the Wailua/Kapaa area where modeling indicated highly elevated ODGWN concentrations. On Maui, modeling indicated increased ODGWN concentrations are restricted to the western slope of Haleakala, primarily upcountry Maui. There were also elevated ODGWN concentrations in the CZDS of drinking water sources in the Iao and Waihee Aquifer Sectors. Molokai has only two areas with elevated ODGWN concentrations within the drinking water well CZDs. These are CZDs for the wells in the Kualapuu area and for the Ualapue Shaft. Of the islands assessed, Kauai has the highest probability of drinking water impact from OSDS.

Summary of risk to streams

OSDS effluent has the potential to degrade stream water quality by the introduction of pathogens and nutrients. The risk posed to streams and watersheds was evaluated by inventorying the OSDS that were located within the watersheds of perennial streams. This study only considered perennial streams because these hydrologic systems commonly have a baseflow component that is supplied by groundwater, the primary transport medium of OSDS effluent contaminants. The risk weight assigned to each OSDS reflects the probability that it is located in an area where groundwater discharges to surface water. The locations where groundwater discharges to surface include:

- high level aquifers within a perennial watershed;
- areas of perched water within a perennial watershed;
- a corridor within 200 feet (ft) from stream channels; and
- areas where the depth to the water was less than 25 ft.

The last weighting factor was based on the modeled ODGWN concentration in the groundwater. Elevated ODGWN concentrations identified the reaches of streams that are most likely to be impacted by currently installed OSDS.

Another indicator of potential OSDS impact was the nutrient load to the watershed. This was calculated by dividing nitrogen and phosphorus flux estimated based on field data from OSDS within the zone that potentially contributes groundwater to streamflow by the area of that zone. This was calculated in units of kg/d/m² of watershed area.

The study results showed that Kauai streams are most at risk to degradation due to contributions from OSDS. The prevalence of perennial streams and high-level aquifers increases the area where groundwater likely discharges to surface water. Kauai also has the highest modeled ODGWN concentration of the islands assessed. The highest ODGWN concentrations occurred within perennial watersheds on the east side of this island, suggesting that these streams are at elevated risk from OSDS effluent contamination.

The risk to streams on the islands of Hawaii and Maui from OSDS effluent is much less than on Kauai due to the smaller fraction of the perennial watershed area with elevated ODGWN concentrations. However, future development on both of these islands could result in adverse OSDS impact on streams due to the dominance of high-level aquifers on the east side of both

islands. On the island of Maui, the current population of OSDS poses a moderate risk to streams in the Waihee and Waiehu regions based on the modeled ODGWN. However, as residential development in current agricultural areas increases so will the risk to stream water on the north and east slopes of Haleakala.

There were very few OSDS in the perennial watersheds of Molokai. This resulted in very low-modeled ODGWN concentrations within these watersheds. The risk of OSDS contamination to Molokai streams is currently low.

Summary of risk to coastal waters

All groundwater not extracted by pumping, discharged to streams, or lost to evapotranspiration eventually discharges to the ocean along with any nutrients and pathogens it contains. As with the stream risk assessments, we identified the areas of the shoreline most likely to be adversely impacted by OSDS effluent by modeling the ODGWN concentrations. This approach did not account for factors in the marine environment that may mitigate the impact of OSDS, such as strong long shore currents that may dilute the nutrients in the OSDS laden groundwater discharge.

The second approach used to assess the risk to the coastal waters from OSDS effluent discharge was the proximity of the OSDS to the shoreline. The OSDS located closest to the shoreline have the greatest probability of adversely affecting coastal waters. Two setback zones were delineated. The first was a 200 ft setback from the shoreline and the second was an area within which groundwater travel to shoreline would take two years or less, which is termed the time of travel time or TOT. The TOT setback was modeled using the particle-tracking model MODPATH on the flow field generated by the Source Water Assessment Program (SWAP) models for each island. Factors considered for risk scoring were areas within 200 ft of the shoreline, areas within a two year time of travel for groundwater to the coast; and areas where the simulated ODGWN concentration adjacent to and upgradient of the coastal two year time of travel setback was greater than 5.0 mg/L. Considering that the risk weights were additive, the highest risk score would be assigned to those OSDS located within 200 ft of the shoreline and in an area of elevated ODGWN. Outside of the 200 ft setback, the maximum score was assigned to areas within the 2-year TOT but farther than 200 ft from the shoreline and where the ODGWN is estimated to be greater than 5.0 mg/l.

The islands of Hawaii and Kauai have the highest percentage of coastal zones at elevated risk to OSDS impact. On Kauai, the south shore area from Poipu to Hanapepe, Nawiliwili, and the Wailua/Kapaa areas have the highest scores due to the high concentration of OSDS. On the island of Hawaii, nearly all of the northeast coast and much of the west coast from the westernmost point of Hualalai to south of Captain Cook has a high coastal risk severity score. On the island of Maui, the areas of Kaanapali, Kihei to Makena, Waihee/Waiehu, and the coastal area fronting the northwest slopes of Haleakala have elevated risk scores. On Molokai, the coast fronting the unsewered areas near the community of Kaunakakai has an elevated coastal risk score.

Summary of soil suitability for OSDS siting


Soil is the primary treatment medium for OSDS effluent. Although the effluent from cesspools is assumed to not undergo any treatment, the leachate from cesspools undergoes natural remediation if a sufficient thickness of soil exists between the bottom of the cesspool and the water table. The suitability of soil for siting a septic system is one of the many soil properties evaluated by the

ATTACHMENT 4

Identifying locations of sewage pollution within Puakō's watershed for management actions

T.N. Wiegner¹, L.M. Abaya¹, S.L. Colbert², J. Pabelo³, S. Adnan Sultan⁴, A. Sharif⁵,
C. Demapan¹, J. Stuart¹, K. Remple¹, and C. Nelson¹

¹University of Hawaii at Hilo; ²University of Northern Florida; ³Moravian College;
⁴University of Hawaii at Manoa

 *Mahalo to our funders: NOAA, HDAR, UH Hilo, Sea Grant, & NSF*

The slide features a background image of a rocky coastline with blue water and a clear sky. The text is overlaid on a dark blue gradient at the top. Logos for the University of Hawaii at Hilo, UNF, and Moravian College are displayed in the bottom left corner, and a thank-you message to funders is in the bottom right corner.

Thank you for inviting us to share our science with you and to the Coral Reef Alliance for organizing this gathering. Before starting, I would like to acknowledge my colleagues in the audience that have contributed to this research effort: Steve Colbert (UHH), Jim Beets (UHH), Courtney Couch (HIMB) and Chad Wiggins (TNC). We are excited to share our findings with you today and, after our brief presentation, we will do our best to answer your questions.

Coral Reefs

Biologically diverse ecosystems

Economically valuable:
food, jobs, recreation, coastal
protection, etc.

Hawai'i: contribute \$800 million
annually to state's economy

Culturally important



Coral reefs are among the most biologically diverse and economically valuable ecosystems on Earth, providing hundreds of billions of dollars in food, jobs, recreational opportunities, coastal protection, and other valuable services. In Hawai'i alone, for example, coral reefs are estimated to contribute \$800 million dollars annually directly to the state's economy. Coral reefs are also culturally important; for example, the Kumulipo, the Hawaiian Creation story, starts with the creation of coral polyp.

Sewage pollution

Poses threats to human & coral health

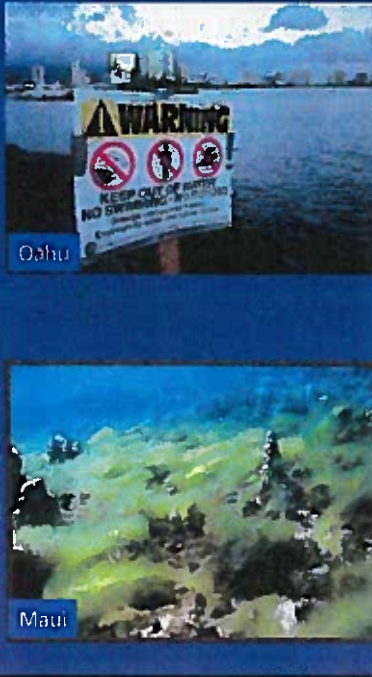
Release: pathogens, nutrients, cleaning chemicals & hydrocarbons

Human health threats: abdominal, skin, urinary, & blood infections

Ecological effects: shift from coral- to seaweed dominated reefs, & eutrophication

Declines in coral & reef fish

Increased prevalence & severity of coral and reef biota disease & infection

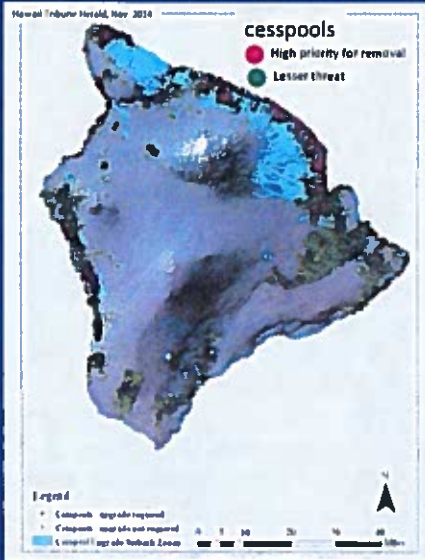


Oahu

Maui

Sewage pollution poses a threat to human and coral reef health, with discharge of pathogens, nutrients, cleaning chemicals, and hydrocarbons into nearshore waters. Human health effects from sewage inputs range from abdominal infections, to skin, urinary, and blood ones. Ecological effects of sewage pollution include shifts from coral- to seaweed- dominated reefs, eutrophication, declines corals and reef fish, as well as high occurrence of diseases and infections of reef biota.

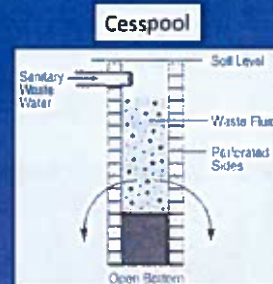
Hawai'i: Many reefs are impacted by sewage from cesspools



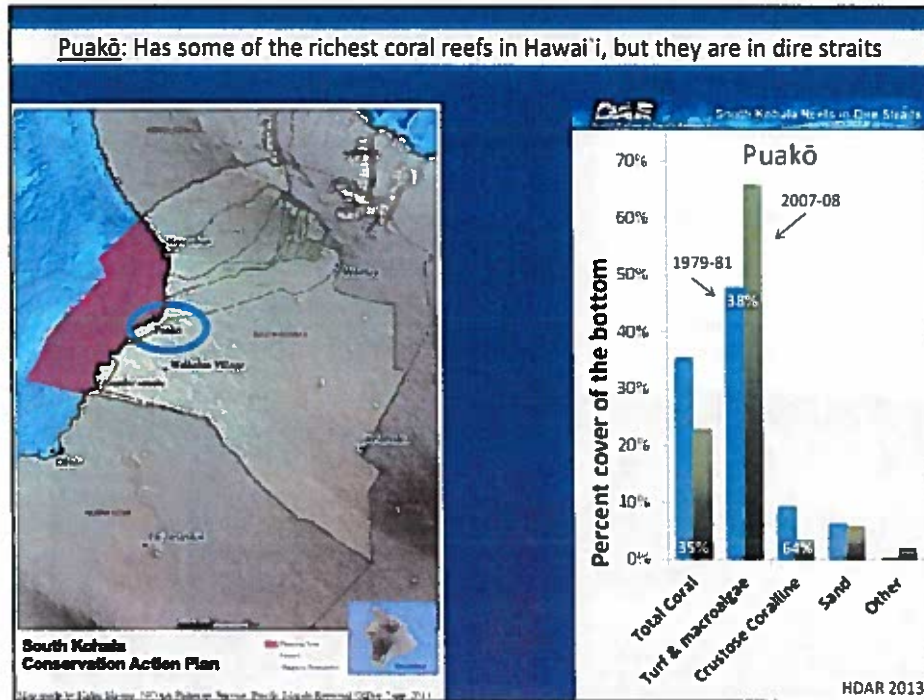
***Most commonly used domestic waste depositories**

***~90,000 statewide, ~50,000 on Big Island**

***Used more in Hawai'i than any other state**



Unbeknown to visitors, but well known by residents, Hawai'i's coral reefs are impacted by sewage primarily through a diffuse, widespread source—cesspools. These are the most commonly used domestic wastewater depositories in Hawaii, and they are used more widely here than any other state in the nation. Hawai'i Department of Health estimates that there are presently 90,000 cesspools in the state, with 50,000 are on Hawaii Island. Fall 2016, HDOH finally banned new cesspool construction in the state, the last state in the nation to do so; Rhode Island the second to last state to do it, did it in 1968.

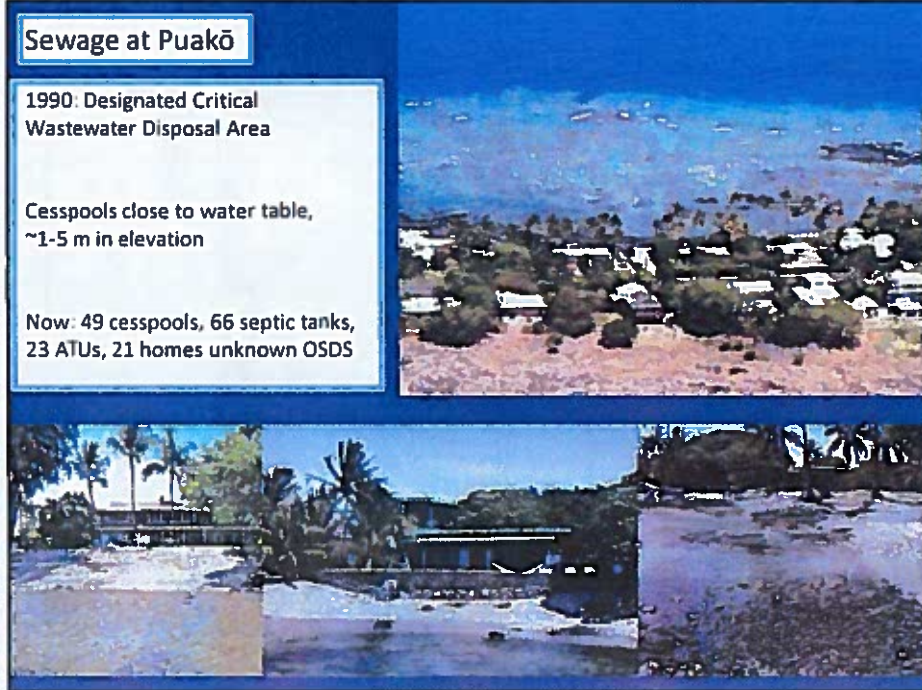


Symptoms of sewage pollution are becoming more apparent on the outer Main Hawaiian Islands in rural areas, such as Hawai'i Island. In these areas, coral reefs are still relatively healthy, underscoring the urgency for improved sewage disposal management.

Hence, Hawai'i State's Coral Reef Strategy, Objective 1, is to reduce key anthropogenic threats to nearshore coral reef sites.

Pūako is located in one of two priority sites identified for site-based actions. Pūako's coral reefs are considered some of the richest in the state.

But, according to a recent Hawai'i's Division of Aquatic Resources report – Puako's reefs are in dire straights. Coral cover has decreased 35% up to 50%, with algal cover increasing 38% in the last 30 years. It is suspected that sewage pollution maybe one contributing factor to these documented changes to Puako's reefs.



Concern over sewage pollution at Puako is not new; residents have been worried about its impacts to the reef since the 1960s. As a result, in 1990, Pūako was designated as a Critical Wastewater Disposal Area. These are areas where the disposal of wastewater has or may cause adverse effects on human health or the environment due to existing hydrogeological conditions. The condition at Pūako is that cesspools are in close proximity to the water table, which is 1 to 5 meters in elevation. As a result, homeowners building new homes or renovating existing ones are required to install septic tanks. Presently, there are 49 cesspools, 66 septic tanks, 23 ATUs, and 21 home where the type of OSDS is unknown.

Project Sparked by Community Concern

1. Is sewage in Puakō's waters?
2. Where is it coming from?
3. Does the type of sewage disposal system matter?



In 2013, the Puako Community Association enlisted UH Hilo and TNC to help answer the questions: Is sewage in Puako's waters? And since then, we have been collecting information through several different research projects to address this question, and the answer is yes.

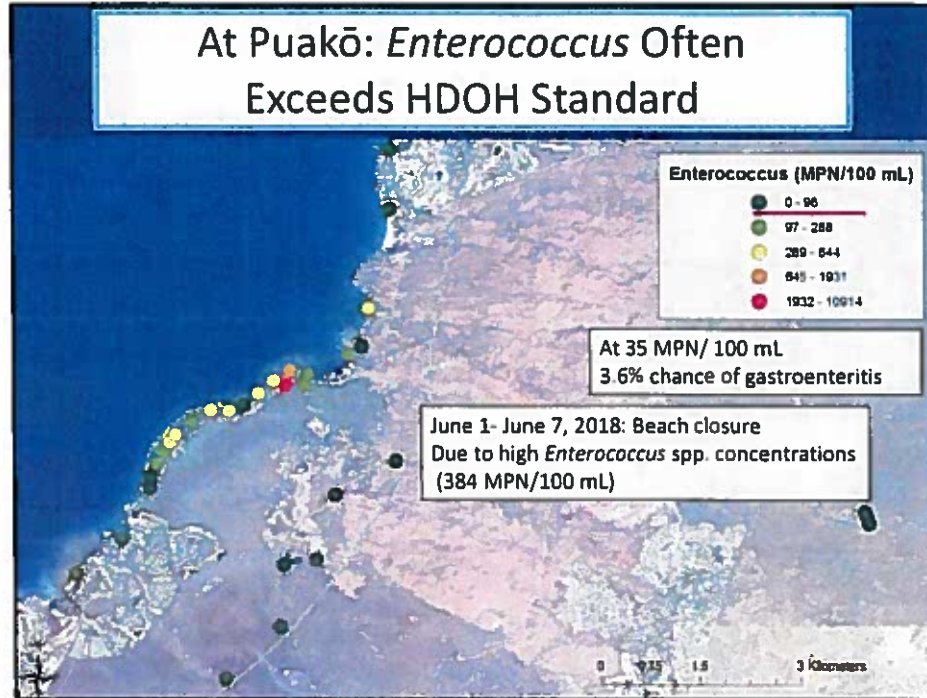
How do we know this? Over the last three years, we have made measurements of sewage indicators (fecal indicator bacteria, stable nitrogen isotopes, nutrients), as well as conducted dye tracer tests. From this research, we have shown that sewage is present, and traveling from homes to the shoreline within hours to days.

And although we have documented this, many community members have asked us whether upslope communities or adjacent resorts could also be contributing sewage pollution to Puako's waters. Our most recent efforts have sought to answer this question, and to address whether the type of sewage disposal system a property has matters with respect to nearshore water quality.

Where is the Sewage Coming From?



We sampled waters from groundwater wells at Waikoloa Village and Mauna Lani, and from resorts' shorelines at Mauna Kea, Hapuna Prince, Fairmont Orchid, and Mauna Lani – analyzing them for sewage indicators. Here is what we found (next slide)



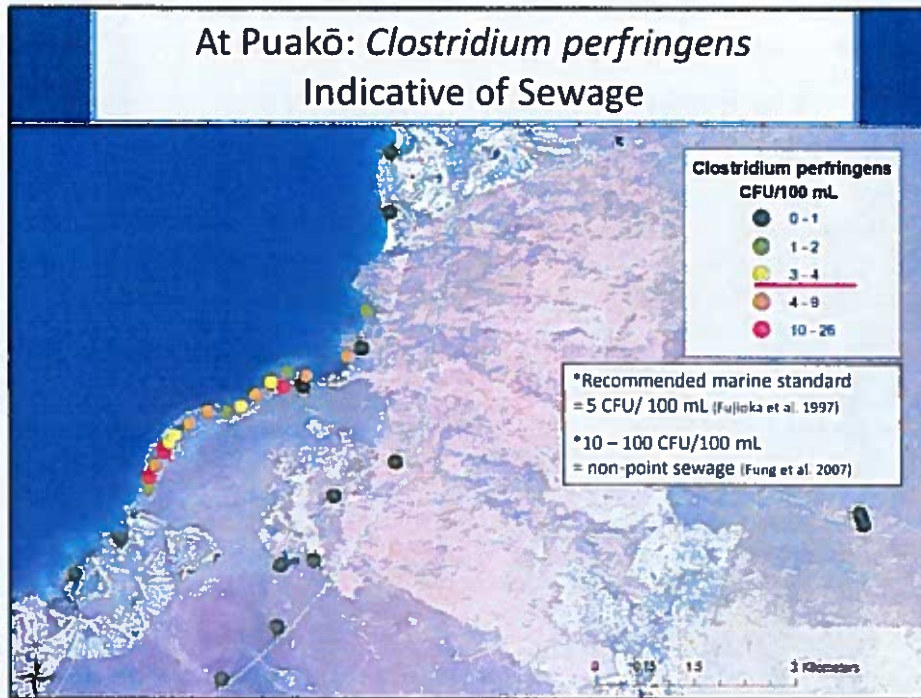
Enterococcus, a FIB, has concentrations that often exceeded HDOH single sample maximum of 104 MPN/ 100 mL.

Upslope wells and resorts' shoreline waters had low concentrations that were all below HDOH's standard.

The US EPA's marine waters recreational standard is 35 MPN/ 100 mL (geomean), and at this level, your chance of getting gastroenteritis is 3.6%.

Most concentrations at Puako are 2 to 3 orders of magnitude higher than this standard

Earlier this month (June 2018), HDOH closed the beach at their sampling site (between Puako Beach Drive 56 and 58) for six days due to elevated concentrations (I think this is one of our stations near the point).

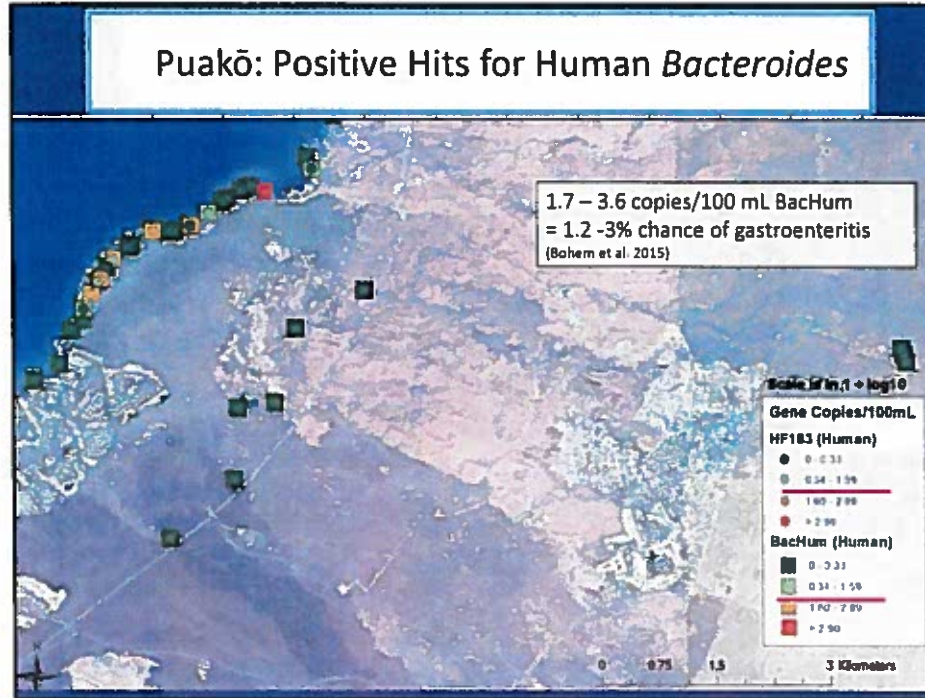


Because *Enterococcus* can naturally occur in Hawaiian soils, HDOH uses a secondary FIB – *Clostridium perfringens* which is thought to be a more specific indicator of sewage pollution.

Clostridium perfringens concentrations at Puako often exceeded the recommended marine recreational waters standard of 5 CFU/ 100 mL,

With several stations having values indicative of non-point source sewage pollution (10 -100 CFU/100 mL).

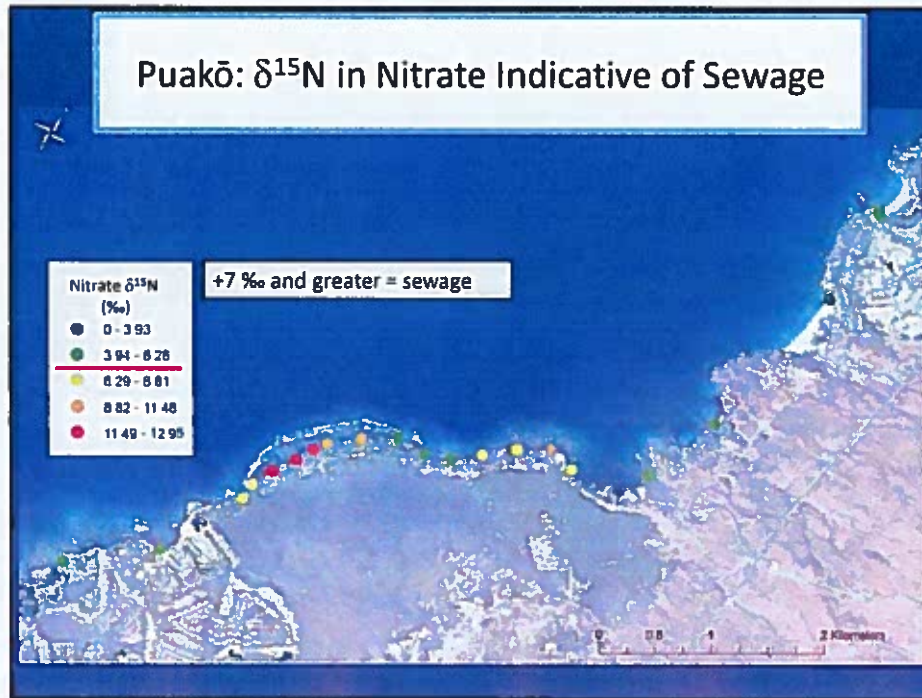
Concentrations upslope and at adjacent resorts were low.



Over the last 10 years or so, more specific methods have been developed to identify fecal bacteria sources to waters. Specifically, molecular markers have been developed for the bacteria *Bacteroides*, which is the most abundant bacteria in the human gut. We now have methods that can identify ones of human origin in the water.

Positive hits for human bacteroides (using two different markers) only occurred at Puako.

Also, it has been found that when the concentrations are 1.7 -3.6 copies/ 100 mL, your chance of getting gastroenteritis is 1.2-3%. Concentrations were within this range at some stations within Puako.



We also measured stable nitrogen isotopes in nitrate. Nitrate is a nutrient.

We found that values at Puakō were indicative of sewage ($>+7$), while values upslope and at adjacent resorts were indicative of soil and fertilizers.

(do we have an updated map which includes resort values?)

Take Home Message #1

- Sewage indicator values were highest along Puakō's shoreline
- Sewage is largely entering the water table at Puakō, and not at the other locations

Does the Type of Sewage Disposal System Matter?



Second question, does the type of sewage system matter? Do they all leach into the water table? Do they differ in their time of travel from the home to the shoreline?

Over the last year and still ongoing, we have been working to answer these questions.

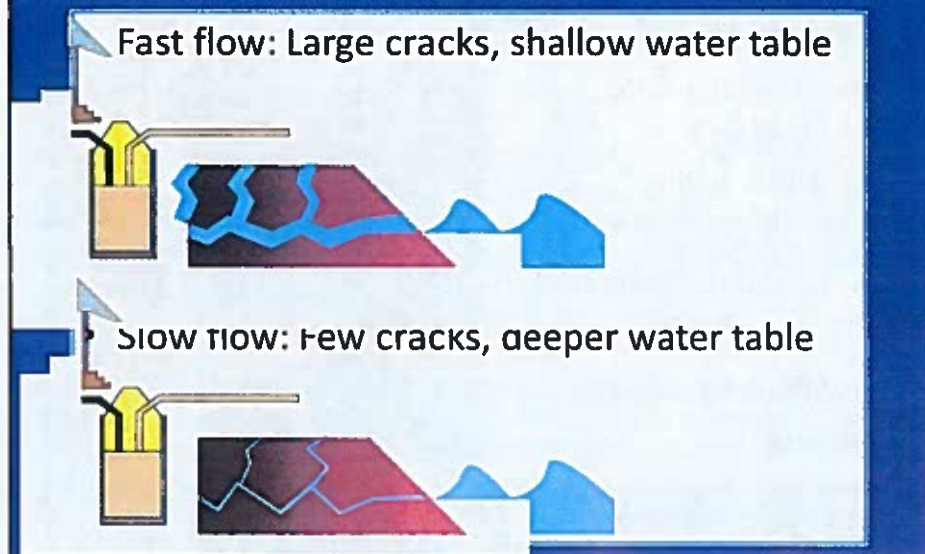
Dye Reached Shoreline Quickly

- 9 dye tracer tests:
 - 4 Cesspools
 - 2 Septic Tanks
 - 3 ATUs
- Dye reached shoreline in < 5 h, up to 10 d
- ***No difference among systems***



We have now tested how fast water travels to the shoreline from cesspools, ATUs, and septic tanks. Our dye tracer studies documented dye reaching the shoreline in less than 5 hours up to 10 days. Both the shortest and the longest travel times came from homes with ATUs!

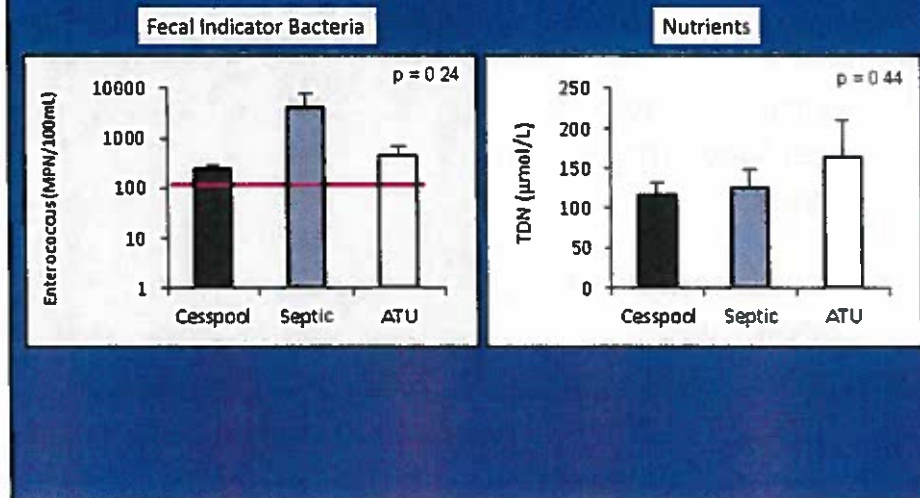
Flow to the shoreline depends on geology



How is this so? Well travel time largely depends on the geology. Dye traveled fast in areas where there are large cracks in the basalt and the water table is close to the ground's surface. Greater chance for dye to hit a crack and reach the water table faster.

Where the cracks in the basalt are smaller and/or fewer and the water table is deeper, there a smaller chance for the dye to seep into a crack and reach the water table. So, the dye travel time is greater.

Water quality was similar in front of homes, regardless of sewage disposal system type



We also assessed water quality in front of the homes with different types of OSDS. We found that water quality was similar in front of all the homes where we sampled, regardless of the system type. For example, Enterococcus was similar in front of homes with different OSDS, and concentrations were greater than the HDOH single sample maximum. A similar pattern was observed for nutrients too. Here is an example of Total Dissolved Nitrogen, concentrations were all greater than 100 $\mu\text{mol/L}$.

Take Home Message #2

- Dye reached shoreline
 - 5 h – 10 d
 - Time affected by geology, not system type
- No difference among system type
 - flow time
 - water quality



CONCLUSIONS

- Sewage indicator values greatest at Puakō
- Dye from sewage systems reached shoreline
 - 5 hrs – 10 days (cesspool, septic tanks, ATUs)
 - No difference in system type
 - Flow to shoreline
 - Water quality
 - Geology more important
- Paramount to minimize land-based pollution for human and coral reef health

This is a transition slide for CORAL to present their work.

Questions?



Mahalo

To our collaborators: Puakō Community Association, TNC, South Kohala Conservation Action Plan Program Coordinator, Coral Reef Alliance, HDOH, Cornell University, UHH Analytical Laboratory, Louise Economy, Melia Takakusagi & all our PIPES and CMORE interns

To our funding sources: Hawaii Division of Aquatic Resources Coral Reef Working group, NOAA Coral Reef Conservation Program, UHH PIPES Internship Program (NSF REU) , Center for Microbial Oceanography and Education (NSF), UHH Research Council and Marine Science Department

Lastly, I would like to mention that this project of documenting sewage pollution and working with the Puako community to investigate solutions to their problem would not be feasible for one group to do; we have been able to accomplish so much so far from our collaborations with PCA, TNC, Coral Reef Alliance, and Cornell University. It has been an amazing opportunity to work with them, as well as our many other collaborators and funding agencies. Mahalo you for your attention. I'd be happy to take any questions

ATTACHMENT 5

Flow Science Incorporated

202 S. Lake Avenue, Suite 294, Pasadena, CA 91101

(626) 304-1134 • FAX (626) 304-9427



MEMORANDUM

Date: August 29, 2019

Re: Hawaii Wildlife Fund et al. v. County of Maui, GET-26

To: Committee Chair Mike Molina
Members of the Governance, Ethics, and Transparency Committee

GET.committee@mauicounty.us
Kelly.King@mauicounty.us, Council Chair
Keani.Rawlins@mauicounty.us, Council Vice-Chair
Tasha.Kama@mauicounty.us, Presiding Officer Pro Tempore
Riki.Hokama@mauicounty.us, Councilmember
Alice.Lee@mauicounty.us, Councilmember
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Tamara.Paltin@mauicounty.us, Councilmember
Shane.Sinenci@mauicounty.us, Councilmember
Yukilei.Sugimura@mauicounty.us, Councilmember

From: John List, Ph.D., P.E.
Principal Consultant

Subject: Testimony Regarding the Ramifications of NPDES Permitting of Groundwater Flows

I was retained by the County of Maui as an expert witness and to analyze and evaluate NPDES permit issues when the *Hawaii Wildlife Fund, et al. v. County of Maui* matter was pending in the district court. I am providing this testimony to explain the ramifications of NPDES permitting of groundwater containing treated effluent and other pollutants that flows to the ocean, which is the issue, now before the United States Supreme Court.

CREDENTIALS

I have 57 years of academic and professional experience analyzing the fate and transport of contaminants and tracers in the water environment, including rivers, lakes, groundwater and the coastal ocean. I have a Bachelor of Engineering degree with First Class Honors from the University of Auckland (1961), a Bachelor of Science degree in Mathematics from the University of Auckland (1962), a Master of Engineering degree in Civil Engineering from the University of Auckland (1962), and a Ph.D. in Applied Mechanics and Mathematics from the California Institute of Technology ("Caltech") (1965). Prior to joining the faculty at Caltech as an Assistant Professor in 1969, I spent three years as a lecturer and senior lecturer at the University of Auckland. From 1978 until 1997, I was a Professor of Environmental Engineering Science at Caltech. From



1980 until 1985, I was the Executive Officer for the Environmental Engineering Science Graduate Program at Caltech.

I am the co-author of the texts *Mixing in Inland and Coastal Waters* (Academic Press, 1979), *Turbulent Buoyant Jets and Plumes* (Pergamon Press, 1983), and the award-winning *Handbook of Groundwater Development* (Wiley, 1990). Additionally, I have authored or co-authored nearly 60 peer-reviewed publications, most of which relate to contaminant fate and transport in the environment. For six years (1984-1989) I was the chief editor of the American Society of Civil Engineers' *Journal of Hydraulic Engineering*, the Society's principal publication for matters relating to fate and transport of tracers and contaminants.

I founded the consulting engineering company Flow Science Incorporated in 1983 and have been its Principal Consultant since 1997. I have consulted on over 200 NPDES permits for industry and municipalities, more than 30 of which have involved discharges to coastal waters or the ocean.

TESTIMONY

The *Hawaii Wildlife Fund, et al. v. County of Maui* lawsuit claims that the County of Maui is in violation of the Clean Water Act (CWA), because it does not have a National Pollution Discharge Elimination System (NPDES) permit for the operation of its underground injection control wells at the Lahaina Wastewater Reclamation Facility (LWRF). The County has never been required to have such an NPDES permit because these wells were permitted under the Underground Injection Control (UIC) regulations established under the federal and state Safe Drinking Water Acts.

The CWA requires an NPDES permit for discrete single point discharges to the waters of the United States (known as navigable waters), and such permits are in place for the ocean discharges that I have been associated with in Hawaii (Kauai Island Utility Cooperative, Barber's Point Refinery and East Honolulu Wastewater Treatment Plant). In these cases, there is a clear and identifiable single point of discharge to the ocean and application of the NPDES permitting requirements is appropriate. To obtain such a permit, the applicant must identify the GPS coordinates, the volume and the pollutant characteristics at the point of discharge to the ocean, and perform a dilution study around the point of discharge to show that water quality standards are not violated. I know of no circumstance in which groundwater flow containing a myriad of pollutants from various releases has previously been required to obtain an NPDES permit.

To understand the inappropriateness of the claim that an NPDES permit is required for releases to groundwater that flow to navigable water, it is necessary to realize the fact that all groundwater on an island that is not removed by production wells, or evaporates, must ultimately enter the ocean. If it did not, the island would become waterlogged. So every facility that adds water with pollutants to the groundwater flow, such as septic tanks, cesspools, storm water storage reservoirs, rain gardens, unlined canals, UIC wells and water bank wells will add flow to the groundwater that will ultimately be released to



the ocean, or an adjacent stream. Taken to the extreme, this logic could require NPDES permitting for any additions of potential pollutants to the groundwater flow. At a minimum, sources close to the coast that add pollutants to groundwater, such as cesspools, septic systems, storm water retention basins and golf courses using recycled water, would require identification of where groundwater enters the ocean or adjacent surface water stream, and a dilution study to determine that the discharge did not violate water quality standards in the receiving water, a clearly impossible burden. The only reasonable approach is to control the quality of the water that is added to the groundwater flow, which is what the UIC well permitting process accomplishes.

In most cases on an island it would be extremely difficult, if not nearly impossible, to determine the actual point of entry to navigable water of a specific groundwater flow. It should be noted that two EPA-funded tracer dye studies were completed for the LWRF. The first, in 1993, could not identify where the treated effluent entered the ocean. The second, undertaken in 2011, concluded that, although some of the treated effluent came out through transient seeps in the ocean floor nearshore, a vast majority of it entered as diffuse flow—possibly further offshore and not accounted for in the Study. So the Tracer Study did not identify the location of the total flow of treated effluent into the ocean from wells 3 and 4. Moreover, the point(s) where flow from wells 1 and 2 enter the ocean has never been identified. Modeling of well 2 with both wells 3 and 4 operating estimates that treated effluent from these three wells comes out along a two mile stretch of coastline. The entry points to the ocean will change depending upon what wells are operating.

Additionally, the treated effluent injected into the wells does not have the same chemical properties as the treated effluent entering the ocean. Chemical modifications, such as increasing phosphorous, magnesium, chloride and sulfate concentrations, and decreasing total nitrogen and nitrate concentrations, occur as the treated effluent travels with groundwater. Because the treated effluent mixes with other pollutant sources, such as from agricultural operations and cesspools, as it moves toward the ocean, it is extremely difficult to distinguish pollutants from different sources as the groundwater/effluent mixture enters the ocean. As shown by the UH shoreline groundwater pollution study on Hawaii, which concluded “... data from different [pollution] indicators were not always in agreement with one another on the intensity and location of sewage pollution.” Thus, should the County be required to obtain an NPDES permit, it will end up being responsible for compliance with permit limits and conditions for pollutants outside of its control.

To summarize, if the Ninth Circuit ruling prevails, it is likely that operations along the coast that add pollutants to groundwater that enters navigable waters will be required to obtain an NPDES permit. There were almost 88,000 cesspools in operation in the Hawaiian Islands in 2009 and more than 12,000 on Maui alone, releasing untreated sewage as much as three times the volume of treated effluent from the LWRF. Each of these will, under the ruling, likely require a specific identification of the point of discharge to the navigable waters and the development of a dilution analysis to prove that the water quality standards in navigable waters are not being violated, a clearly



impossible burden. The appropriate approach is to control the quality of the water that enters the ground and not try and predict where it enters the ocean and what it will be when it arrives there, which is what NPDES permits require.