BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA STREET • HONOLULU, HAWAI'I 96843
Phone: (808) 748-5000 • www.boardofwatersupply.com

August 20, 2024

NOTICE

The Board of Water Supply, City and County of Honolulu, Regular Meeting will be held on Monday, August 26, 2024, at 2:00 p.m. in the Boardroom, Public Service Building, 630 South Beretania Street, Honolulu, HI 96843.

Limited seating will be available for in-person testifiers in the Boardroom. The public may also view the livestream of the meeting from the lobby of the Board of Water Supply, Public Service Building, 630 South Beretania Street, Honolulu, HI 96843.

Public parking for this meeting is available in the Public Service Building customer parking lot.

TESTIMONY

Testimony may be submitted as follows:

- Written testimony should include the submitter's address, email address, and phone number. Testimony should be received by Monday, August 26, 2024, at noon. Submit written testimony by:
  - Email to board@hbws.org
  - Online at boardofwatersupply.com/testimony
  - Mail to Board of Water Supply, 630 South Beretania Street, Honolulu, HI 96843
  - Fax to (808) 748-5079
- Oral testimony will be accepted remotely and in person during the meeting. Pre-registration is encouraged to facilitate as much remote and in-person testimony as reasonably possible during the time allotted. Testifiers should also consider submitting a written version of their oral testimony.
  - To testify remotely by phone or video using the Zoom videoconferencing platform, please submit your request by:
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    Zoom registration instructions, as well as participant guidelines, will be sent to the contact information provided. Once confirmed as registered, testifiers will receive an email containing the links and instructions to join the Zoom session. Submit your request to testify remotely by Friday, August 23, 2024, at noon.
  - To testify in person at the Board of Water Supply, Public Service Building, 630 South Beretania Street, Honolulu, HI 96843, please pre-register by submitting your request by Monday, August 26, 2024:
    - Email to board@hbws.org
    - Online at boardofwatersupply.com/testimony

In-person testifiers should check in with building security and then with testimony staff located in the lobby. Testifiers will be escorted to and from the Board Room. On-site registration will be available for walk-in requests.

Testimony is limited to two (2) minutes and shall be presented by the registered speaker only. Testimony submitted in writing or orally, electronically or in person, for use in the meeting process is public information. All testimony will be included as part of the approved meeting minutes at boardofwatersupply.com/boardmeetings.

MATERIALS AVAILABLE FOR INSPECTION

Meeting materials ("board packet" under HRS §92-7.5) are accessible at www.boardofwatersupply.com/boardmeetings.

VIEWING THE MEETING

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SPECIAL REQUESTS AND ACCOMMODATIONS

If you require special assistance, an auxiliary aid or service, and/or an accommodation due to a disability to participate in this meeting (i.e., sign language interpreter, interpreter for language other than English, or wheelchair accessibility), please call Joy at (808) 748-5172 or email your request to board@hbws.org **at least three business days prior to the meeting date**. If a response is received after the requested three business days before the meeting date deadline, we will try to obtain the auxiliary aid/service or accommodation, but we cannot guarantee that the request will be filled.

Upon request, this notice is available in alternate formats such as large print, Braille, or electronic copy.

The agenda for August 26, 2024, Regular Meeting of the Board of Water Supply is as follows:

ITEMS REQUIRING BOARD ACTION

1. Approval of the Minutes of the Regular Meeting Held on June 24, 2024

2. Approval of the Minutes of the Regular Meeting Held on July 22, 2024

3. Authorizing a Public Hearing to Consider a Proposed Amendment to the Fiscal Year 2025 Operating and Capital Improvement Program Budget of the Board of Water Supply

ITEMS FOR INFORMATION

1. Review of the Navy's Technical Memorandum of Elevated Total Petroleum Hydrocarbon (TPH) Levels in the Joint Base Pearl Harbor Hickam (JBPHH) Water System

2. Polycyclic Aromatic Hydrocarbon (PAH) Detection at the Board of Water Supply (BWS) Aiea Wells

3. Status Update of Groundwater Levels at All Index Stations

4. Water Main Repair Report for July 2024

EXECUTIVE SESSION

1. Approval of the Minutes of the Executive Session Held on May 28, 2024

2. Approval of the Minutes of the Executive Session Held on July 22, 2024

3. To Consult with the Board's Attorney on Questions and Issues and to Make a Determination Pertaining to Notices of Proposed Class Action Settlements in Regards to Aqueous Film-Forming Foams Products Liability Litigation MDL No. 2:18-mn-02873 (refers to: City of Camden et al., v. BASF Corporation, No. 2:24-cv-03174-RMG and City of Camden et al., v. Tyco Fire Products LP, et al., No. 2:24-cv-02321-RMG) [HRS §92-5(a)(4)]

4. To Consult with the Board's Attorney on Questions and Issues Pertaining to the Board's Powers, Duties, Privileges, Immunities, and Liabilities Pertaining to Matters Concerning the Red Hill Bulk Fuel Storage Facility [HRS §92-5(a)(4)]

5. To Consult with the Board's Attorney on Questions and Issues Pertaining to the Board's Powers, Duties, Privileges, Immunities, and Liabilities Pertaining to Matters Concerning the Evaluation of the Chief Engineer [HRS §92-5(a)(4)]

MINUTES

To watch the recording of this meeting, please click on the following link: https://vimeo.com/bwshonolulu/august-26-2024. Closed captioning is available.

THE REGULAR MEETING OF THE
BOARD OF WATER SUPPLY

August 26, 2024

At 2:00 PM on August 26, 2024, in the Public Service Building Board Room at 630 South Beretania Street, Honolulu, Hawai'i, Board Chair Nā'ālehu Anthony called to order the Regular Meeting.

Present:	Nā'ālehu Anthony, Chair Jonathan Kaneshiro, Vice Chair Bryan P. Andaya, Board Member via Zoom Kapua Sproat, Board Member via Zoom Lance Wilhelm, Board Members Gene C. Albano, Ex-Officio via Zoom
Also Present:	Ernest Lau, Manager and Chief Engineer Erwin Kawata, Deputy Manager Patrick Chun, Acting Program Administrator, Capital Projects Division Jennifer Elflein, Program Administrator, Customer Care Division via Vimeo Kathleen Elliott-Pahinui, Information Officer, Communications Office Raelynn Nakabayashi, Executive Assistant I, Executive Support Office Wayne Tello, Acting Program Administrator, Field Operations Division Glenn Ah Yat, Acting Assistant Program Administrator, Field Operations Division Kaliko Lum Kee, Acting Waterworks Controller, Finance Division Michele Thomas, Executive Assistant I, Human Resources Office via Vimeo Henderson Nuuhiwa, Program Administrator, Information Technology Division Michael Matsuo, Land Administrator, Land Division Roland Fenstemacher, Water Quality Laboratory Director, Water Quality Division Barry Usagawa, Program Administrator, Water Resources Division Kevin Ihu, Program Administrator, Water System Operations Division

Kimberly Kuwaye, Manager Secretary
Joy Cruz-Achiu, Board Secretary
Kathy Mitchell, Administrative Services Officer
via Vimeo
Stella Bernardo, Information Specialist II,
Communications Office via Zoom
Michele Harman, Community Relations Specialist I,
Communications Office via Zoom
Wayne Maria, Information Specialist II,
Communications Office
Jeanne Peterson, Project Manager/
Senior Data Validator,
Analytical Quality Associates, Inc.
Allison Felix, Senior Data Validator,
Analytical Quality Associates, Inc.
Paul Winkler, Ph.D., Independent Consultant
Joseph Tracy, Senior Vice President and
Principal Geologist, Intera Inc.

Others Present: Jeff Lau, Deputy Corporation Counsel
Jessica Wong, Deputy Corporation Counsel
via Zoom

Absent: Edwin H. Sniffen, Ex-Officio

Chair Nāʻālehu Anthony opened the Board meeting with an ʻōlelo noʻeau:

Aloha mai kākou e nā hoa makamaka mai ka lā hiki a ka lā kau. Welina nui me ke aloha.

Mahalo nui no kēia ʻākoakoa ʻana o kākou no ka pono o ka lāhui, no ka pono o ka ʻāina, a no ka pono o ka wai nō hoʻi. Eia he ʻōlelo noʻeau e kālele ana i ke koʻikoʻi o ka wai.

Chair Anthony translated the ʻōlelo noʻeau: Aloha from the rising to the setting sun. Thank you all for coming together today for the people, the land, and the water. Here is a short Hawaiian Proverb that helps us remember the importance of fresh water and land.

ʻŌlelo 2903: **Wai 'apu lau kī.**

Chair Anthony translated ʻōlelo 2903: Water in a ti-leaf cup. When one goes to the upland and needs a cup to dip water from the stream or spring, he folds a ti leaf to form a dipper.

Chair Anthony welcomed everyone to the August 26, 2024, Regular Meeting of the Board of Water Supply (BWS). He stated that the Board of Water Supply is dedicated to providing safe, dependable, and affordable supply of water now and into the future.

Before continuing the meeting, Chair Anthony stated that a recording would be played to share reminders for public participation and the virtual meeting regulations required by law.

The recording played: Goals for this meeting under Hawai'i Revised Statutes, Section 92-7.5 are accessible at www.boardofwatersupply.com/boardmeeting. The public may attend this meeting in person at the Public Service building located at 630 South Beretania Street. The public may also view a live stream of today's meeting on our website at www.boardofwatersupply.com/live. We have been accepting written or oral testimony for today's meeting. Instructions and an online submittal form are available at boardofwatersupply.com/testimony. The deadline to submit advance written testimony has passed. Testimony received by noon today has been distributed to the board members. We will continue to accept written testimony today through our online form. Oral testimony in person or remotely will be accepted during today's meeting. To facilitate as much in-person and remote testimony as reasonably possible during the time allotted, preregistration and submittal of a written version of testimony at boardofwatersupply.com/testimony is strongly encouraged. To testify in person, please register using our online form or come to the public service building at 630 South Beretania Street. We have a representative in the lobby to provide intake and further instructions. To request to testify remotely, please complete the online form at boardofwatersupply.com/testimony. Requestors will receive an email containing links and instructions to join the Zoom session. Testifiers will have two minutes to state their position. A timekeeper will alert testifiers when there is one minute remaining. Once the two minutes are up, please summarize to allow time for questions from the Board. Then, make room for the next testifier. Board members attending any board meeting remotely must be visible to the public to be considered, present, and meet quorum guidelines. Board members participating remotely must also disclose their location and anyone present at their location during roll call. Meeting participants who are calling or video conferencing in, please mute your microphone when you're not speaking. If you have a question, comment, or wish to enter or second a motion on an action item, please unmute your microphone and identify yourself before continuing to speak. If you encounter technical issues during today's meeting, please use the Zoom chat to send a direct message to our support team. Their names are listed in the message to all participants. To open the chat window, please click the text Bubble icon on the Zoom Toolbar.

Chair Anthony announced that testifiers would be limited to three minutes due to the number of testimonies submitted.

Chair Anthony requested a roll call for the Regular Meeting. He asked those participating remotely to give the appropriate disclosures up responding.

Board Member Kapua Sproat joined via Zoom, responded aye, and disclosed that she was alone at her location; Vice Chair Jonathan Kaneshiro responded present was in the Board room; and Board Member Lance Wilhelm responded present was in the Board room. Chair Anthony was present in the Boardroom. Board Members Edwin Sniffen and Gene Albano were absent.

Chair Anthony introduced those in the Boardroom: Manager Ernest Lau, Deputy Manager Erwin Kawata, Board Secretary Joy L. Cruz-Achiu, Manager Secretary Kimberly Kuwaye, Information Specialist II Wayne Maria, and Deputy Jeff Lau. Deputy Jessica Wong joined via Zoom from the City and County Corporation Counsel.

Chair Anthony announced that he would be deferring Action Item No. 1, Approval of the Minutes of the Regular Meeting Held on June 24, 2024, and Action Item No. 2, Approval of the Minutes of the Regular Meeting Held on July 22, 2024, since the appropriate Board Members weren't in attendance to approve the corresponding Board Meetings minutes. He stated that if and when the appropriate Board Members join, he would return to the item to be presented.

"August 26, 2024

AUTHORIZING A PUBLIC HEARING TO CONSIDER A PROPOSED AMENDMENT TO THE FISCAL YEAR 2025 OPERATING AND CAPITAL IMPROVEMENT PROGRAM BUDGET OF THE BOARD OF WATER SUPPLY

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawai'i 96843

Chair and Members:

Subject: Authorizing a Public Hearing to Consider a Proposed Amendment to the Fiscal Year 2025 Operating and Capital Improvement Program Budget of the Board of Water Supply

We recommend that the Board authorize a public hearing to be held at 2:00 PM on September 23, 2024, to consider a resolution to adopt the proposed Amended Operating and Capital Improvement Program (CIP) Budgets for the fiscal year beginning July 1, 2024, and ending June 30, 2025 (FY25).

This amendment is necessary to:

1. Increase funding in the Operating Budget of the Office of the Manager and Chief Engineer. The additional funds are required to evaluate and prepare the department to implement the authorities granted and delegated to the Board of Water Supply (BWS) via Ordinance 22-1, Relating to Underground Storage Tanks. The BWS approved acceptance of the designation as the permitting city agency under Ordinance 22-1 during the July 22, 2024, Board Meeting. Funding for a consulting contract will be required to assess feasibility and operational impacts.

2. Amend funding sources and amounts in the Capital Improvement Program Budget (CIP). These changes are required, specifically for the following FY25 CIP Projects:

    a. Project No. 6: Environmental Investigation of Emerging Contaminants. Funding of $4,900,00.00 was originally budgeted in the State Revolving Fund (SRF) to reflect an anticipated low-interest loan from the Department of Health (DOH). Since the adoption of the FY25 Budget, the DOH has informed the BWS that the requested funds will be provided in the form of a Grant and on an annual reimbursement basis, subject to availability of federal appropriations. This amendment will reflect funding in the Operating Fund to cover project expenditures while the BWS works with the DOH to finalize the grant agreement.
    b. Project No. 7: Construction Management for Various BWS Construction Projects. Funding of $2,000,000 was originally budgeted in the Operating Fund to support selected BWS

construction projects. As our CIP grows and the regulatory environment changes, our workload in managing active construction projects increases. Additionally, as we deploy diversified funding strategies, the BWS will require additional Construction Management support to ensure projects remain on track and follow all legal and regulatory requirements.

3. Add funding for a new CIP Project in Section II. Renewal and Replacement, Treatment. This new project line is required to address the temporary installation of water treatment systems at various locations throughout the island.

4. Make amendments to the provisions of the Budget resolution, thereby allowing for temporary transfers. This will allow the BWS Manager and Chief Engineer to make temporary transfers, no longer than 12 months, from the Operating Fund to other Funds, as needed. This flexibility is required as the BWS pursues additional financing opportunities, such as grants, which may operate on a reimbursable basis only.

Attached is the draft of the "Notice of Public Hearing" to be published prior to the hearing date.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

DISCUSSION: Raelynn Nakabayashi, Executive Assistant I, Executive Support Office, gave the report.

At 2:16 PM, Board Member Bryan Andaya joined the Board meeting via Zoom.

During Ms. Raelynn Nakabayashi's presentation, she stated that the Board letter displayed was incorrect. However, the Board letter posted to the BWS website was correct.

Vice Chair Jonathan Kaneshiro asked if this action was to authorize a public hearing and not approve the budget amendment.

Manager Ernest Lau replied that the first step is to hold a public hearing to present the proposed budget amendment.

Ms. Nakabayashi further explained that the public hearing would be held in September if the Board authorized the BWS to hold a public hearing. In September, the BWS will provide the details of the proposed budget amendment and the changes that will be made to the budget.

After Ms. Nakabayashi's presentation, Chair Anthony recognized Board Member Andaya's attendance.

Board Member Andaya disclosed that he was joining the meeting via Zoom and was alone at his location.

Chair Anthony stated that he would be moving back to the top of the agenda to take action on Action item one, Approval of the Minutes of the Regular Meeting Held on June 24, 2024.

MOTION TO APPROVE

Jonathan Kaneshiro and Lance Wilhelm motioned and seconded, respectively, to Authorize a Public Hearing to Consider a Proposed Amendment to the Fiscal Year 2025 Operating and Capital Improvement Program Budget of the Board of Water Supply.

Ms. Cruz-Achiu conducted a roll call vote: Vice Chair Jonathan Kaneshiro, aye; Board Member Bryan Andaya, aye; Board Member Kapua Sproat, aye; Board Member Lance Wilhelm, aye; and Chair Nā'ālehu Anthony, aye. Board Members Edwin Sniffen and Gene Albano were absent

Ms. Cruz-Achiu announced that the motion passed with five ayes.

AUTHORIZING A PUBLIC HEARING TO CONSIDER A PROPOSED AMENDMENT TO THE FISCAL YEAR 2025 OPERATING AND CAPITAL IMPROVEMENT PROGRAM BUDGET OF THE BOARD OF WATER SUPPLY WAS APPROVED ON AUGUST 26, 2024			
	AYE	NO	COMMENT
NĀ'ĀLEHU ANTHONY	X		
JONATHAN KANESHIRO	X		
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
LANCE WILHELM	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO			ABSENT

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the BOARD OF WATER SUPPLY (BWS), CITY AND COUNTY OF HONOLULU, will hold a PUBLIC HEARING in the Board Room, Public Service Building, 630 South Beretania Street, on Monday, September 23, 2024, at 2:00 p.m. or soon thereafter, where all interested persons shall be afforded the opportunity of being heard on the adoption of the Proposed Amendment to the Fiscal Year (FY) 2025 Operating and Capital Improvement Program Budgets of the Board of Water Supply, beginning July 1, 2024, and ending June 30, 2025.

Limited seating will be available for in-person testifiers in the Board Room. The public may also view the livestream of the meeting from the lobby of the Board of Water Supply, Public Service Building, 630 S. Beretania St., Honolulu, HI 96843.

TESTIMONY CAN BE SUBMITTED AS FOLLOWS:

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BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

APPROVAL OF MINUTES

Approval of the Minutes of the Regular Meeting Held on June 24, 2024.

MOTION TO APPROVE

Kapua Sproat and Jonathan Kaneshiro motioned and seconded, respectively, to approve the Minutes of the Regular Meeting Held on June 24, 2024.

Ms. Cruz-Achiu conducted a roll call vote: Vice Chair Jonathan Kaneshiro, aye; Board Member Bryan Andaya, aye; Board Member Kapua Sproat, aye; Board Member Lance Wilhelm, abstain; and Chair Nā'ālehu Anthony, aye. Board Members Edwin Sniffen and Gene Albano were absent

Ms. Cruz-Achiu announced that the motion passed with four ayes and one abstention.

THE MINUTES OF THE REGULAR MEETING HELD ON JUNE 24, 2024, WERE APPROVED AT THE AUGUST 26, 2024, BOARD MEETING			
	AYE	NO	COMMENT
NĀ'ĀLEHU ANTHONY	X		
JONATHAN KANESHIRO	X		
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
LANCE WILHELM			ABSTAIN
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO			ABSENT

ITEM FOR INFORMATION NO. 1

"August 26, 2024

REVIEW OF THE NAVY'S TECHNICAL MEMORANDUM OF TOTAL PETROLEUM HYDROCARBON (TPH) IN THE JOINT BASE PEARL HARBOR (JBPHH) WATER SYSTEM

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawai'i 96843

Chair and Members:

Subject: Review the Navy's Technical Memorandum of Elevated Total Petroleum Hydrocarbon (TPH) Levels in the Joint Base Pearl Harbor Hickam (JBPHH) Water System

In April 2024, the Navy announced its technical memorandum report explaining the uptrend of TPH levels in drinking water samples from the Joint Base Pearl Harbor-Hickam (JBPHH) water system occurring in late 2023. The Navy report concluded the detections were the result of laboratory contamination and not the November 2021 jet fuel release from the Red Hill Bulk Fuel Storage Facility.

The department conducted an independent review of the Navy's technical memorandum. Erwin Kawata, Deputy Manager, will lead a discussion to present the review results. Following this discussion, Deputy Manager Kawata will present the results of PAH detections at BWS Aiea Wells.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION:

Erwin Kawata, Deputy Manager; Jeanne Peterson and Allison Felix, Analytical Quality Associates, Inc.; and Independent Consultant Dr. Paul Winkler, gave the report.

During Dr. Paul Winkler's presentation, Manager Lau asked for clarification on PowerPoint slide five; the graph indicates the vertical or y-axis is the concentration of Total Petroleum Hydrocarbon diesel (TPH-d) in parts per million, and the horizontal or x-axis is the sample number.

At 2:34 PM, Board Member Gene Albano joined the Board Meeting via Zoom.

Manager Lau asked Dr. Winkler where he thought the TPH detections came from.

Dr. Winkler responded that the method used to monitor TPH, Method 8015, is not specific; however, it indicates something is present. He stated that there is insufficient data to determine where the TPH is coming from.

Manager Lau inquired if the conclusions of the SWARM report in the Navy's Technical Memorandum Report are unsupported.

Dr. Winkler replied that the Navy's conclusion does not explain the increase in TPH frequency.

Manager Lau asked Dr. Winkler for his thoughts about the increase in complaints of health issues and chemical-like smells from people using water from the Navy's water system.

Dr. Winkler said he could not say that it was not due to the TPH detections.

Chair Anthony stated that after the spill, the Navy conducted up to 8,000 water tests to compile a data set and help understand the effects of the contamination on the environment and the public. He asked Dr. Winkler if any of the test results were valid.

Dr. Winkler responded, "From a technically compliant position, I would say that the tests are not valid because the water was not dechlorinated, and it absolutely should have been dechlorinated before they did the extraction."

Chair Anthony inquired if the two years of data collected were questionable or unusable.

Dr. Winkler replied that the data collected is definitely questionable.

Manager Lau asked if the Environmental Protection Agency (EPA) method requires dechlorinating the water samples collected before testing.

Dr. Winkler responded that EPA's compendium methods, including the TPH Method 8015, specify how to collect and preserve samples in Chapter 4 of the compendium, which states dechlorinating the sample when residual chlorine is present. The reason for dechlorinating the sample is to remove chlorine that can and will react with chemicals that can form compounds that can be problematic to the testing.

Board Member Kapua Sproat commented that after two years of collecting and testing drinking water samples, to find that the results could

be questionable due to procedures that were not followed. She inquired about the benefit of third-party testing.

Dr. Winkler stated that third-party testing and review of past test results is essential. He advised getting a third party that has no interest in the process except to provide data to help mitigate any problems.

Chair Anthony expressed his disbelief that after running 8,000 tests, to find the tests were done incorrectly.

Dr. Winkler stated that dechlorination of the sample is critical and should have been noticed here.

Chair Anthony recognized that Board Member Gene Albano joined the Board meeting via Zoom at 2:34 PM and asked that he make his disclosures.

Board Member Gene Albano shared that he was alone at his location.

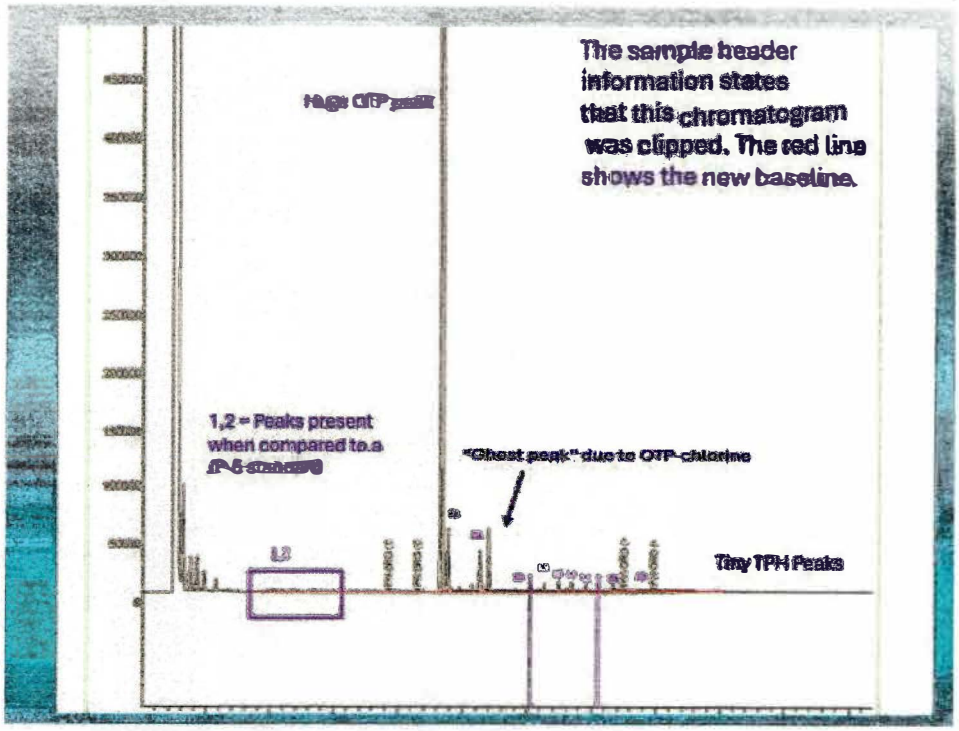
After Ms. Jeannie Peterson and Allison Felix's presentation, Board Member Sproat asked what would be the best course of action going forward.

Ms. Peterson shared that the Navy proposed to continue monitoring using a different preparation technique, proposing to lower the concentration of the surrogate to a more appropriate level for drinking water, dechlorinate the water sample before testing, and use vials to reduce the chance of contamination. She commented that a lot of method development would need to be done to prove that the preparation method would not affect determining how low someone can see. Ms. Peterson expressed caution with changing too many test variables at the same time and recognize the testing is looking for very low levels in drinking water. Therefore, there cannot be any contamination, and all instruments used to perform such tests must be dedicated to only drinking water.

Board Member Sproat expressed the need for third-party testing.

Chair Anthony asked if clipping is the process of dropping the red baseline to zero shown on slide six of the PowerPoint (PPT) presentation.

Ms. Allison Felix explained that the red line in the clipped chromatogram shows where the baseline had been raised and not where it started. She further explained that the baseline is flat and shows no detects. Therefore, the baseline may or may not have been zero and would depend on their recorder.



Chair Anthony inquired if the chromatogram provides high and low-level detections of contaminants in the drinking water.

Ms. Felix explained that if the lab had lowered the surrogate and solvent peeks, there would have been a better picture of the TPH detections.

Manager Lau commented that the first large peak is the solvent peak, and the second large one is the surrogate.

Ms. Felix agreed with Manager Lau and shared a scenario: If the surrogate were lowered and the recorder was set to record after the solvent peak, the smaller peaks would look bigger. She also mentioned that if the sample was run at the same level, the peaks could be compared by matching patterns, shapes, and relative sizes. However, when the chromatogram is clipped by raising the baseline, no data is provided to show the baseline before it was clipped. Smaller peaks of interest could have been removed by being clipped out.

Manager Lau inquired if these changes were made in error or if there was a lack of knowledge.

Ms. Peterson stated that neither she nor Ms. Felix can determine why, who, or how the chromatograph was done. The laboratory cites noise in the data as the reason they clipped the baseline, which is an analyst

judgment. Since the data before and after the clipping were not provided in the report, she cannot further comment.

Manager Lau asked if Ms. Peterson and Ms. Felix would characterize this typical Department of Defense (DOD) or military testing studies and diligence used to ensure the laboratory and sampling methodology are performed well.

Ms. Felix responded that the collection and testing of a sample must start with a plan of action that everyone involved is aware of and following.

Manager Lau inquired if it included those in the field collecting data.

Ms. Felix replied that everyone involved in the process must follow the plan, including the standard operating procedures for collecting water samples. If the plan does not state the steps to collect samples, the plan should refer to the standard operating procedure.

Manager Lau asked if it would be unreasonable in this case involving two years and 8,000 plus samples to audit periodically to ensure everything was done correctly.

Ms. Peterson responded that a technical review of the governing documents, which is usually a sampling analysis plan or a quality assurance project plan, is critical to the success of a project.

Manager Lau also asked if, during the course of implementing the plan, it was unreasonable to periodically do independent checks, especially given the critical nature of the information and knowing the community continues to face health issues and struggling to determine what is making them sick.

Ms. Felix stated that audits and assessments ensure the laboratory and the people involved follow the plan, rules, and regulations.

Dr. Winkler shared that more information would be needed since Method 8015 is non-specific. He explained that Method 8015 indicates that a chemical is present but does not specify the chemical. A specific method, such as a mass spectrometer, should be used to identify and provide information on a chemical. Non-target analyses that look for chemicals that you don't know are present are difficult to do using a standard EPA method that looks for pre-specified target analytes. Dr. Winkler commented that getting more comprehensive chemical data is the way forward.

Ms. Felix commented that the Navy's lab looked at everything within two different retention times of the chromatogram using the non-specific 8015

method. If the same sample were processed through gas chromatography-mass spectrometry (GC-MS), the peak of TPH would have been seen.

Manager Lau commented that the Red Hill Bulk Fuel Storage Facility has operated for over 80 years, storing various fuels and additives that may have leaked into the environment or gotten into their drinking water system.

Dr. Winkler responded that there could have been many things that could have happened to what was stored in the facility.

Chair Anthony referred to the last slide, which noted, "AQA found the existing data to be very suspect and, thus, would qualify it as unusable to prove the absence of jet fuel in drinking water system." He asked if there was jet fuel in the Navy's drinking water.

Ms. Felix replied that they could not determine if jet fuel was in the water due to too much interference and too many unknowns. She stated that a method development must be done to find a definitive method.

Dr. Winkler added that more specific information is needed. He recommended that a GC-MS and non-target analysis be done. The method developed should use a different analytical technique.

Board Member Lance Wilhelm asked if it is possible to develop a methodology by which one can make a definitive statement about its existence without knowledge, which has not yet been applied.

Dr. Winkler responded that the methodology had not been applied.

Ms. Peterson commented on the last slide that Chair Anthony referenced; she stated that definitive statements require definitive data, and the data that has been provided is not definitive.

Chair Anthony commented that the data provided by the Navy was not limited.

Board Member Wilhelm commented that if a method was developed and reviewed, an expert could provide an opinion on the methodology, resulting in a definitive response.

Dr. Winkler agreed with Board Member Wilhelm's statement.

Chair Anthony asked if Dr. Winkler agreed with the methodology the BWS uses for data.

Dr. Winkler and Ms. Peterson responded that they haven't looked into the BWS's methodology or data that Deputy Manager Kawata and his team collected.

Chair Anthony commented that the challenge is in the methodology; the parties involved do not agree on the type of method used; therefore, the data provided and received is like comparing apples to oranges.

Board Member Sproat commented that specific protocols should be followed and used when testing drinking water to get the most accurate test results. Therefore, this can be done if experts, the BWS, and regulators were to work together to develop a methodology that can determine each contaminant. The results from the data collected over the past two years are inconclusive due to how the data was handled, not because it cannot be tested.

Board Member Wilhelm asked if a specific method could be developed to detect TPH. He also asked if the instructions were precisely followed during the data collecting and testing, would the results have provided more apparent answers?

Deputy Manager Kawata stated that Method 8015 was originally designed for hazardous waste but may be adapted to drinking water, which the BWS has done. He explained that the BWS took Method 8015 and performed a method development study, which the Code of Federal Regulations requires in cases where a method is designed for one type of medium and applied to a different medium. The BWS performed a method development study since there is no official drinking water method for TPH analysis. Deputy Manager Kawata further explained that after the BWS ran a method development study, the BWS continued with a Method Detection Limit (MDL) study, which is a study that tests samples for TPH diesel and oil and then compares them against certified standards. He shared that the BWS has had no detections. However, if the BWS encounters any detections, the BWS would test the detected extract using a mass spectrometer to confirm what is detected. The BWS periodically reviews the MDL study to verify that the process continues to provide reliable results.

Board Member Wilhelm inquired about the results of the method the Navy used.

Deputy Manager Kawata replied that the Navy did not dechlorinate the drinking water sample, which became a major issue. He shared the BWS's process: If the BWS collected chlorinated samples then a dechlorinating agent is added. If the sample was collected directly from the well when there is no chlorine, then no dechlorinating agent is added.

Deputy Manager Kawata stated that all BWS staff and samplers know the protocols in both conditions depending on the required analysis.

Manager Lau asked how much solvent and surrogate the BWS lab used testing.

Deputy Manager Kawata replied that after checking with BWS laboratory staff, the amount of solvent and surrogate used is a smaller quantity.

Manager Lau added that using smaller quantities of solvent and surrogate makes the resolution in the smaller peaks identifiable.

Chair Anthony asked Deputy Manager Kawata if more refinement is needed in the Navy's drinking water monitoring plan.

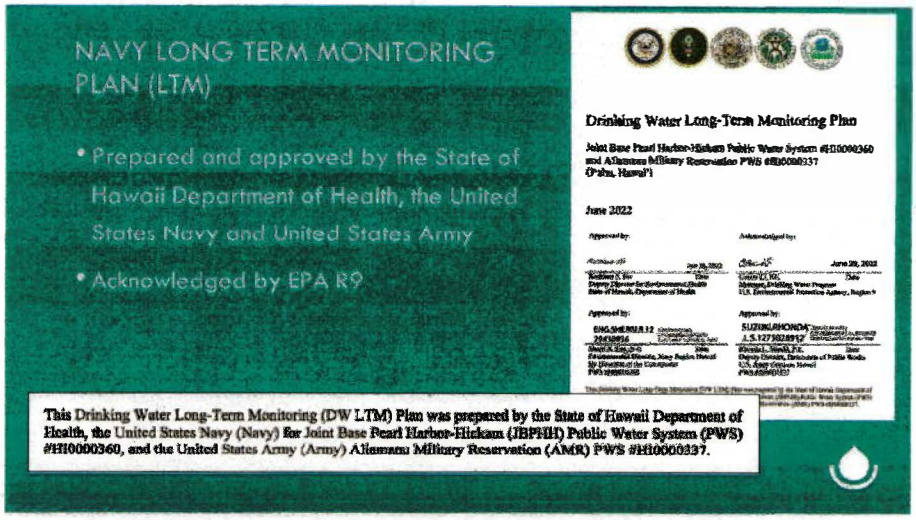
Deputy Manager Kawata responded that the Navy has prepared and extended their drinking water monitoring plan. The BWS believes improvements can still be made from the initial drinking water monitoring plan; however, it seems the Navy is on the right track. He commented that more specific information about the plan is needed. Deputy Manager Kawata shared that moving forward, with the new plan for extended drinking water monitoring, the Navy tests and analyzes the sample and does not replicate what was sampled in the past. The past sample conditions are no longer used to see whether or not there was TPH.

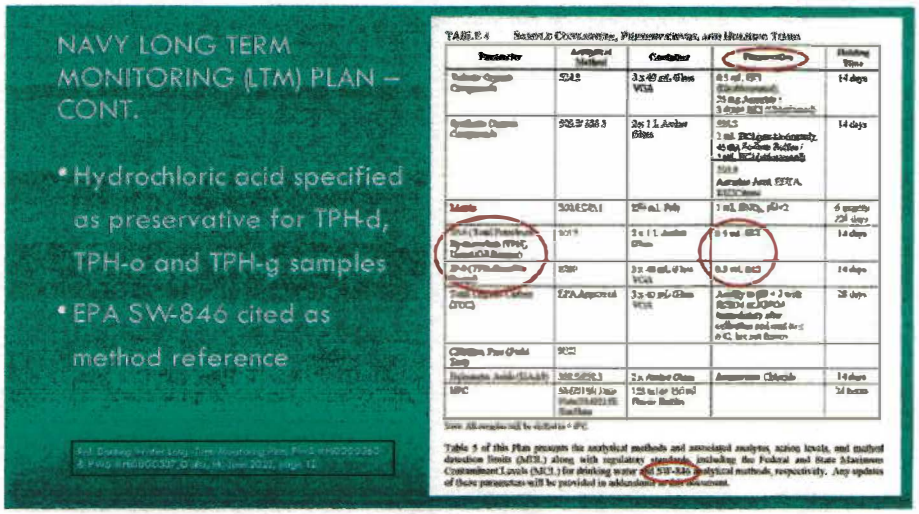
Chair Anthony inquired if the past 8,000 tests are no longer useful.

Deputy Manager Kawata replied that the past tests are suspect and technically invalid. There is no way to know whether there was TPH in the drinking water samples since the method was not followed.

Chair Anthony referred to Deputy Manager Kawata's PPT, slides three and four. He stated that the document pictured in slide three indicates that the Navy entered into a long-term monitoring (LTM) plan that states the policies, procedures, and methods to be used, which the EPA, Department of Health (DOH), and Navy agreed and sign. PPT slide four indicates that the Navy used a method different from the one specified by the EPA.

Deputy Manager Kawata stated that the EPA cited SW-846 as the method reference, also noted at the bottom of PPT slide four.





Chair Anthony commented that the LTM plan was flawed by the people who signed it.

Deputy Manager Kawata responded that someone should have checked and verified what SW-846 consisted of.

Chair Anthony commented that what happened was not a staff error; the plan had started off wrong.

Board Member Sproat expressed concern about the LTM plan since the regulators signed it and was not done correctly. She expressed her support for third-party testing.

Chair Anthony echoed Board Member Sproat's comments. He commented that we cannot go another two years of monitoring, and the data is questioned because of the methodology.

Manager Lau agreed with Chair Anthony about how the LTM plan and groundwater monitoring analysis were set and followed through, which raised questions.

Board Member Sproat asked Deputy Manager Kawata what should be done moving forward.

Deputy Manager Kawata shared that the next step would be to understand the extended drinking water monitoring plan and its process, protocols, and conditions under which the samples are collected. A standard operating procedure (SOP) is used for sampling and testing, which can apply to water samples, how to clean glassware, analyze and record the data, etc. Everyone involved in the sampling and testing must understand the process and periodically check that all steps and procedures have been followed. He stated that the BWS has its own SOPs that are followed.

Vice Chair Jonathan Kaneshiro inquired if the Navy was provided with the reports presented and if they knew the specifics of hydrochloric acid.

Deputy Manager Kawata replied that the peer review reports were presented to the Board first and will be available to the Navy on the BWS website. If the Navy has any questions, they may contact the BWS.

Manager Lau added that the reports presented at the Board meeting are public information.

Ms. Peterson clarified that the Navy is aware and has admitted in their technical memorandum that the samples taken were a primary problem.

Chair Anthony stated that the community had been consuming tainted drinking water for two years and may still be drinking it. The sampling and testing must be done right. The BWS's interest in what is happening is to have a better understanding and have the ability to act quicker should the BWS face the same dilemma.

Manager Lau shared that the BWS would be reaching out to the Navy, Army, and regulator to discuss.

There was in-person testimony:

Susan Pcola-Davis	*Shared her research on lead detections in drinking water in various zones and PAHs found in RHMW02. She also provided a 22-page attachment.*

Chair Anthony recalls when the BWS reported that the BWS would be required to check its water system for lead, he asked if the Navy was required to do the same.

Deputy Manager Kawata responded, yes.

Ms. Susan Pcola-Davis shared that at a meeting, the Navy stated they were not responsible for premise plumbing; however, they did report on it.

Chair Anthony inquired about lead exceedances. If the BWS were to experience any exceedances, where would it be reported, and how would it be remedied?

Deputy Manager Kawata explained that under the lead and copper rule, if there are high levels of lead recorded from a home, it is required that the homeowner is interviewed, investigate what may be causing the high lead levels, and take follow-up samples. He shared that the BWS has experienced high-level lead reports in which, in every case, the BWS found a condition attributed to a high level of lead detected in the home. The number of high lead levels found in homes served with the BWS water system is very small compared to those reported by the Navy.

Chair Anthony commented that the city banned lead before it became a more significant water system issue.

Deputy Manager Kawata shared that plumbing codes were found that specified the types of materials to use. Materials such as galvanized pipe and copper could be used, but no lead service lines exist.

Ms. Pcola-Davis added that certain low-level detections require additional testing steps.

There was in-person testimony:

Ilima DeCosta	*Shared her support on behalf of the Community Representation Initiative (CRI) for the BWS's efforts to protect the water resources, the people, and the environment. Ms. DeCosta also provided written testimony.*
Lacey Quintero	*Shared that as a former member of the CRI, she received daily complaints over the last three years about the impacts of the Navy's water system and expressed her gratitude and support for the BWS. Ms. Quintero also provided written testimony.*
Tara Rojas	*Expressed her appreciation and*

	support for the BWS. Commented that the Ahupua'a Public Trust must be upheld, there should be no genocides, and there should be no exemptions for the military, DOH, and EPA; they should be held accountable.
Susan Gorman-Chang	*Thanked the BWS for hiring and sharing third-party information. She shared her distrust of the Navy and the regulators.*
Mialisa Otis	*Shared that as a farmer, what happens to water affects families, well-being, and livelihood. She thanked the BWS and the CRI.*

There was remote testimony:

Jamie Simic	*Thanked the BWS for their continous fight for the community and for the information that was provided and validated much of what those affected. Had questions: were there any pinholes found in the the defueled Red Hill tanks? Since other plumes have been identified, can it be tested for the various contaminations?*
Marti Townsend	*Shared she was testifying on behalf of the Earth Justice and expressed her support for what the BWS is doing. She commented that she is not surprised that the Navy botched two years of samples and tests, the Navy is untrustworthy of protecting Oahu's water.*
Wayne Tanaka	*Of the Sierra Club expressed his gratitude for the leadership of the BWS to protect our water and future and shared the support of the Sierra Club for the BWS. He commented on the Navy's lack of transparency and offered to share the information the Sierra Club has gathered.*

Amanda Feindt	*Testifying as a CRI member, an impacted family, and as an active duty army officer who has been retaliated against for speaking on the matter of public health and safety. Expressed her gratitude for the BWS's relentless advocacy. She commented on the need for the President, Secretary of Defense, Congressional Delegations, and the Governors support and funding.*

There were written testimony:

Patti Choi	*Expressed heartfelt appreciation to the BWS for their extraordianary work protecting our water.*
Breanne Fong	*Mahalo to the the BWS for exercising great care when making decisions about our water. Ask that the BWS continue to put pressure on the Navy to do more testing.*

Chair Anthony announced that he would be going back to Action #2: Approval of the Minutes of the Regular Meeting Held on July 22, 2024.

Report:

Technical Evaluation of the JBPHH Interagency Team Memorandum on TPH Detections During the Long-Term Monitoring Program

PRESENTED TO:
HONOLULU BOARD OF WATER SUPPLY (BWS)

PRESENTED BY:
PAUL C. WINKLER, PH.D.

Interagency Team (Navy) LTM Observations

- In period six, July-December 2023, frequency of Total Petroleum Hydrocarbon (TPH) detections increased.
- Navy team concluded:
  - The increased frequency of detections was associated with laboratory contamination.
  - The increased frequency of detections was associated with chlorine in the water.

What did the Interagency Team (Navy) Use to Make a Conclusion?

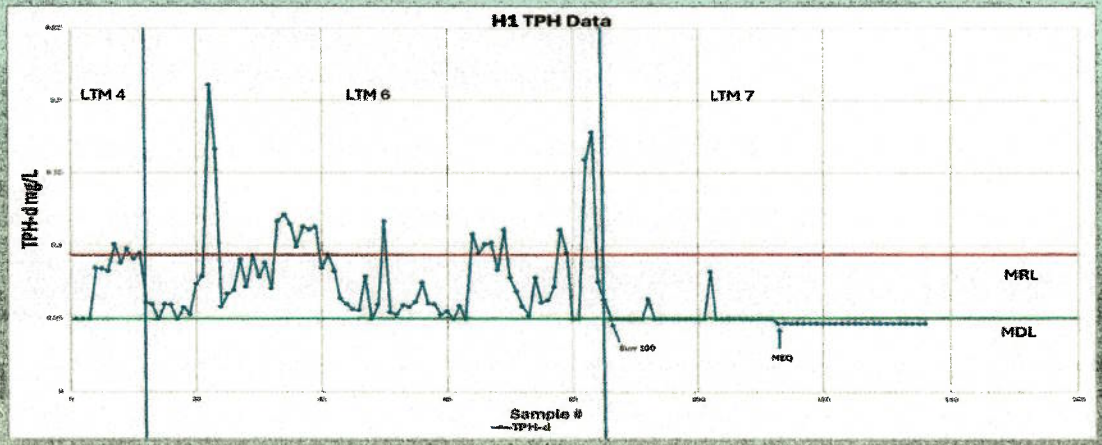
- Increased frequency had the same pattern for all zones – Indicates a Lab Problem
- Reviewed the laboratory method for deficiencies
- Statistical analysis to correlate issue to residual chlorine

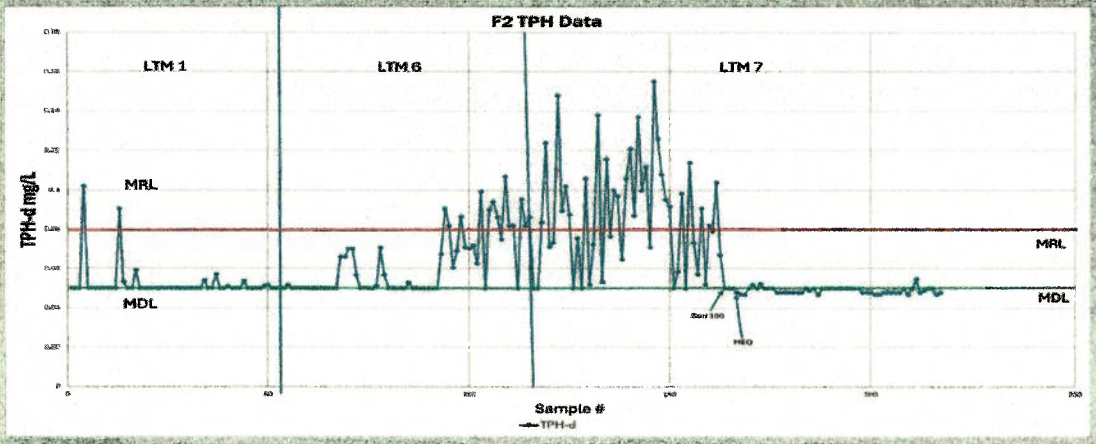
Understanding the Lab Issue

- Laboratories process samples to allow for the measurement of trace concentrations of organic chemicals.
- Laboratories analyze blank samples to monitor contamination from the process – Did the laboratory contaminate the samples during processing?
- Surrogate – a chemical added to the sample to monitor the process – Did the surrogate react with chorine?

Did the Zones Exhibit the Same Pattern?

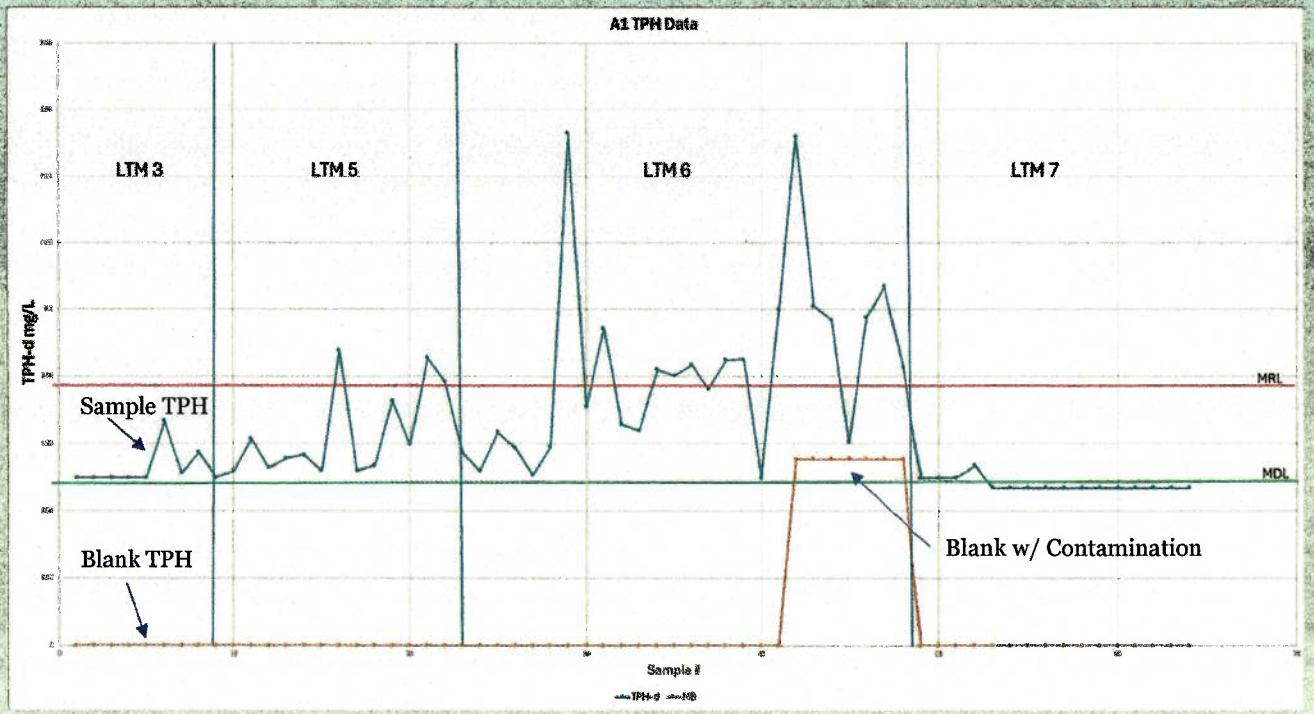
- Zones H1 and F2 do not have the same pattern for detections of TPH.
- Note LTM 6





Did Laboratory Contamination Add to the Problem?

- 66 Samples analyzed in Zone A1
- One contaminated blank – affects 6 samples
- Laboratory contamination does not appear to be a major cause for <u>increased frequency</u> of TPH detections

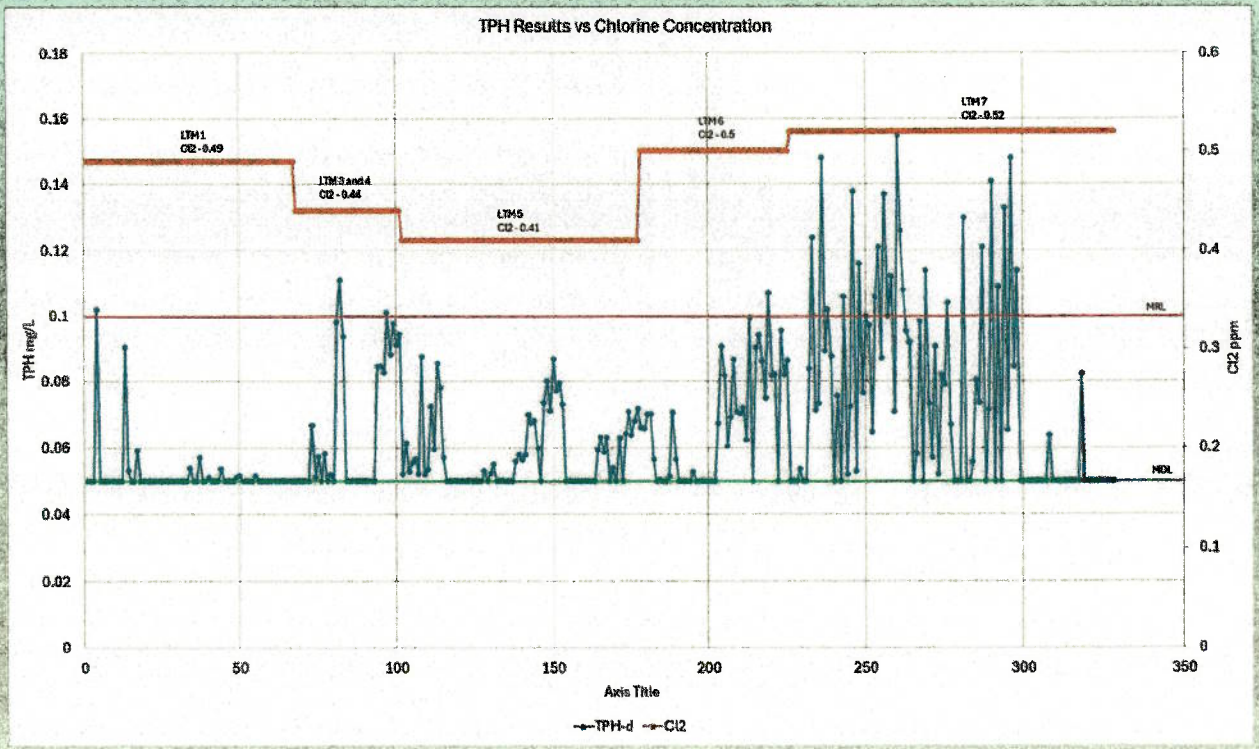


Did the Surrogate React with Chlorine?

- The surrogate does react with chlorine.
- The Surrogate concentration was constant throughout the LTM. TPM detections should have occurred throughout the sampling period.
- While the surrogate does react with chlorine, the data indicates that it does not explain why the frequency of TPH detections increased.

Does the Concentration of Residual Chlorine Change the Frequency of TPH Detection?

- Frequency of TPH detections do not change with chlorine concentration



Method Compliance and Data Defensibility

- USEPA Methods specify how to collect, preserve and handle samples

TABLE 4-1 (continued)
RECOMMENDED SAMPLE CONTAINERS, PRESERVATION TECHNIQUES, AND HOLDING TIMES[a]

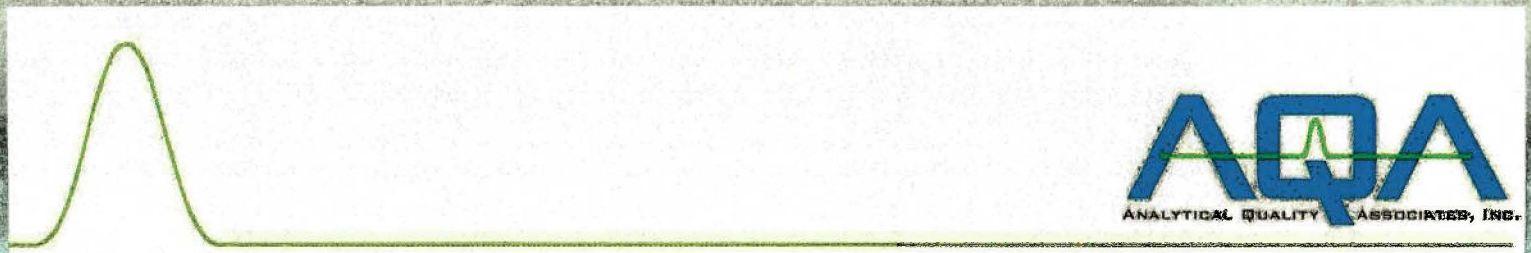
		preservatives and analyze as soon as possible.	
SEMIVOLATILE ORGANICS/ORGANOCHLORINE PESTICIDES AND HERBICIDES			
Sample Matrix	**Container[1]**	**Preservative[2]**	**Holding Time[3]**
Concentrated waste samples	125-mL wide-mouth glass with PTFE-lined lid	Cool to 0 - 6 °C.	Samples extracted within 14 days and extracts analyzed within 40 days following extraction.
Aqueous samples with no residual chlorine present	4 x 1-L amber glass container with PTFE-lined lid, or other size, as appropriate, to allow use of entire sample for analysis.	Cool to 0 - 6 °C.	Samples extracted within 7 days and extracts analyzed within 40 days following extraction.
Aqueous samples WITH residual chlorine present	4 x 1-L amber glass container with PTFE-lined lid, or other size, as appropriate, to allow use of entire sample for analysis.	Add 3 mL 10% sodium thiosulfate solution per gallon (or 0.908%). Addition of sodium thiosulfate solution to sample container may be performed in the laboratory prior to field use. Cool to 0 - 6 °C.	Samples extracted within 7 days and extracts analyzed within 40 days following extraction.

Method Compliance and Data Defensibility

- Samples were not collected in compliance with EPA recommendations.
- The data is technically not compliant or defensible.
- Data would be qualified by validation procedures.
- Why? - Data on how chlorine reacts with fuel is limited - difficult to know how the lack of dechlorination may affect low TPH concentrations.

Evaluation of Conclusions

- The increased frequency of detections was associated with laboratory contamination.
  - **Large majority of laboratory blanks were acceptable. The data does not support this conclusion.**
- The increased frequency of detections was associated with chlorination of the surrogate.
  - **Surrogate concentration same during LTM – expect no change in TPH frequency**
  - **Changes in chlorine concentration did not correlate with more frequent TPH detections.**



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102 Gold Ave SW
Albuquerque, NM 87102
888-678-5447
www.aqainc.net

Technical Report for the Review of the Joint Base Pearl Harbor-Hickam (JBPHH) Interagency Team's Technical Memorandum on the Lines of Evidence Evaluation of TPH Detections Observed During Long-Term Monitoring

Prepared for the Honolulu Board of Water Supply (BWS)

The Basis of the Memorandum Conclusions

- The Memorandum conclusions were based on the following assumptions:
  1. TPH detections appeared to have a similar pattern throughout all zones, even those not apparently affected by the spill.
  2. Detections in the method blanks meant the TPH detections in the samples were due to laboratory contamination.
  3. Extraneous peaks in the samples were due to the presence of the common disinfectant chlorine in the drinking water.
  4. The low-level TPH detects were due to blank contamination and/or interference from the chlorine.
  5. Marker compounds associated with JP-5 were absent.
- **The authors proceeded from the assumption that the random detects of TPH were analytical in nature (laboratory contamination and disinfection by-products) and did not consider alternative contamination paths.**

1. TPH detections appeared to have a similar pattern throughout all zones, even those not apparently affected by the spill.

A. The authors assumed the flush of the Red Hill Shaft was 100% effective and based the conclusion on modeling rather than actual evidence.

B. The authors did not discuss whether the well was inspected or if the recharged water was evaluated after the flush, or if water was sampled at intermediate points such as storage tanks in the distribution system.

1. TPH detections appeared to have a similar pattern throughout all zones, even those not apparently affected by the spill. (cont.)

C. "Water in neighborhoods reporting strong fuel odors and sheens was initially discharged into the open, grassy areas untreated, impacting the soil and shallow groundwater and emitting vapors into the ambient air." The contamination pathway for the fuel spill was noted as being "through fractured basalt," which also underlies the open grassy areas.

2. Detections in the method blanks meant the TPH detections in the samples were due to laboratory contamination.

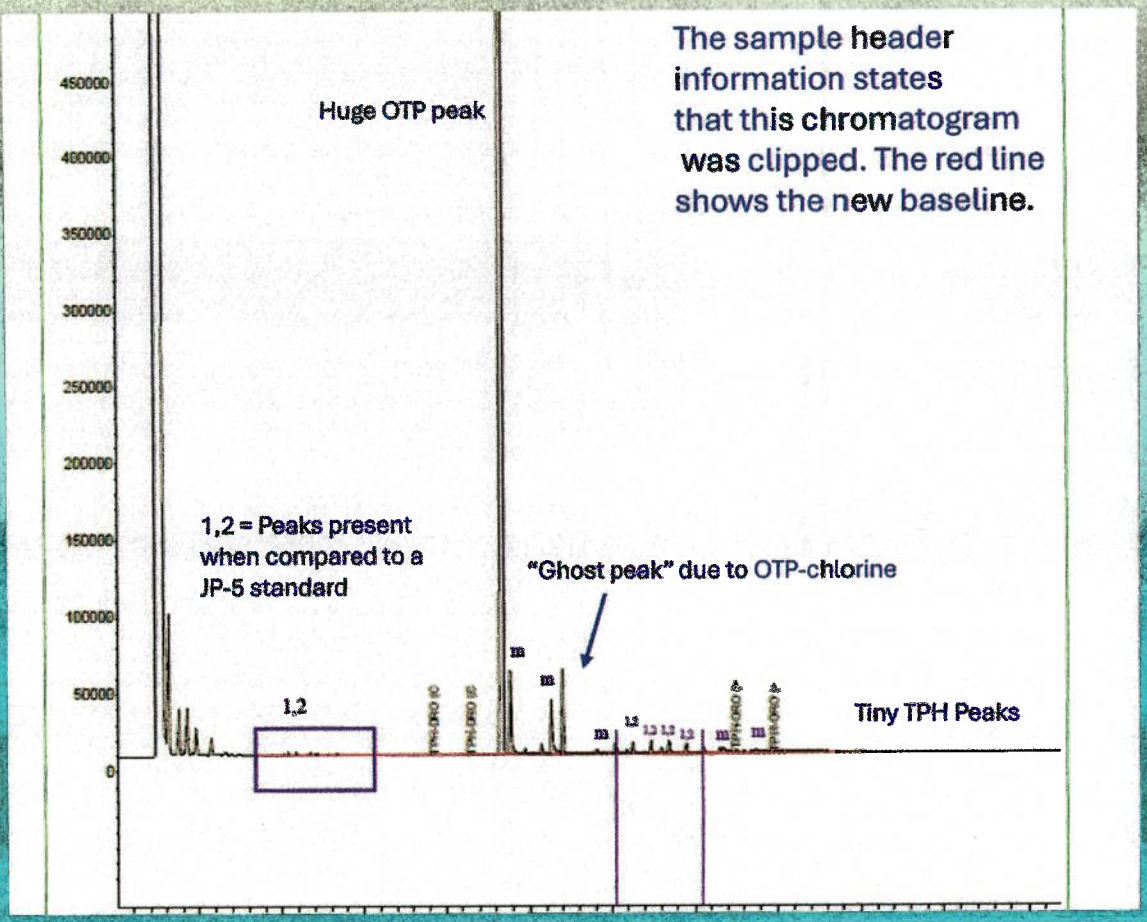
A. Method 8015, used to analyze the samples, was not adjusted for low-level analysis by using dedicated glassware and instrumentation and lower concentration standards.

B. In many instances, there was too much interference to see low-level peaks.

C. Chromatographic data (pictures of peaks) were cut off at the bottom ("clipped") because laboratory analysts judged that the peaks were noise, effectively making all peaks on the chromatogram smaller and/or cutting them out entirely.

D. The contamination in the method blanks shows that there is contamination in the blanks, but it does not prove that JP-5 is not present in the samples.

A picture is worth a thousand words



3. Extraneous peaks in the samples were due to the presence of the common disinfectant chlorine in the drinking water.

A. The sample collection method was not appropriate for the project.
   i. According to the sampling plan, hydrochloric acid was added to all samples.
   ii. Sodium thiosulfate, which would have removed the free chlorine, was not used to preserve the samples as directed in Method 8015.

B. The amount of the surrogate compound (OTP) added in the laboratory virtually guaranteed an interference or "ghost peak" from the chlorine.

C. The same peaks could also be seen in the method blanks, which were comprised of deionized water and did not contain chlorine.

4. The low-level TPH detects were due to blank contamination and/or interference from the chlorine.

A. The sporadic TPH detects in the laboratory blanks and samples do not tell us where the TPH came from. Field blanks were not collected with the samples, so field contamination could not be evaluated.

B. The amount of surrogate compound OTP added by the laboratory made pattern matching of the chromatograms for low-level detects impossible.

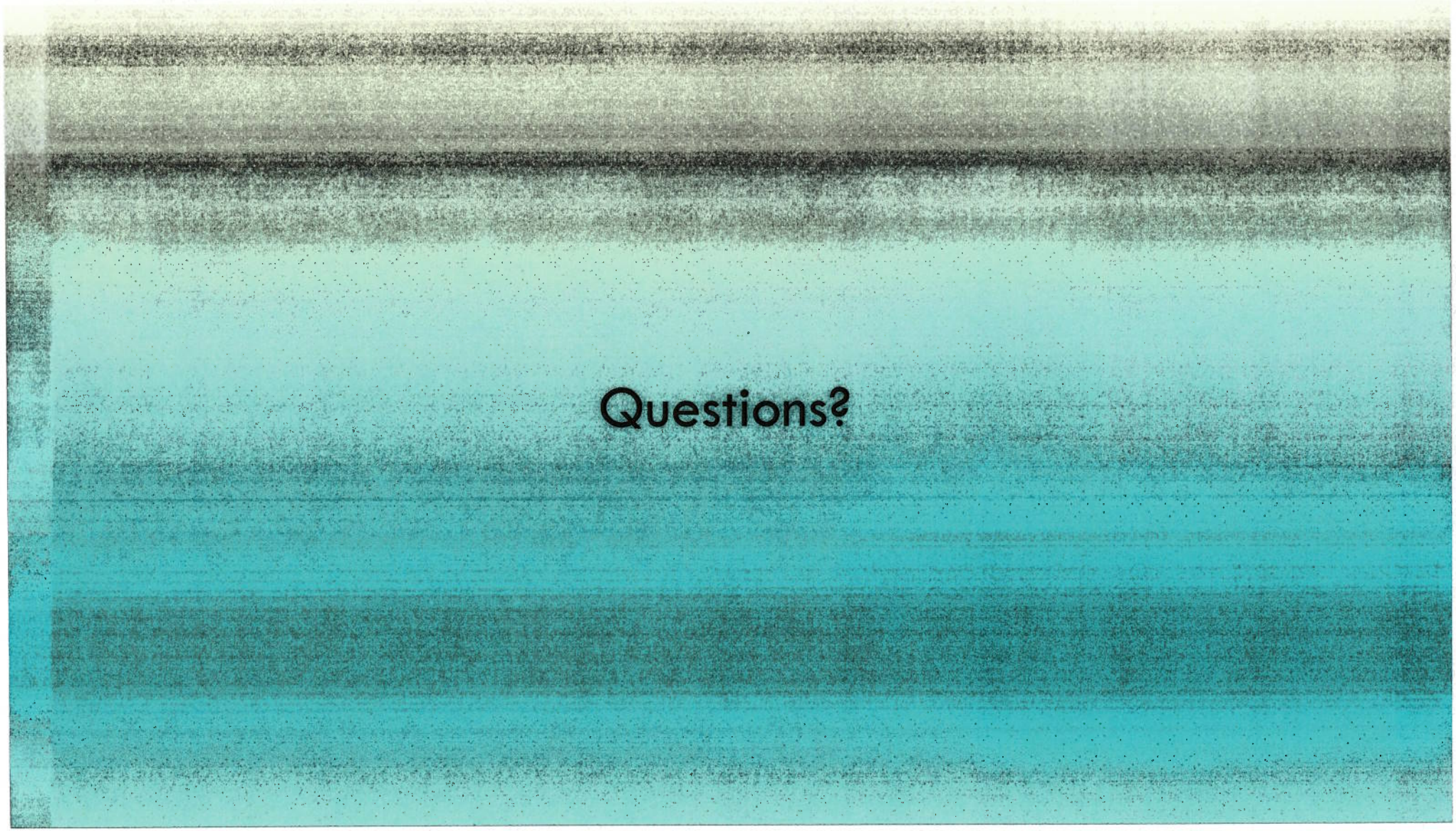
5. Marker compounds associated with JP-5 were absent.

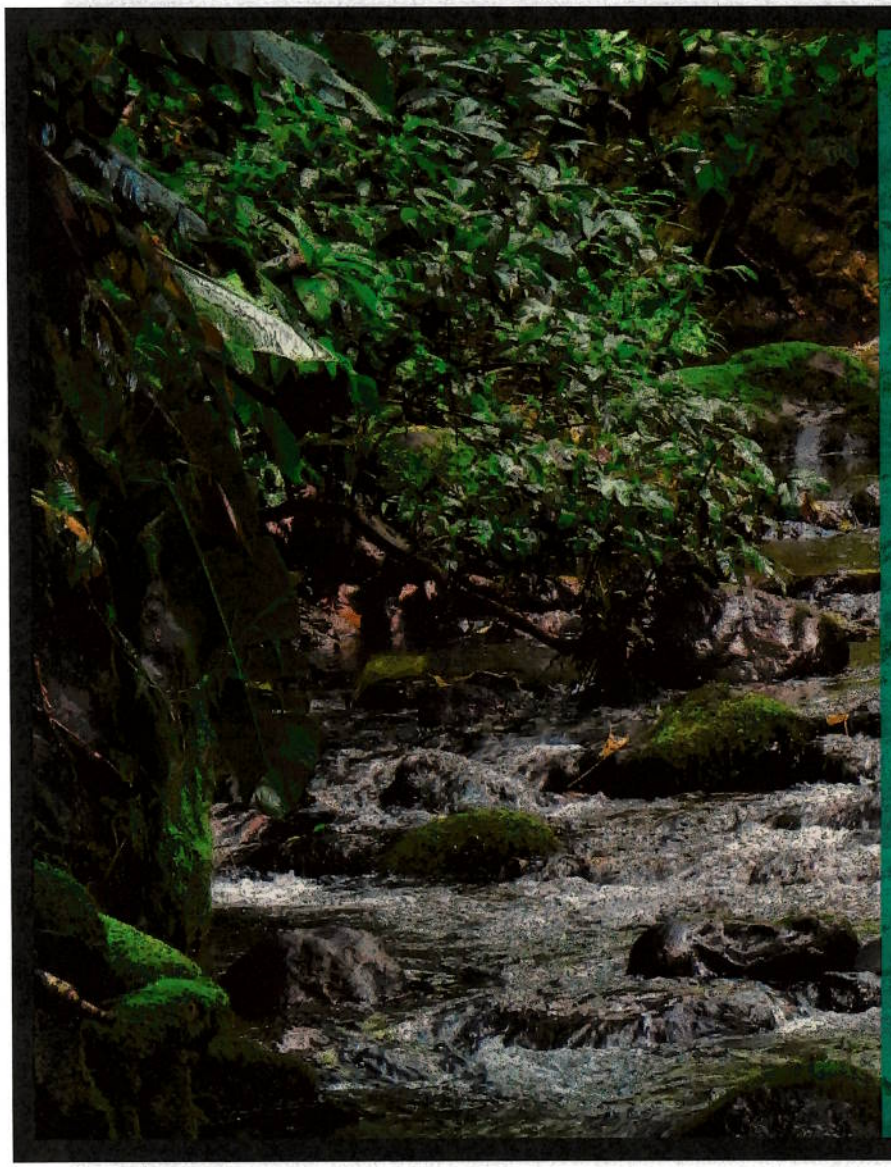
A. The marker compounds may not have been detectable at the low concentrations present in the samples.

B. Marker compounds were evaluated by Method 525.2 not Method 8015.

C. Sample containers for Method 525.2 and Method 8015 were different bottles.

AQA found the existing data to be very suspect and, thus, would qualify it as unusable for the purpose of proving the absence of jet fuel in the drinking water system.


Questions?



BWS PEER REVIEW OF NAVY TOTAL PETROLEUM HYDROCARBON TECHNICAL MEMO

Board Meeting
August 26, 2024

PEER REVIEW SUMMARY

- Navy's data does not support its conclusions that the uptrend of TPH detections in JBPHH drinking water samples were the result of laboratory contamination or reactions with chlorine.
- Test method notes to add a dechlorinating agent when collecting water samples containing residual chlorine.
- Not following the method can result in sample results that are technically invalid.

NAVY LONG TERM MONITORING PLAN (LTM)

- Prepared and approved by the State of Hawaii Department of Health, the United States Navy and United States Army
- Acknowledged by EPA R9

Drinking Water Long-Term Monitoring Plan

Joint Base Pearl Harbor-Hickam Public Water System #HI0000360 and Aliamanu Military Reservation PWS #HI0000337 O'ahu, Hawai'i

June 2022

Approved by:

Jun 16, 2022

Kathleen S. Ho Date
Deputy Director for Environmental Health
State of Hawaii, Department of Health

Acknowledged by:

June 28, 2022

Corine Li, P.E. Date
Manager, Drinking Water Program
U.S. Environmental Protection Agency, Region 9

Approved by:

ENG.SHERRI.R.1229438936 Digitally signed by ENG.SHERRI.R.1229438936 Date: 2022.07.13 19:52:42 -10'00'

Sherri R. Eng, N45 Date
Environmental Director, Navy Region Hawaii
By Direction of the Commander
PWS #HI0000360

Approved by:

SUZUKI.RHONDA.L.S.1275028912 Digitally signed by SUZUKI.RHONDA.L.S.1275028912 Date: 2022.07.19 14:35:06 -10'00'

Rhonda L. Suzuki, P.E. Date
Deputy Director, Directorate of Public Works
U.S. Army Garrison Hawaii
PWS #HI0000337

This Drinking Water Long-Term Monitoring (DW LTM) Plan was prepared by the State of Hawaii Department of ...ickam (JBPHH) Public Water System (PWS) ...Reservation (AMR) PWS #HI0000337.

This Drinking Water Long-Term Monitoring (DW LTM) Plan was prepared by the State of Hawaii Department of Health, the United States Navy (Navy) for Joint Base Pearl Harbor-Hickam (JBPHH) Public Water System (PWS) #HI0000360, and the United States Army (Army) Aliamanu Military Reservation (AMR) PWS #HI0000337.

NAVY LONG TERM MONITORING (LTM) PLAN – CONT.

- Hydrochloric acid specified as preservative for TPH-d, TPH-o and TPH-g samples
- EPA SW-846 cited as method reference

Ref: Drinking Water Long-Term Monitoring Plan, PWS #HI0000360 & PWS #HI0000337, O'ahu, Hi, June 2022, page 12

TABLE 4 SAMPLE CONTAINERS, PRESERVATIVES, AND HOLDING TIMES

Parameter	Analytical Method	Container	Preservative	Holding Time
Volatile Organic Compounds	524.2	3 x 40 mL Glass VOA	0.5 mL HCl (Unchlorinated); 25 mg Ascorbic / 3 drops HCl (Chlorinated)	14 days
Synthetic Organic Compounds	525.2/ 525.3	2 x 1 L Amber Glass	525.2 2 mL HCl (unchlorinated); 45 mg Sodium Sulfite / 2 mL HCl (chlorinated) 525.3 Ascorbic Acid, EDTA, KH2Citrate	14 days
Metals	200.8/245.1	250 mL Poly	1 mL HNO_3, pH<2	6 months /28 days
JP-5 (Total Petroleum Hydrocarbon [TPH], Diesel/Oil Ranges)	8015	2 x 1 L Amber Glass	0.5 mL HCl	14 days
JP-5 (TPH-Gasoline Range)	8260	3 x 40 mL Glass VOA	0.5 mL HCl	14 days
Total Organic Carbon (TOC)	EPA Approved	3 x 40 mL Glass VOA	Acidify to pH <2 with H2SO4 or H3PO4 immediately after collection and cool to ≤ 6°C, but not frozen.	28 days
Chlorine, Free (Field Test)	8021			
Haloacetic Acids (HAA5)	552.2/552.3	2 x Amber Glass	Ammonium Chloride	14 days
HPC	SM9215B Pour Plate/SM9215E SimPlate	125 ml or 150 ml Plastic Bottles		24 hours

Note: All samples will be chilled to < 6°C.

Table 5 of this Plan presents the analytical methods and associated analytes, action levels, and method detection limits (MDL) along with regulatory standards, including the Federal and State Maximum Contaminant Levels (MCL) for drinking water and SW-846 analytical methods, respectively. Any updates of these parameters will be provided in addendums to this document.

NAVY LONG TERM MONITORING (LTM) – CONT.

Ref: Drinking Water Long-Term Monitoring Plan, PWS #HI0000360 & PWS #HI0000337, O'ahu, HI, June 2022, page 17

5.2 FIELD SAMPLING OPERATIONS

Field staff are responsible for collecting samples each day according to assignments prepared by the scheduling team. Field staff begin their day at the sample staging area to receive their assignments and sample collection kits. The sampling teams end their day at the sample staging area to return the sample collection containers so they can be prepared for transport to the analytical laboratories.

5.2.1 Field Sampling Team Staffing and Schedule

Field sampling operations are controlled by a senior operations manager, with assistance from a deputy operations manager. Each sampling team will consist of two (2) staff, a vehicle, and a sampling kit.

Prior to sampling, the field team will inspect all supplies and consumables to ensure that they are acceptable for use. DW LTM sample collection procedures are detailed in Appendix A Drinking Water Sample Collection SOPs (SOP 1A and SOP 1B).

5.2.2 DOH Field Oversight Team

The DOH field oversight team shall be provided with Defense Biometric Identification System (DBIDS) access to JBPHH to randomly inspect the field sampling and/or sampling operations for quality assurance. The Navy and Army must provide base access to DOH personnel engaged in this oversight. Upon receipt of the sampling plan, if DOH representatives desire to inspect, DOH shall submit for DBIDS installation

NAVY LONG TERM MONITORING (LTM) – CONT.

- For 8015 TPH-g, additional preservative is not required, remove the cap of the empty VOA vial and fill the vial until a convex meniscus is achieved. Place the cap on the vial and tighten. Once the vial has been sealed, turn the vial upside down and look for the presence of bubbles. If any bubbles are present greater than half the size on a pea, re-collect the sample. DO NOT add additional water. If there are no bubbles repeat the process until all the vials have been filled.

- For the 8015 TPH-d/o sample, fill the bottle 1 or 2 inches below the top (i.e. to the neck of the bottle). Place the cap on the bottle and tighten. Gently tip the bottle to mix the preservative.

Ref: Drinking Water Long-Term Monitoring Plan, PWS #HI0000360 & PWS #HI0000337, O'ahu, HI, June 2022, Appendix A, SOP1B

SOP 1B: Drinking Water Sample Collection, Part B

Scope – The purpose of this SOP is to ensure the sample collection process is performed in a manner consistent with requests made by both EPA and Hawaii State Department of Health. The option to collect a sample from the first flush of water from a tap is a deviation of typical State and Federal requirements for the collection of drinking water samples for the generation of definitive-level analytical data.

Procedure - Once the headspace/sheen observations and free chlorine tests have been recorded according to Part A, samples can be collected for shipment to the designated analytical laboratory.

- Pre-sampling preparation - Place the cooler containing the sample containers to be filled next to the towel
  - bottleware and preservatives are present in the sample
  - ml plastic bottle for metals contains the 1:1 nitric
  - ny of the bottles.
  - Cs and 8015 TPH-g.
  - ls on the interior surface of the vial, do not shake or
  - concave meniscus at the top of the vial. Place cap on
  - several times to dissolve the solid ascorbic acid
  - drops of HCl using a dropper supplied by the lab. If the meniscus is not convex, add more sample until convex but do not overfill. Place cap on the vial, tighten and gently invert the vial several times to mix.
  - For 8015 TPH-g, additional preservative is not required, remove the cap of the empty VOA vial and fill the vial until a convex meniscus is achieved. Place the cap on the vial and tighten. Once the vial has been sealed, turn the vial upside down and look for the presence of bubbles. If any bubbles are present greater than half the size on a pea, re-collect the sample. DO NOT add additional water. If there are no bubbles repeat the process until all the vials have been filled.
- Second collect the samples for EPA Method 5310 TOC.
  - bottle. Do not shake or
  - servative.
- Third collect the samples for EPA Method 525.2 SOCs and 8015 TPH-d/o.
  - Remove cap and tilt the bottle so the flow falls on the interior wall of the bottle. Do not shake or agitate.
  - For the 525.2 SOC sample, fill the bottle 1 or 2 inches below the top (i.e. to the neck of the bottle). Add a vial of 1:1 HCl. Place the cap on the bottle, tighten and gently tip the bottle to mix the preservative.
  - For the 8015 TPH-d/o sample, fill the bottle 1 or 2 inches below the top (i.e. to the neck of the bottle). Place the cap on the bottle and tighten. Gently tip the bottle to mix the preservative.

WHAT IS SW-846?

- EPA's official collection of methods for complying with RCRA regulations.
- Methods are tested, validated undergo extensive review
- Method 8015C for non-halogenated and semi-volatile organics including TPH gasoline organics (GRO), diesel range organics (DRO) and oil range organics (ORO)

Ref: www.epa.gov/hw-sw846/basic-information-about-how-use-sw-846#WhatIsIt

Basic Information about How to Use SW-846

On this page:

- What is SW-846?
- Which Method Should I Use?

What is SW-846?

The Test Methods for Evaluating Solid Waste: Physical/Chemical Methods Compendium <https://epa.gov/hw-sw846/sw-846-compendium>, also known as SW-846 or the Compendium, is EPA's official collection of methods for use in complying with the Resource Conservation and Recovery Act (RCRA) regulations. SW-846 is organized into chapters providing guidance on how to use the methods and groups of methods, called "series", which are organized by topic. The methods and chapters change over time as updates are published <https://epa.gov/hw-sw846/federal-register-notices-related-sw-846> to keep up with evolving analytical and measurement needs.

In addition to the methods that are in the official SW-846 compendium, EPA has validated methods <https://epa.gov/hw-sw846/validated-test-methods-recommended-waste-testing>. These methods are tested and validated by laboratories and go through extensive review, but they have not been incorporated into SW-846 through the Federal Register process. EPA encourages using the validated methods, if possible, for the most current version of a method.

Related Links

- Clean Water Act Analytical Methods <http://water.epa.gov/scitech/methods/cwa/>
- Safe Drinking Water Act Analytical Methods <http://water.epa.gov/scitech/drinkingwater/labcert/methods_index.cfm>
- Environmental Measurement <https://epa.gov/measurements-modeling>

For more information on how to use the SW-846 Compendium and related documents, please view our collection of frequent questions <https://epa.gov/hw-sw846/frequent-questions-about-sw-846-compendium-and-related-documents>.

SW-846 SAMPLE PRESERVATION

- SW-846 organic analytes chapter 4 refers to Table 4-1 for recommended sample preservation information

Ref: SW-846, Update VI, Chapter 4, December 2018

CHAPTER FOUR

ORGANIC ANALYTES

Prior to employing the methods in this chapter, analysts are advised to consult the disclaimer statement at the front of this manual and the information in Chapter Two for guidance on the allowed flexibility in the choice of apparatus, reagents, and supplies. In addition, unless specified in a regulation, the use of SW-846 methods is not mandatory in response to Federal testing requirements. The information contained in this chapter is provided by EPA as guidance to be used by the analyst and the regulated community in making judgments necessary to meet the data quality objectives (DQOs) or needs for the intended use of the data.

4.1 SAMPLING CONSIDERATIONS

4.1.1 Introduction

Following the initial and critical step of designing a sampling plan (Chapter Nine) is the implementation of that plan such that a representative sample of the solid waste (or other material) is collected. Once the sample has been collected it must be stored and preserved to maintain the chemical and physical properties that it possessed at the time of collection. The sample matrix, type of containers and their preparation, analytes of interest, preservation techniques, and sample holding times must be thoroughly examined in order to maintain the integrity of the samples. This section highlights practices relevant to maintaining sample integrity and representativeness from the time of sampling until analysis is complete. This section is, however, applicable primarily to trace analyses. Some of these considerations may be less relevant for source level samples.

4.1.2 Sample Handling and Preservation: General Considerations

This following sections deal separately with volatile organic chemicals (VOCs) and semivolatile organic chemicals (SVOCs). Refer to Chapter Two and Table 4-1 of this section for recommended sample containers, sample preservation, and holding time information. The guidelines in Table 4-1 are intended to improve chemical stability in the sample matrix between the time of sample collection and laboratory preparation/analysis by minimizing loss of the analytes of interest from the sample container and limiting biological and/or chemical degradation (e.g., hydrolysis) (Sec. 4.6 Refs 1, 3-6). Sample preservation recommendations for analysis of organic chemicals almost always include refrigeration or freezing and may also include chemical preservation (e.g., addition of pH modifier). Improper handling, preservation, and storage of samples can negatively impact the representativeness of the field sample data.

TABLE 4-1 (continued)
RECOMMENDED SAMPLE CONTAINERS, PRESERVATION TECHNIQUES, AND HOLDING TIMES[a]

		preservatives and analyze as soon as possible.	

SEMIVOLATILE ORGANICS/ORGANOCHLORINE PESTICIDES AND HERBICIDES

Sample Matrix	Container[1]	Preservative[2]	Holding Time[3]
Concentrated waste samples	125-mL wide-mouth glass with PTFE-lined lid	Cool to 0 - 6 °C.	Samples extracted within 14 days and extracts analyzed within 40 days following extraction.
Aqueous samples with no residual chlorine present	4 x 1-L amber glass container with PTFE-lined lid, or other size, as appropriate, to allow use of entire sample for analysis.	Cool to 0 - 6 °C.	Samples extracted within 7 days and extracts analyzed within 40 days following extraction.
Aqueous samples WITH residual chlorine present	4 x 1-L amber glass container with PTFE-lined lid, or other size, as appropriate, to allow use of entire sample for analysis.	Add 3 mL 10% sodium thiosulfate solution per gallon (or 0.008%). Addition of sodium thiosulfate solution to sample container may be performed in the laboratory prior to field use. Cool to 0 - 6 °C.	Samples extracted within 7 days and extracts analyzed within 40 days following extraction.

SUMMARY

- Add dechlorinating agent when collecting water samples containing residual chlorine.
- Not following the method can result in conditions that impact the analysis and suspect test results.

QUESTIONS / DISCUSSION

Board of Water Supply

Meeting August 26, 2024

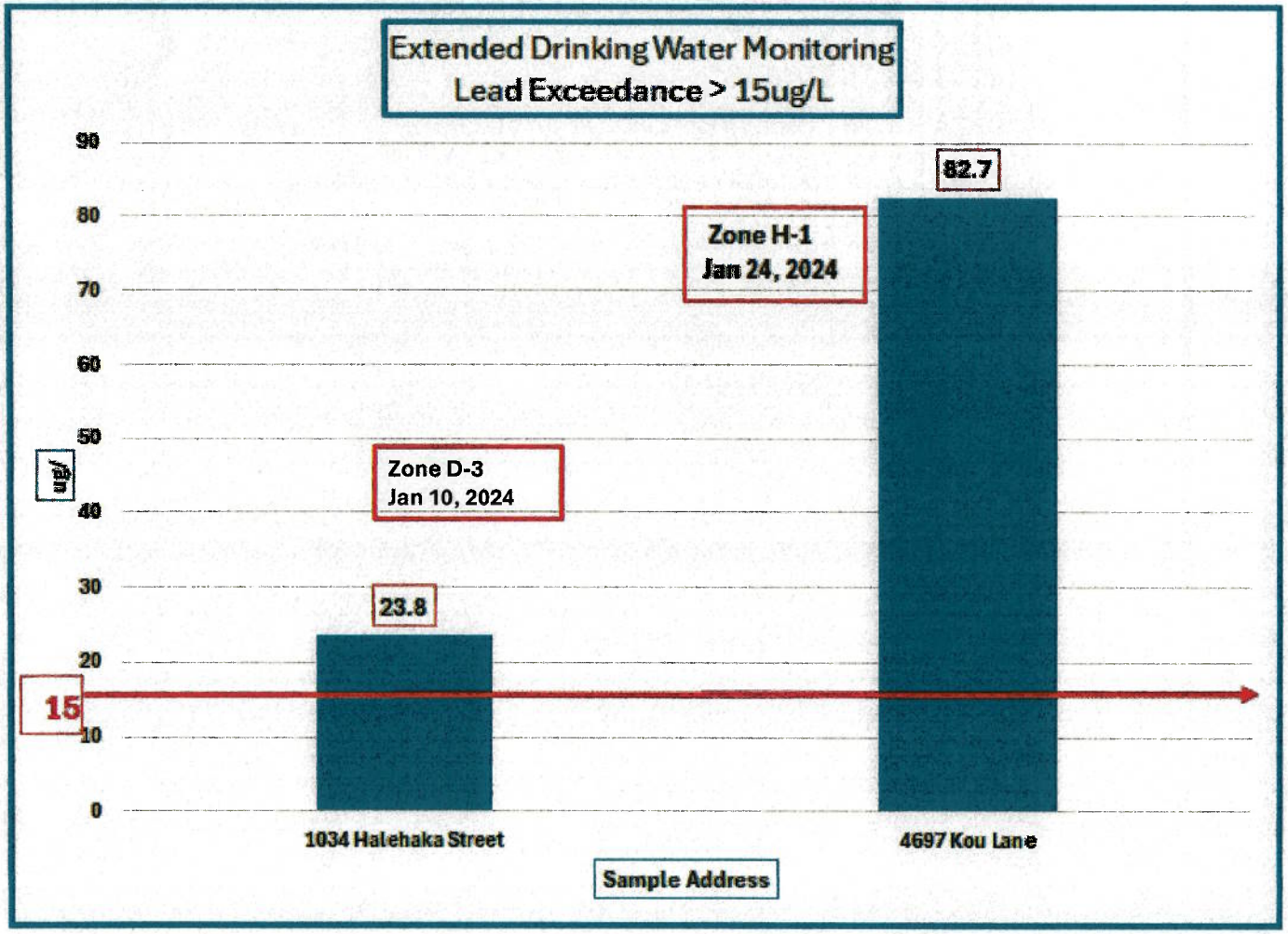
Susan A. Pcola-Davis

1. Lead DETECTIONS in Drinking Water
    a. LEAD Sampling Protocol
    b. Additional Lead Sampling Guidelines
    c. Why concentrate on Lead and not TPH etc.?
        i. LEAD is REGULATED.
        ii. Stop giving the Navy things to dismiss and dispute, such as TPH, JP%, etc.
        iii. This is a cleaner line of evidence.
    d. Why is this important?
        i. EPA and DOH have not agreed to the Navy's EDWMP.
        ii. The EPA also can't absolutely say that the Navy is following the Lead sampling protocol.
        iii. EPA did not seem to know this EPA protocol for Lead
        iv. Detections show a strong pattern.
2. Lead Exceedances in Drinking Water March 11, 2022 – January 24, 2024.
    a. The focus has been on TPH and JP5.
    b. A lack of regulation for those two leads us to a regulated chemical = LEAD.
    c. The shift is now to emphasis LEAD
    d. Next step: Health effects of Lead over time.
    e. This cannot be denied.
3. Researching PAHs in Monitoring Well RHMW02
    a. Building on the Board of Water Supply's findings

LEAD Detections
Drinking Water

Created by: Susan Pcola-Davis

By month, By date, By zone

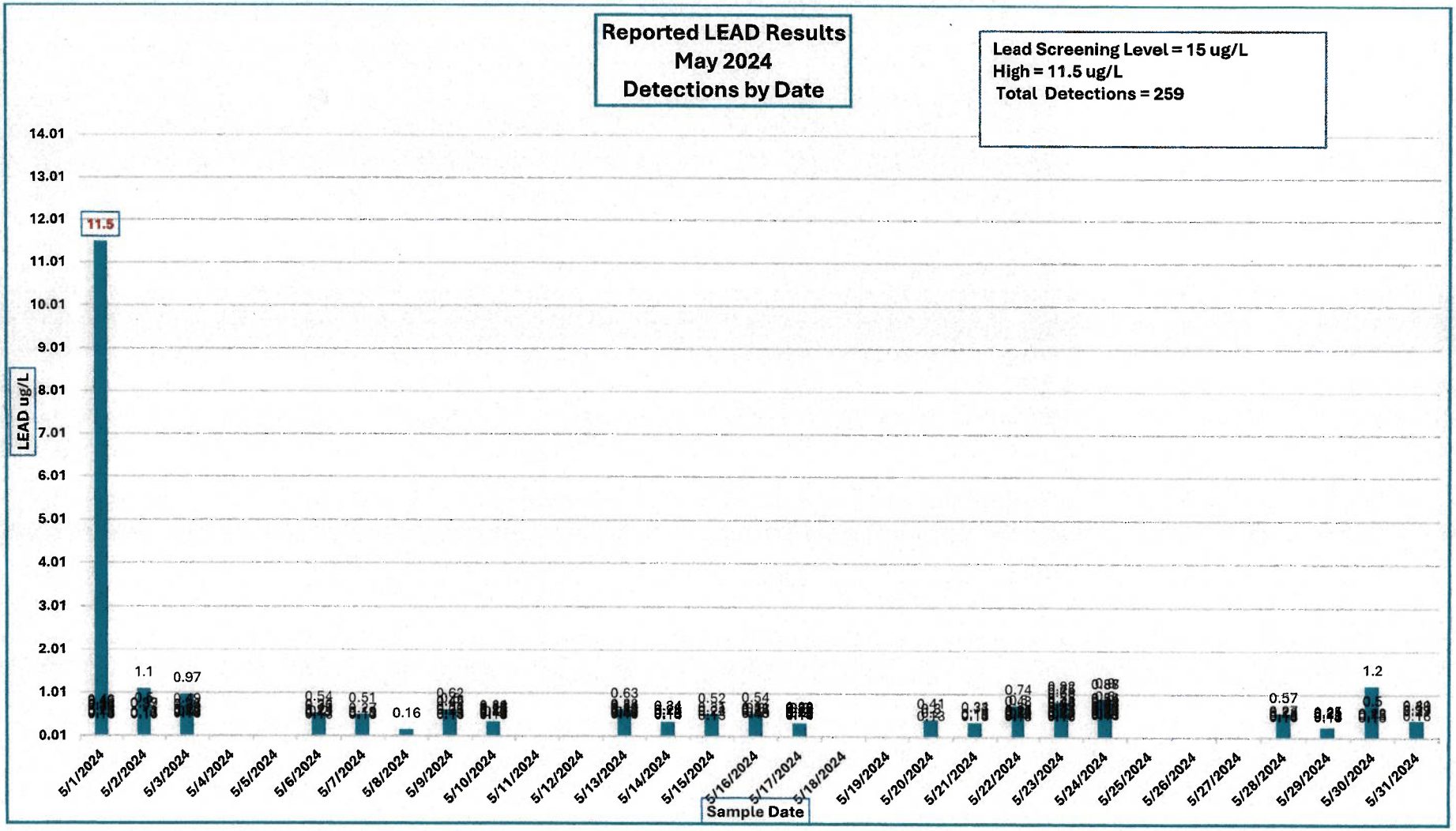

Extended Drinking Water Monitoring
Lead Exceedance > 15ug/L
90
80
70
60
50
40
30
20
15
10
0
ug/L
82.7
Zone H-1
Jan 24, 2024
Zone D-3
Jan 10, 2024
23.8
1034 Halehaka Street
4697 Kou Lane
Sample Address

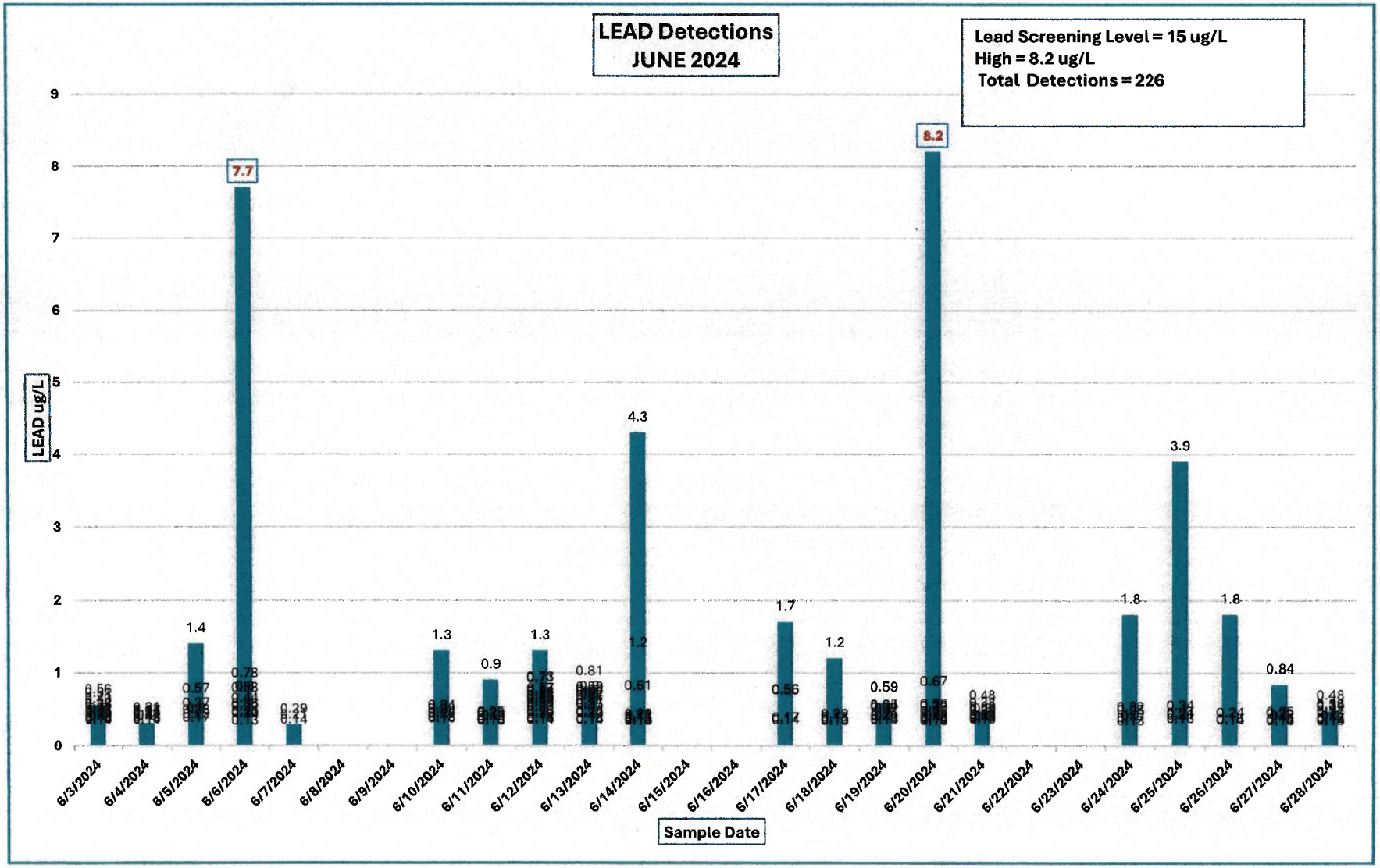
LEAD Sampling Protocol

- **A 1-liter first flush LEAD sample should be the first sample collected upon arrival at the property**, complying with all LCR sampling requirements:
  - 6-hour minimum stagnation,
  - No aerator removal,
  - Full flow, and
  - Wide mouth bottle.
    1. A first draw LEAD compliance sample should be the first sample collected at the home before any water is used.
    2. The second sample, before flushing, should be tested for **chlorine.**
- Additional flushed sample as currently described in the sample for EPA Method 200.8/245.1 Metals/Mercury and 200.7 Cations and Silica could also be analyzed for LEAD to measure the presence of LEAD in flushed water.
- While this second LEAD sample is not a compliance sample and cannot be used to determine the status of remediation, it does help to better identify the potential source of lead in the water.

Additional LEAD Sampling Guidelines

- Flushed samples should not be used as part of a Course of Action (COA) to indicate a contamination issue has been resolved.
- Only a repeat sample on a different day taken with the same procedure of the initial sample should be used to indicate the contamination is no longer present.
- **Only samples taken using compliance sampling procedures can be used to determine that a sample is in compliance with Safe Drinking Water Act (SDWA) requirements.**
- **COA remedial actions for any lead detection, but especially for detections greater than 10 ppb (the Lead and Copper Rule Improvements Action Level), should include a hydrant or source water sample, a household inspection for sources of lead in plumbing, and removal of all sources of lead in the household plumbing.**
- Sequential sampling techniques can be used to identify lead in plumbing if other techniques are not available.


Reported LEAD Results
May 2024
Detections by Date
Lead Screening Level = 15 ug/L
High = 11.5 ug/L
Total Detections = 259
LEAD ug/L
14.01
13.01
12.01
11.01
10.01
9.01
8.01
7.01
6.01
5.01
4.01
3.01
2.01
1.01
0.01
11.5
1.1
0.97
0.54
0.51
0.16
0.62
0.63
0.52
0.54
0.41
0.74
0.57
1.2
5/1/2024
5/2/2024
5/3/2024
5/4/2024
5/5/2024
5/6/2024
5/7/2024
5/8/2024
5/9/2024
5/10/2024
5/11/2024
5/12/2024
5/13/2024
5/14/2024
5/15/2024
5/16/2024
5/17/2024
5/18/2024
5/19/2024
5/20/2024
5/21/2024
5/22/2024
5/23/2024
5/24/2024
5/25/2024
5/26/2024
5/27/2024
5/28/2024
5/29/2024
5/30/2024
5/31/2024
Sample Date


LEAD Detections
JUNE 2024
Lead Screening Level = 15 ug/L
High = 8.2 ug/L
Total Detections = 226
LEAD ug/L
Sample Date
9
8
7
6
5
4
3
2
1
0
7.7
8.2
4.3
3.9
1.8
1.8
1.7
1.4
1.3
1.3
1.2
1.2
0.9
0.84
0.81
0.67
0.61
0.59
0.57
0.56
6/3/2024
6/4/2024
6/5/2024
6/6/2024
6/7/2024
6/8/2024
6/9/2024
6/10/2024
6/11/2024
6/12/2024
6/13/2024
6/14/2024
6/15/2024
6/16/2024
6/17/2024
6/18/2024
6/19/2024
6/20/2024
6/21/2024
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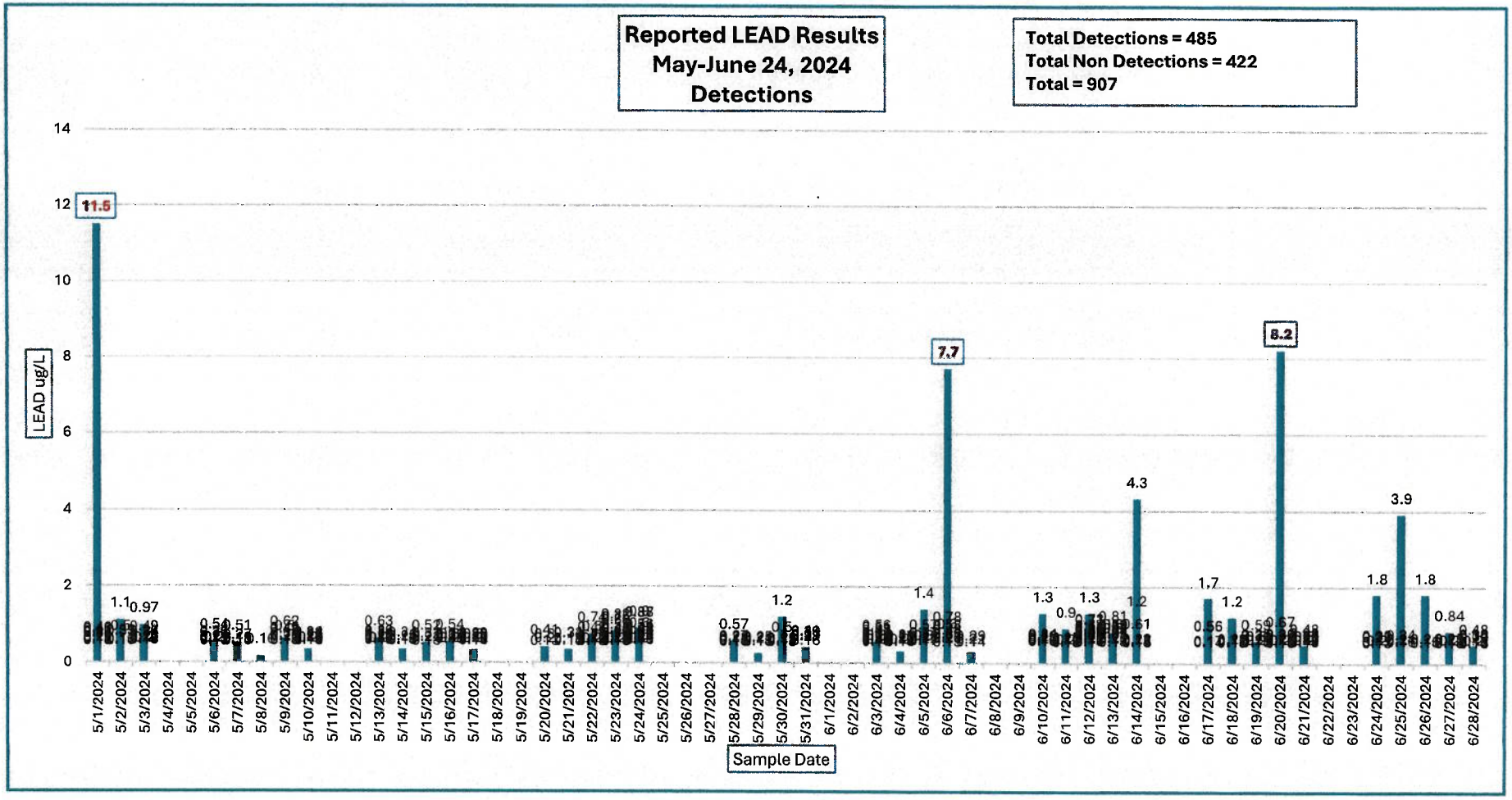
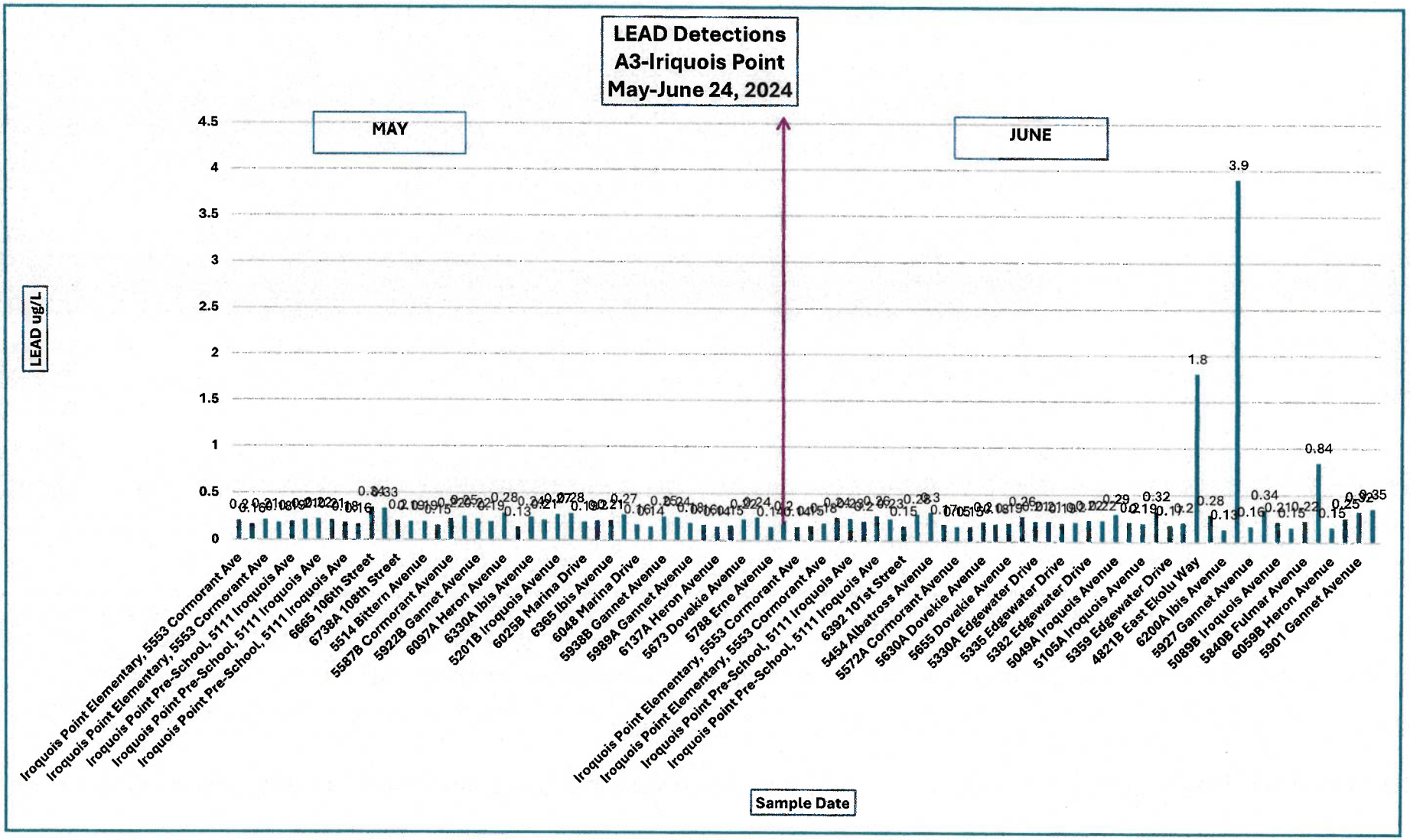
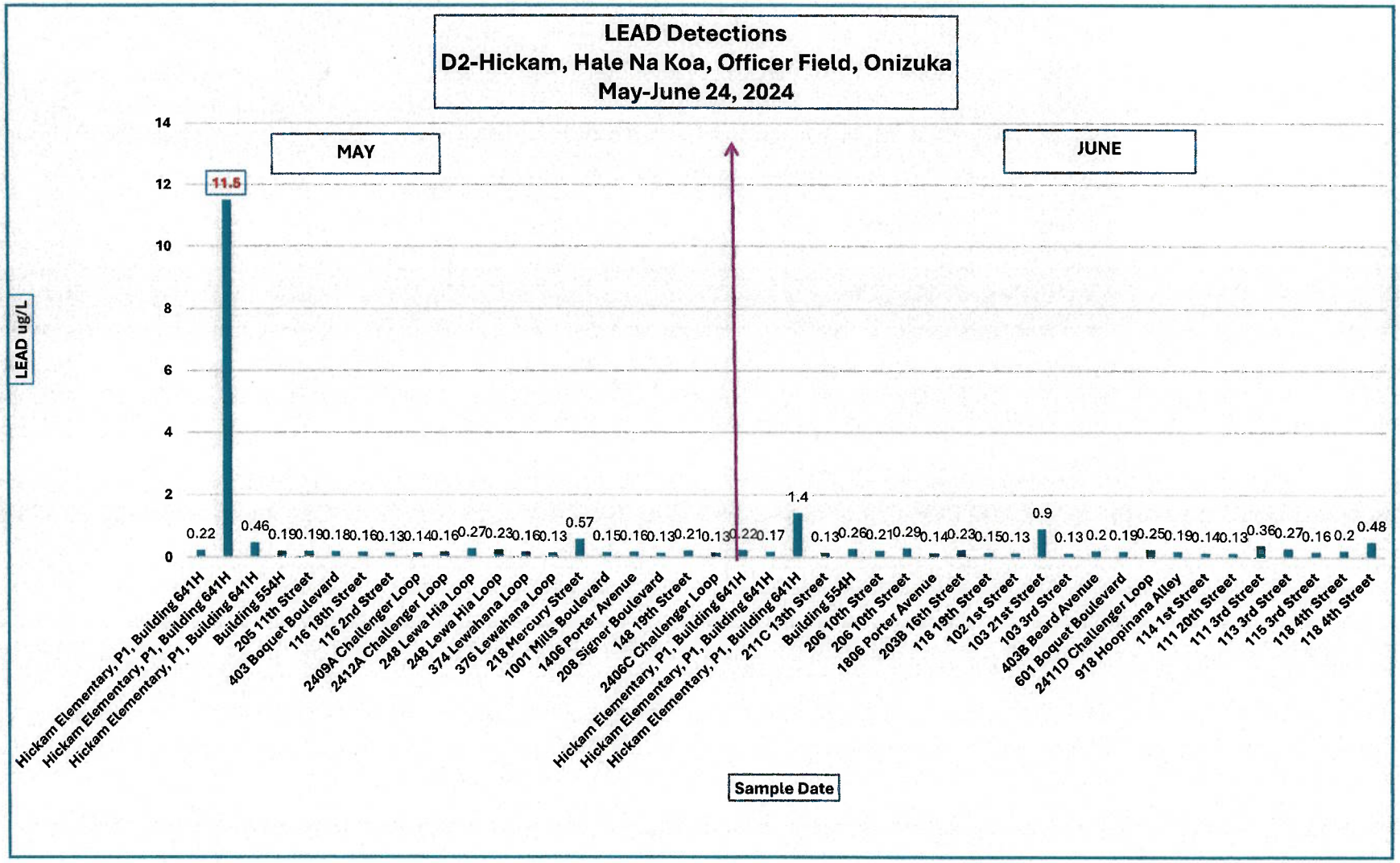
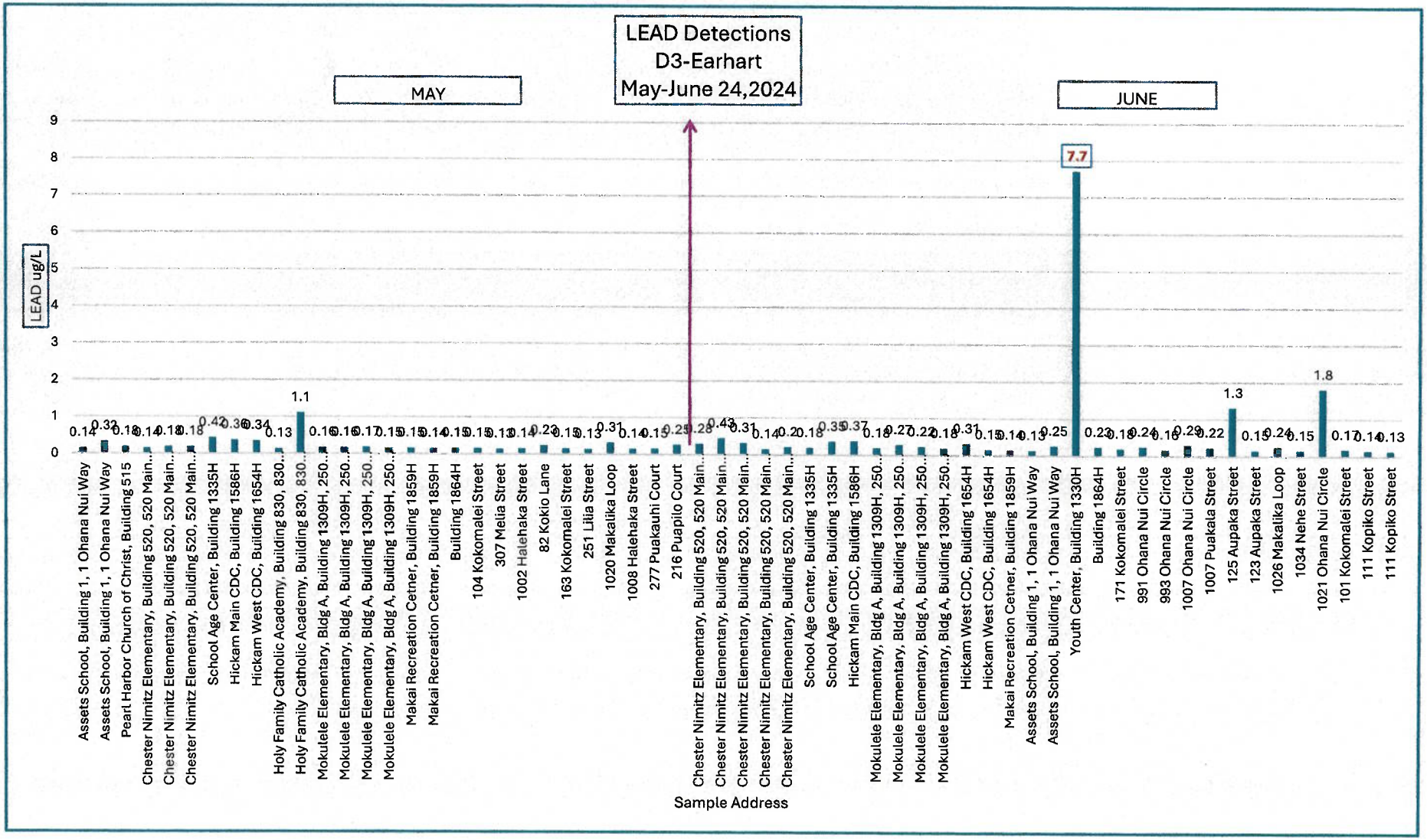
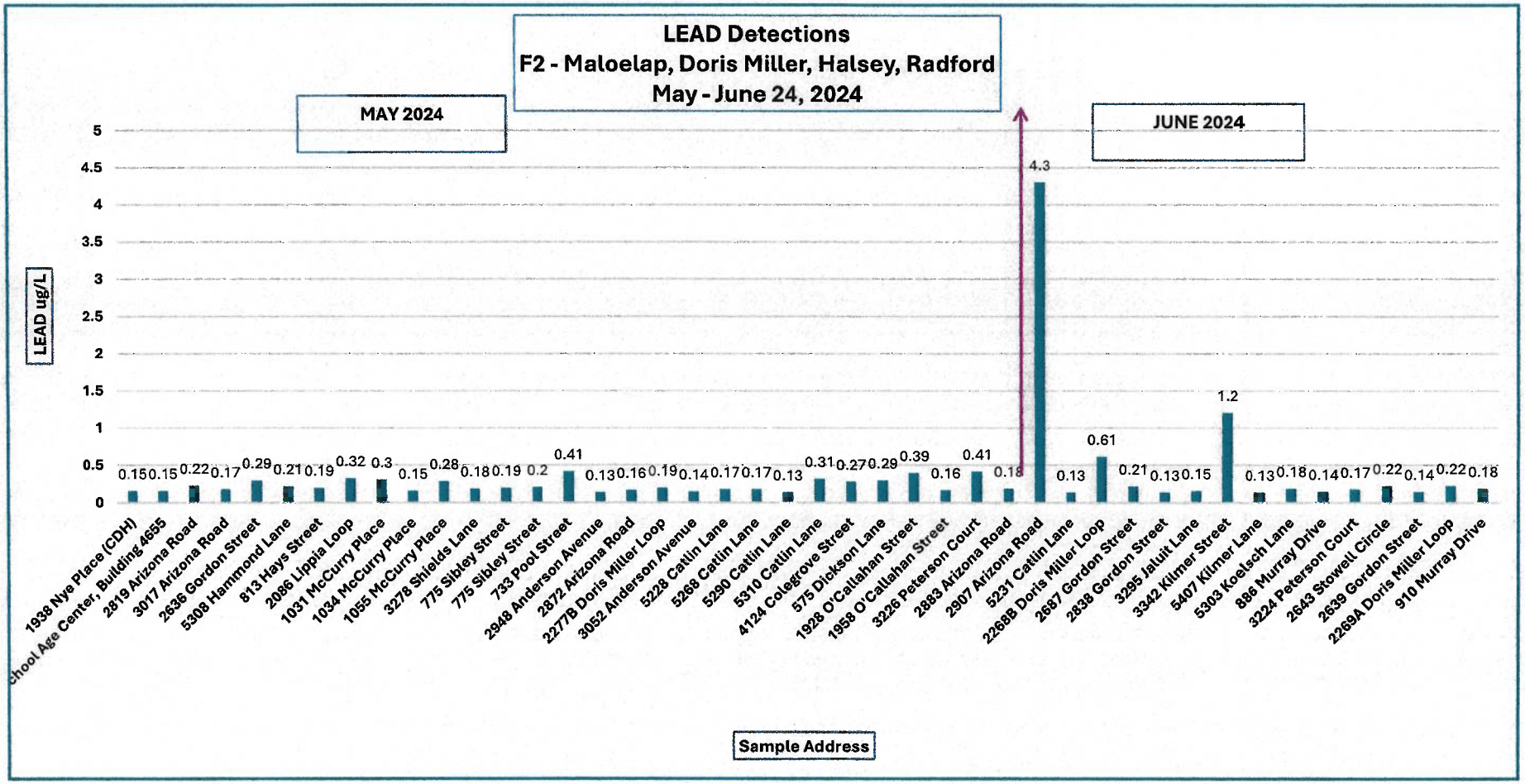
6/26/2024
6/27/2024
6/28/2024

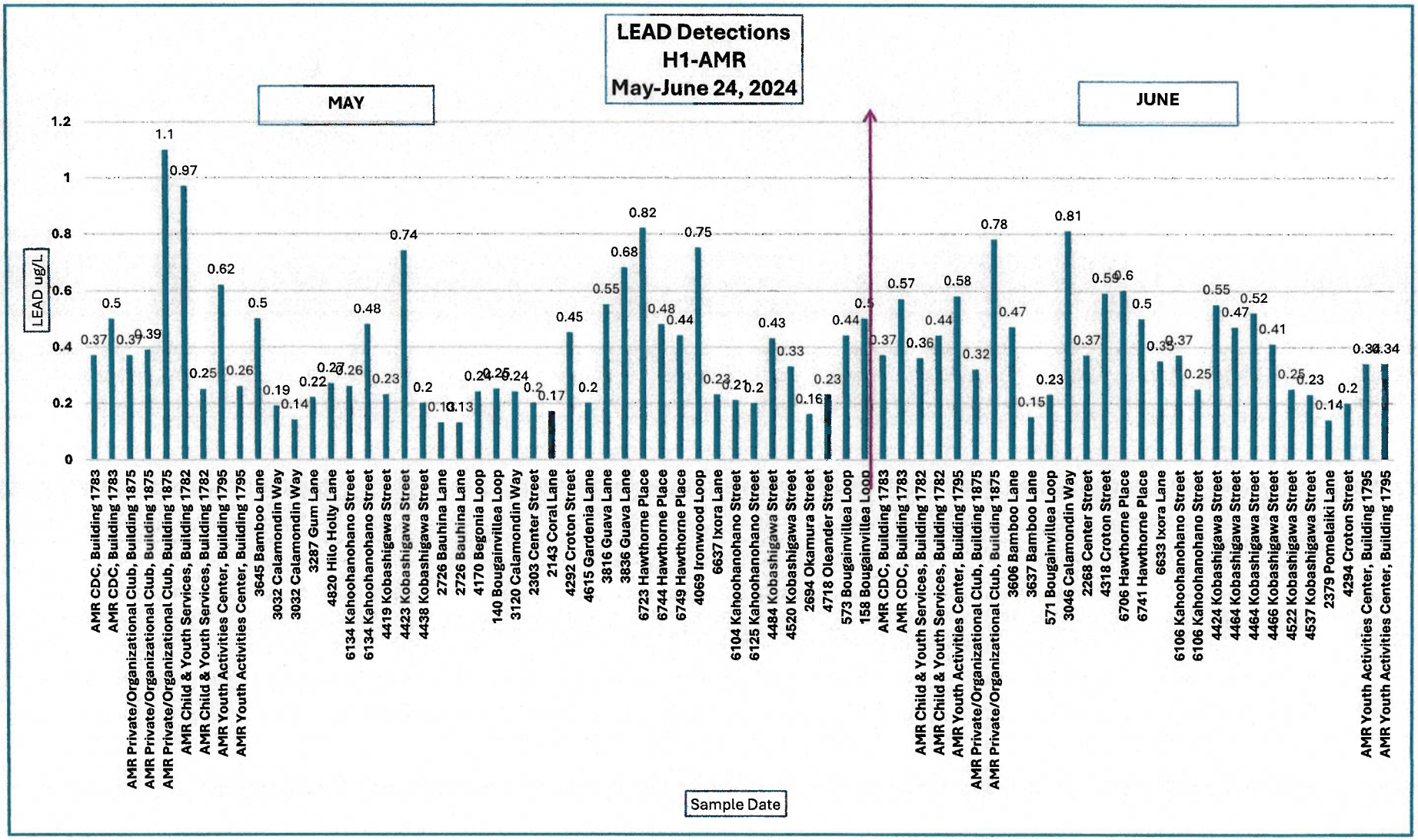

Reported LEAD Results
May-June 24, 2024
Detections
Total Detections = 485
Total Non Detections = 422
Total = 907
LEAD ug/L
Sample Date
11.5
7.7
8.2
4.3
3.9
1.8
1.8
1.7
1.4
1.3
1.3
1.2
1.2
1.2
1.1
0.97
0.84
0.57
14
12
10
8
6
4
2
0

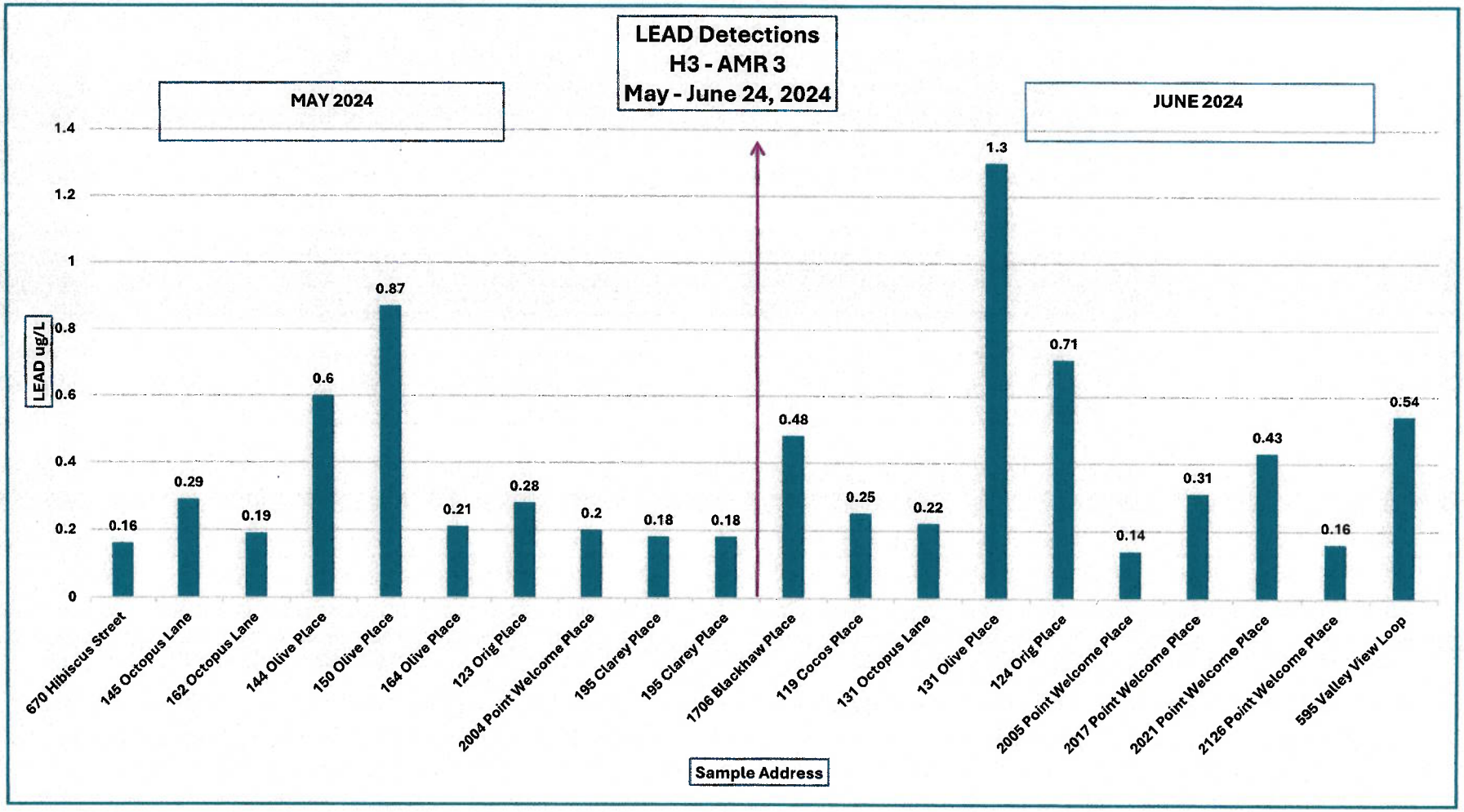

LEAD Detections
A3-Iriquois Point
May-June 24, 2024
MAY
JUNE
LEAD ug/L
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3.9
1.8
0.84
Iroquois Point Elementary, 5553 Cormorant Ave
Iroquois Point Elementary, 5553 Cormorant Ave
Iroquois Point Pre-School, 5111 Iroquois Ave
Iroquois Point Pre-School, 5111 Iroquois Ave
Iroquois Point Pre-School, 5111 Iroquois Ave
6665 106th Street
6738A 108th Street
5514 Bittern Avenue
5587B Cormorant Avenue
5922B Gannet Avenue
6097A Heron Avenue
6330A Ibis Avenue
5201B Iroquois Avenue
6025B Marina Drive
6365 Ibis Avenue
6048 Marina Drive
5938B Gannet Avenue
5989A Gannet Avenue
6137A Heron Avenue
5673 Dovekie Avenue
5788 Erne Avenue
Iroquois Point Elementary, 5553 Cormorant Ave
Iroquois Point Elementary, 5553 Cormorant Ave
Iroquois Point Pre-School, 5111 Iroquois Ave
Iroquois Point Pre-School, 5111 Iroquois Ave
6392 101st Street
5454 Albatross Avenue
5572A Cormorant Avenue
5630A Dovekie Avenue
5655 Dovekie Avenue
5330A Edgewater Drive
5335 Edgewater Drive
5382 Edgewater Drive
5049A Iroquois Avenue
5105A Iroquois Avenue
5359 Edgewater Drive
4821B East Ekolu Way
6200A Ibis Avenue
5927 Gannet Avenue
5085B Iroquois Avenue
5840B Fulmar Avenue
6059B Heron Avenue
5901 Gannet Avenue
Sample Date


LEAD Detections
D2-Hickam, Hale Na Koa, Officer Field, Onizuka
May-June 24, 2024
MAY
JUNE
LEAD ug/L
Sample Date
14
12
10
8
6
4
2
0
11.5
1.4
0.9
0.57
0.46
0.48
0.36
0.29
0.27
0.26
0.25
0.23
0.22
0.21
0.2
0.19
0.18
0.17
0.16
0.15
0.14
0.13
Hickam Elementary, P1, Building 641H
Hickam Elementary, P1, Building 641H
Hickam Elementary, P1, Building 641H
Building 554H
205 11th Street
403 Boquet Boulevard
116 18th Street
116 2nd Street
2409A Challenger Loop
2412A Challenger Loop
248 Lewa Hia Loop
248 Lewa Hia Loop
374 Lewahana Loop
376 Lewahana Loop
218 Mercury Street
1001 Mills Boulevard
1406 Porter Avenue
208 Signer Boulevard
148 19th Street
2406C Challenger Loop
Hickam Elementary, P1, Building 641H
Hickam Elementary, P1, Building 641H
Hickam Elementary, P1, Building 641H
211C 13th Street
Building 554H
206 10th Street
206 10th Street
1806 Porter Avenue
203B 16th Street
118 19th Street
102 1st Street
103 21st Street
103 3rd Street
403B Beard Avenue
601 Boquet Boulevard
2411D Challenger Loop
918 Hoopinana Alley
114 1st Street
111 20th Street
111 3rd Street
113 3rd Street
115 3rd Street
118 4th Street
118 4th Street


LEAD Detections
D3-Earhart
May-June 24,2024
MAY
JUNE
LEAD ug/L
Sample Address
Assets School, Building 1, 1 Ohana Nui Way
Assets School, Building 1, 1 Ohana Nui Way
Pearl Harbor Church of Christ, Building 515
Chester Nimitz Elementary, Building 520, 520 Main...
Chester Nimitz Elementary, Building 520, 520 Main...
Chester Nimitz Elementary, Building 520, 520 Main...
School Age Center, Building 1335H
Hickam Main CDC, Building 1586H
Hickam West CDC, Building 1654H
Holy Family Catholic Academy, Building 830, 830...
Holy Family Catholic Academy, Building 830, 830...
Mokulele Elementary, Bldg A, Building 1309H, 250...
Mokulele Elementary, Bldg A, Building 1309H, 250...
Mokulele Elementary, Bldg A, Building 1309H, 250...
Mokulele Elementary, Bldg A, Building 1309H, 250...
Makai Recreation Cetner, Building 1859H
Makai Recreation Cetner, Building 1859H
Building 1864H
104 Kokomalei Street
307 Melia Street
1002 Halehaka Street
82 Kokio Lane
163 Kokomalei Street
251 Lilia Street
1020 Makalika Loop
1008 Halehaka Street
277 Puakauhi Court
216 Puapilo Court
Chester Nimitz Elementary, Building 520, 520 Main...
Chester Nimitz Elementary, Building 520, 520 Main...
Chester Nimitz Elementary, Building 520, 520 Main...
Chester Nimitz Elementary, Building 520, 520 Main...
Chester Nimitz Elementary, Building 520, 520 Main...
School Age Center, Building 1335H
School Age Center, Building 1335H
Hickam Main CDC, Building 1586H
Mokulele Elementary, Bldg A, Building 1309H, 250...
Mokulele Elementary, Bldg A, Building 1309H, 250...
Mokulele Elementary, Bldg A, Building 1309H, 250...
Mokulele Elementary, Bldg A, Building 1309H, 250...
Hickam West CDC, Building 1654H
Hickam West CDC, Building 1654H
Makai Recreation Cetner, Building 1859H
Assets School, Building 1, 1 Ohana Nui Way
Assets School, Building 1, 1 Ohana Nui Way
Youth Center, Building 1330H
Building 1864H
171 Kokomalei Street
991 Ohana Nui Circle
993 Ohana Nui Circle
1007 Ohana Nui Circle
1007 Puakala Street
125 Aupaka Street
123 Aupaka Street
1026 Makalika Loop
1034 Nehe Street
1021 Ohana Nui Circle
101 Kokomalei Street
111 Kopiko Street
111 Kopiko Street


LEAD Detections
F2 - Maloelap, Doris Miller, Halsey, Radford
May - June 24, 2024
MAY 2024
JUNE 2024
LEAD ug/L
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0.15 0.15 0.22 0.17 0.29 0.21 0.19 0.32 0.3 0.15 0.28 0.18 0.19 0.2 0.41 0.13 0.16 0.19 0.14 0.17 0.17 0.13 0.31 0.27 0.29 0.39 0.16 0.41 0.18 4.3 0.13 0.61 0.21 0.13 0.15 1.2 0.13 0.18 0.14 0.17 0.22 0.14 0.22 0.18
1938 Nye Place (CDH)
School Age Center, Building 4655
2819 Arizona Road
3017 Arizona Road
2636 Gordon Street
5308 Hammond Lane
813 Hays Street
2086 Lippia Loop
1031 McCurry Place
1034 McCurry Place
1055 McCurry Place
3278 Shields Lane
775 Sibley Street
775 Sibley Street
733 Pool Street
2948 Anderson Avenue
2872 Arizona Road
2277B Doris Miller Loop
3052 Anderson Avenue
5228 Catlin Lane
5268 Catlin Lane
5290 Catlin Lane
5310 Catlin Lane
4124 Colegrove Street
575 Dickson Lane
1928 O'Callahan Street
1958 O'Callahan Street
3226 Peterson Court
2883 Arizona Road
2907 Arizona Road
5231 Catlin Lane
2268B Doris Miller Loop
2687 Gordon Street
2838 Gordon Street
3295 Jaluit Lane
3342 Kilmer Street
5407 Kilmer Lane
5303 Koelsch Lane
886 Murray Drive
3224 Peterson Court
2643 Stowell Circle
2639 Gordon Street
2269A Doris Miller Loop
910 Murray Drive
Sample Address


LEAD Detections
H1-AMR
May-June 24, 2024
MAY
JUNE
LEAD ug/L
Sample Date
AMR CDC, Building 1783
AMR CDC, Building 1783
AMR Private/Organizational Club, Building 1875
AMR Private/Organizational Club, Building 1875
AMR Private/Organizational Club, Building 1875
AMR Child & Youth Services, Building 1782
AMR Child & Youth Services, Building 1782
AMR Youth Activities Center, Building 1795
AMR Youth Activities Center, Building 1795
3645 Bamboo Lane
3032 Calamondin Way
3032 Calamondin Way
3287 Gum Lane
4820 Hilo Holly Lane
6134 Kahoohanohano Street
6134 Kahoohanohano Street
4419 Kobashigawa Street
4423 Kobashigawa Street
4438 Kobashigawa Street
2726 Bauhina Lane
2726 Bauhina Lane
4170 Begonia Loop
140 Bougainvillea Loop
3120 Calamondin Way
2303 Center Street
2143 Coral Lane
4292 Croton Street
4615 Gardenia Lane
3816 Guava Lane
3836 Guava Lane
6723 Hawthorne Place
6744 Hawthorne Place
6749 Hawthorne Place
4069 Ironwood Loop
6637 Ixora Lane
6104 Kahoohanohano Street
6125 Kahoohanohano Street
4484 Kobashigawa Street
4520 Kobashigawa Street
2694 Okamura Street
4718 Oleander Street
573 Bougainvillea Loop
158 Bougainvillea Loop
AMR CDC, Building 1783
AMR CDC, Building 1783
AMR Child & Youth Services, Building 1782
AMR Child & Youth Services, Building 1782
AMR Youth Activities Center, Building 1795
AMR Private/Organizational Club, Building 1875
AMR Private/Organizational Club, Building 1875
3606 Bamboo Lane
3637 Bamboo Lane
571 Bougainvillea Loop
3046 Calamondin Way
2268 Center Street
4318 Croton Street
6706 Hawthorne Place
6741 Hawthorne Place
6633 Ixora Lane
6106 Kahoohanohano Street
6106 Kahoohanohano Street
4424 Kobashigawa Street
4464 Kobashigawa Street
4464 Kobashigawa Street
4466 Kobashigawa Street
4522 Kobashigawa Street
4537 Kobashigawa Street
2379 Pomelaiki Lane
4294 Croton Street
AMR Youth Activities Center, Building 1795
AMR Youth Activities Center, Building 1795

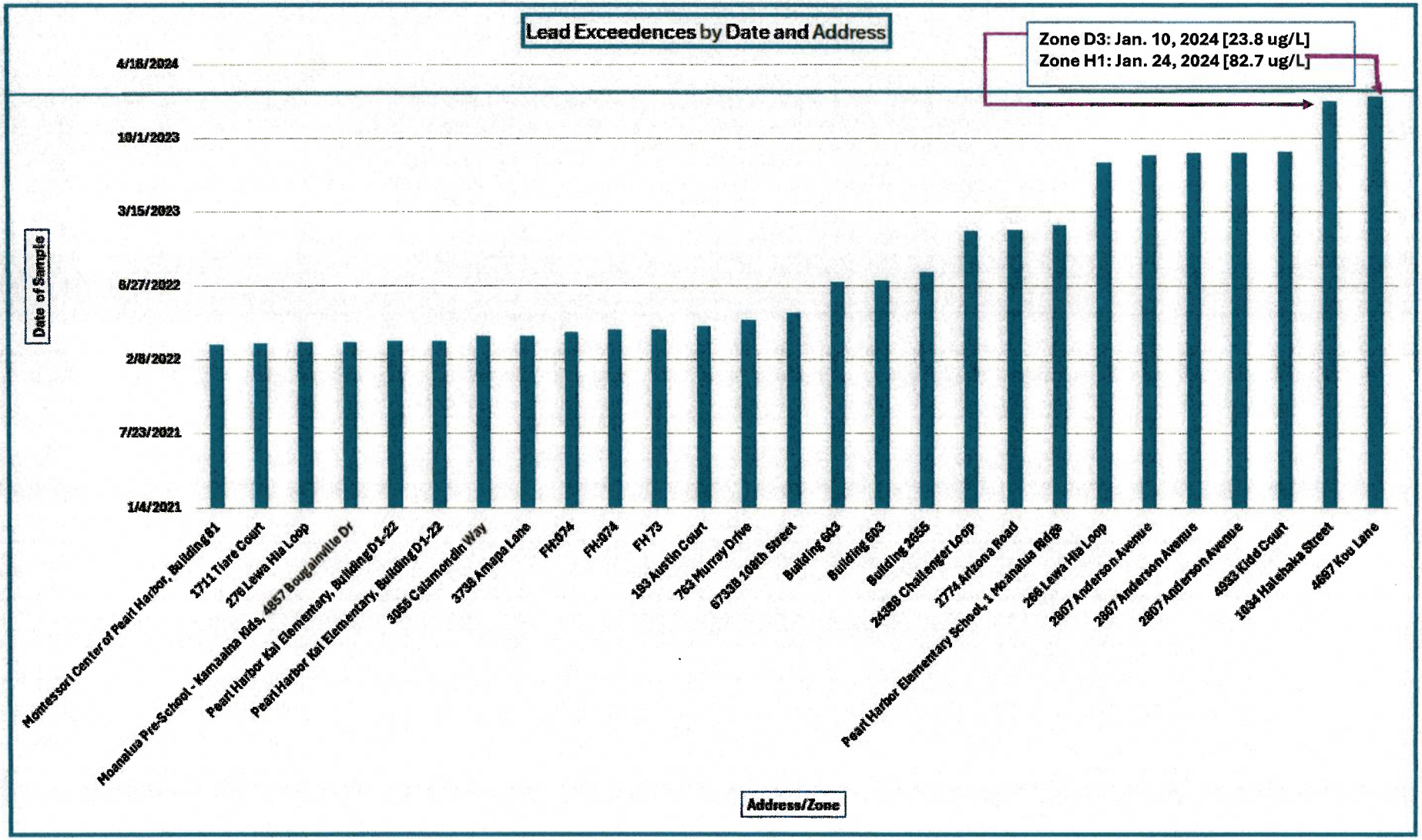

LEAD Detections
H3 - AMR 3
May - June 24, 2024
MAY 2024
JUNE 2024
LEAD ug/L
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.16
0.29
0.19
0.6
0.87
0.21
0.28
0.2
0.18
0.18
0.48
0.25
0.22
1.3
0.71
0.14
0.31
0.43
0.16
0.54
670 Hibiscus Street
145 Octopus Lane
162 Octopus Lane
144 Olive Place
150 Olive Place
164 Olive Place
123 Orig Place
2004 Point Welcome Place
195 Clarey Place
195 Clarey Place
1706 Blackhaw Place
119 Cocos Place
131 Octopus Lane
131 Olive Place
124 Orig Place
2005 Point Welcome Place
2017 Point Welcome Place
2021 Point Welcome Place
2126 Point Welcome Place
595 Valley View Loop
Sample Address

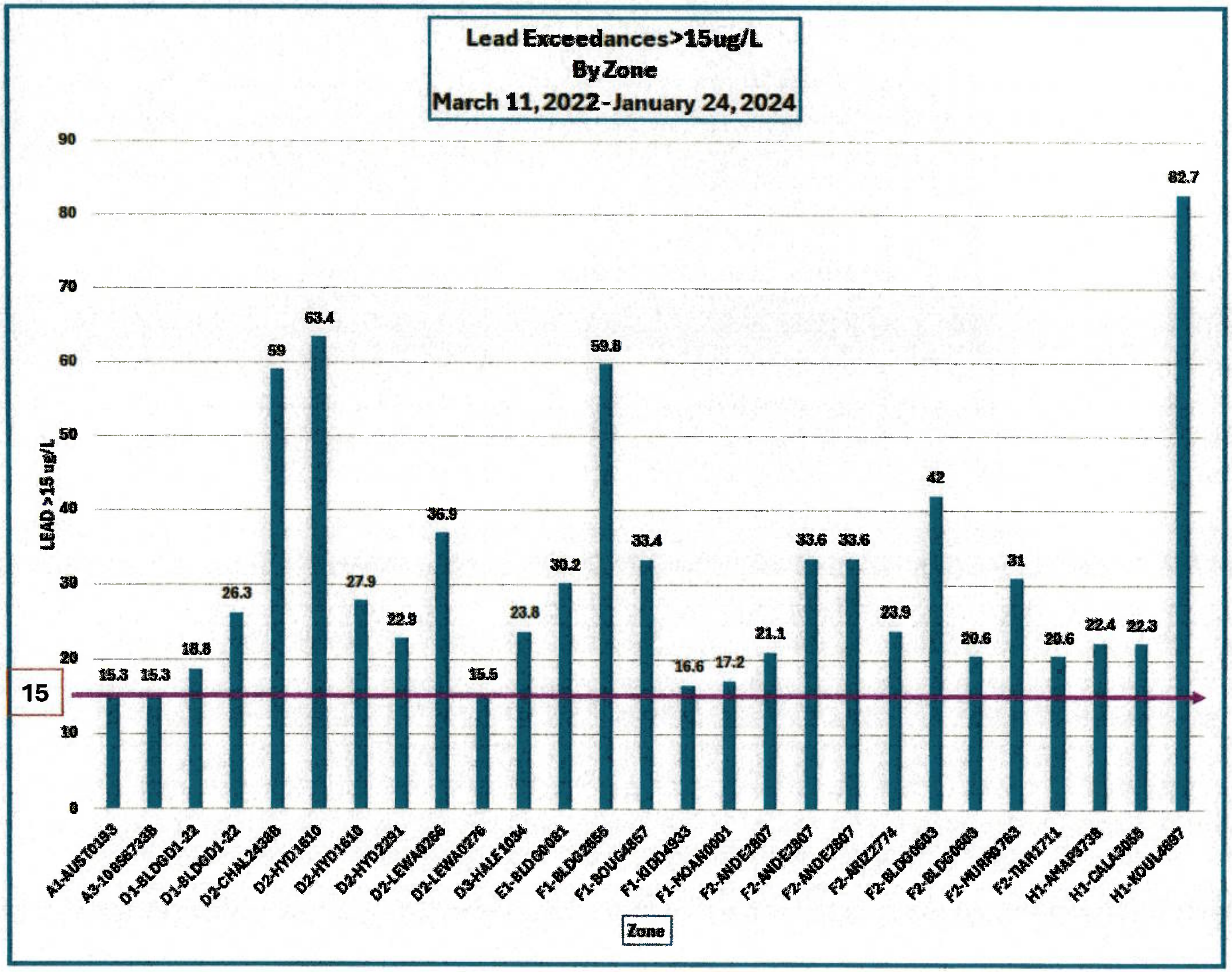
LEAD EXCEEDANCES
MARCH 11, 2022 – JANUARY 24,2024

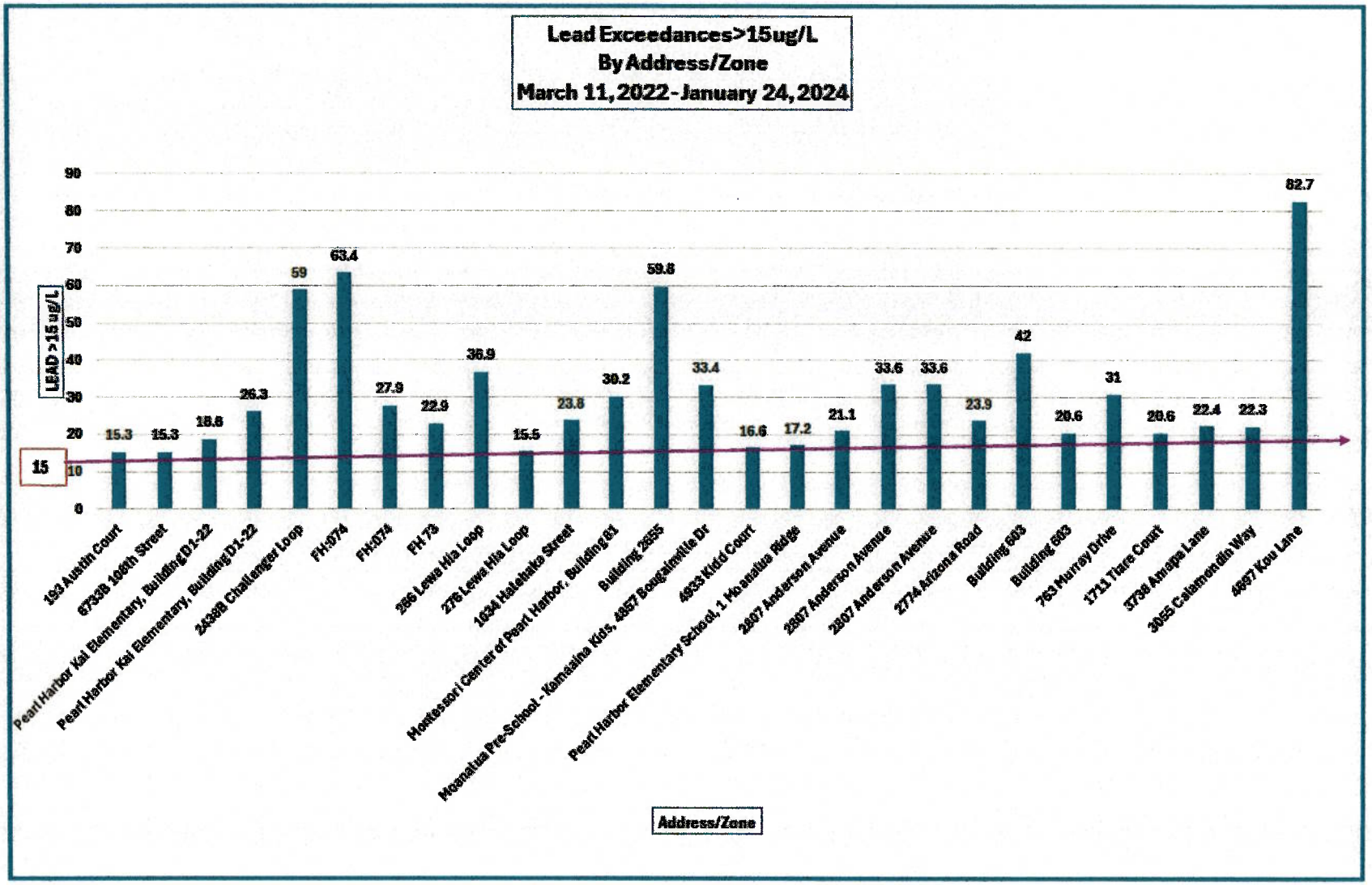
Susan A. Pcola-Davis

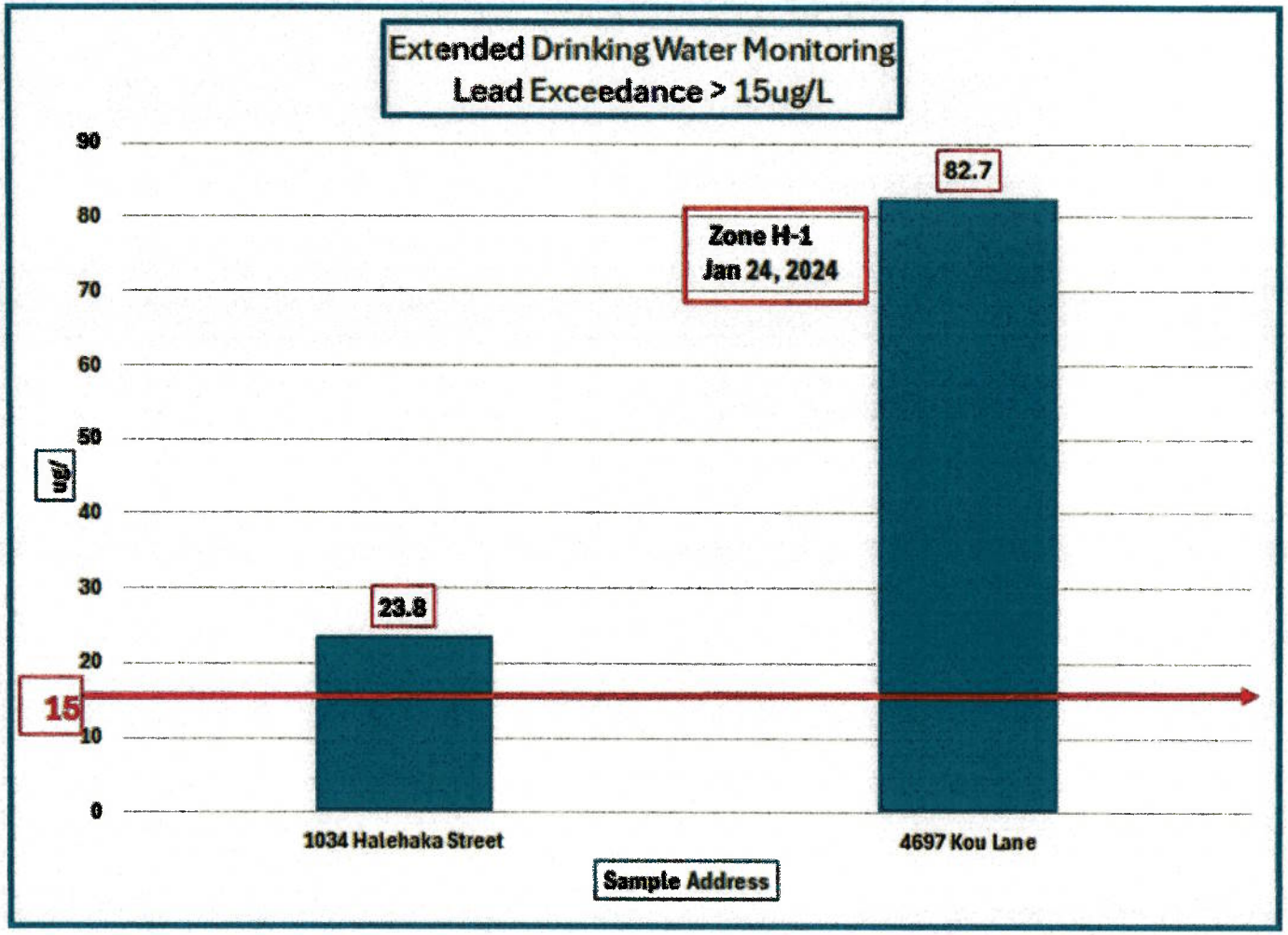
Long Term Monitoring

Extended Drinking Water Monitoring (last slide)


Lead Exceedences by Date and Address
Zone D3: Jan. 10, 2024 [23.8 ug/L]
Zone H1: Jan. 24, 2024 [82.7 ug/L]
4/18/2024
10/1/2023
3/15/2023
8/27/2022
2/8/2022
7/23/2021
1/4/2021
Date of Sample
Montessori Center of Pearl Harbor, Building 61
1711 Tiare Court
278 Lewa Hia Loop
Moanalua Pre-School - Kamaaina Kids, 4857 Bougainvillia Dr
Pearl Harbor Kai Elementary, Building D1-22
Pearl Harbor Kai Elementary, Building D1-22
3055 Calamondin Way
3738 Amapa Lane
FH-074
FH-074
FH 73
183 Austin Court
763 Murray Drive
67338 108th Street
Building 603
Building 603
Building 2655
24388 Challenger Loop
2774 Arizona Road
Pearl Harbor Elementary School, 1 Moanalua Ridge
266 Lewa Hia Loop
2807 Anderson Avenue
2807 Anderson Avenue
2807 Anderson Avenue
4933 Kidd Court
1034 Haleiaka Street
4857 Kou Lane
Address/Zone


Lead Exceedances>15ug/L
By Zone
March 11, 2022 - January 24, 2024
LEAD >15 ug/L
90
80
70
60
50
40
30
20
10
0
15
15.3
15.3
18.8
26.3
59
63.4
27.9
22.9
36.9
15.5
23.8
30.2
59.8
33.4
16.6
17.2
21.1
33.6
33.6
23.9
42
20.6
31
20.6
22.4
22.3
82.7
A1-AUST0193
A3-108S8733B
D1-BLDGD1-22
D1-BLDGD1-22
D2-CHAL2436B
D2-HYD1610
D2-HYD1610
D2-HYD2291
D2-LEWA0266
D2-LEWA0278
D3-HALE1034
E1-BLDG0081
F1-BLDG2855
F1-BOUG4857
F1-KIDD4933
F1-MOAN0001
F2-ANDE2807
F2-ANDE2807
F2-ANDE2807
F2-ARIZ2774
F2-BLDG0603
F2-BLDG0603
F2-MURR0763
F2-TIAR1711
H1-AMAP3738
H1-CALA3058
H1-KOUL4697
Zone

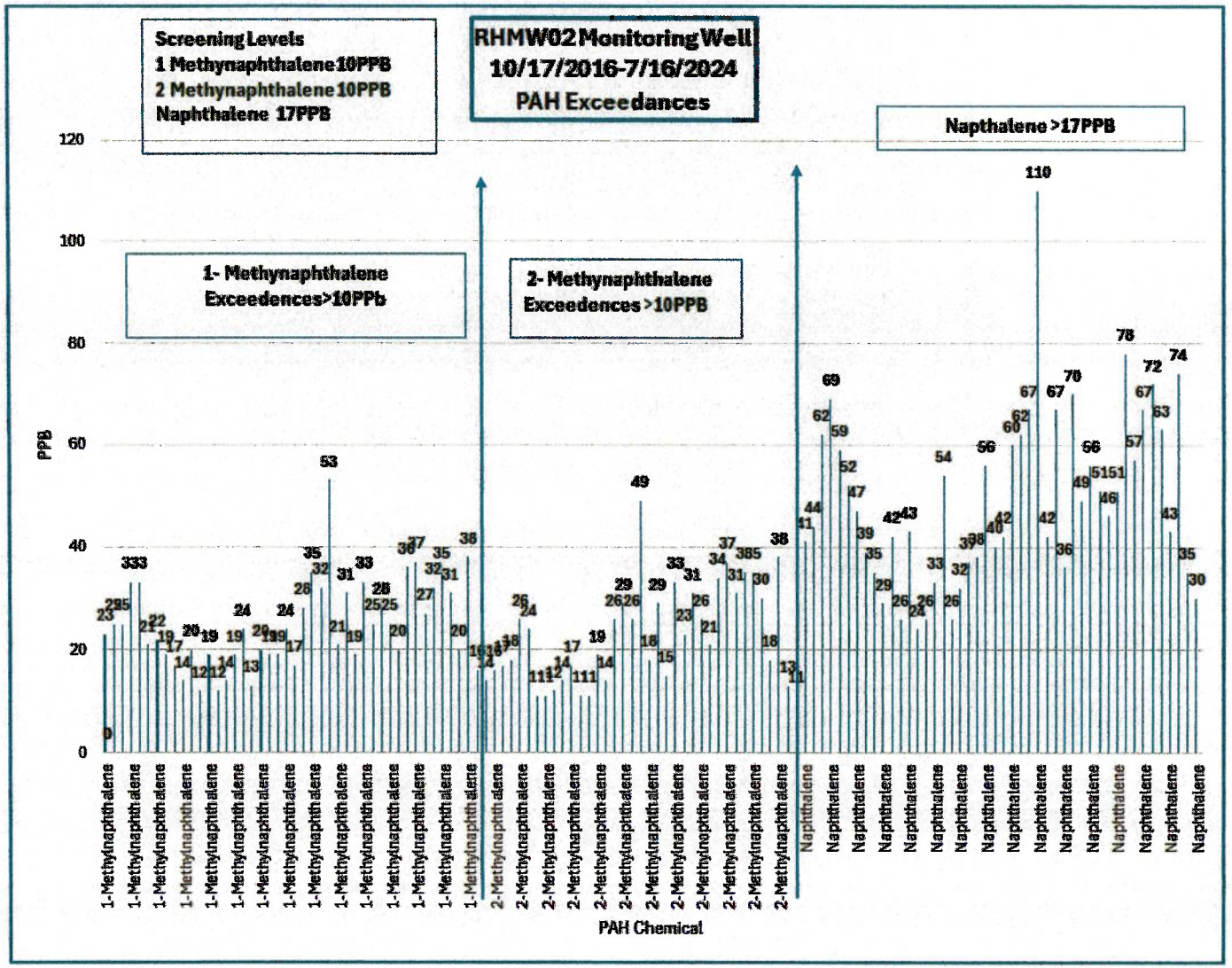

Lead Exceedances>15ug/L
By Address/Zone
March 11, 2022 - January 24, 2024
LEAD >15 ug/L
Address/Zone
15
90
80
70
60
50
40
30
20
10
0
15.3
15.3
18.8
26.3
59
63.4
27.9
22.9
36.9
15.5
23.8
30.2
59.8
33.4
16.6
17.2
21.1
33.6
33.6
23.9
42
20.6
31
20.6
22.4
22.3
82.7
153 Austin Court
67328 166th Street
Pearl Harbor Kai Elementary, Building D1-22
Pearl Harbor Kai Elementary, Building D1-22
2439B Challenger Loop
FH:074
FH:074
FH:73
286 Lewa Hia Loop
276 Lewa Hia Loop
1634 Halehaka Street
Montessori Center of Pearl Harbor, Building 61
Building 2655
Moanalua Pre-School - Kamaaina Kids, 4857 Bougainvillia Dr
4933 Kidd Court
Pearl Harbor Elementary School, 1 Moanalua Ridge
2807 Anderson Avenue
2807 Anderson Avenue
2807 Anderson Avenue
2774 Arizona Road
Building 603
Building 603
763 Murray Drive
1711 Tiare Court
3738 Amapa Lane
3055 Calamondin Way
4897 Kou Lane

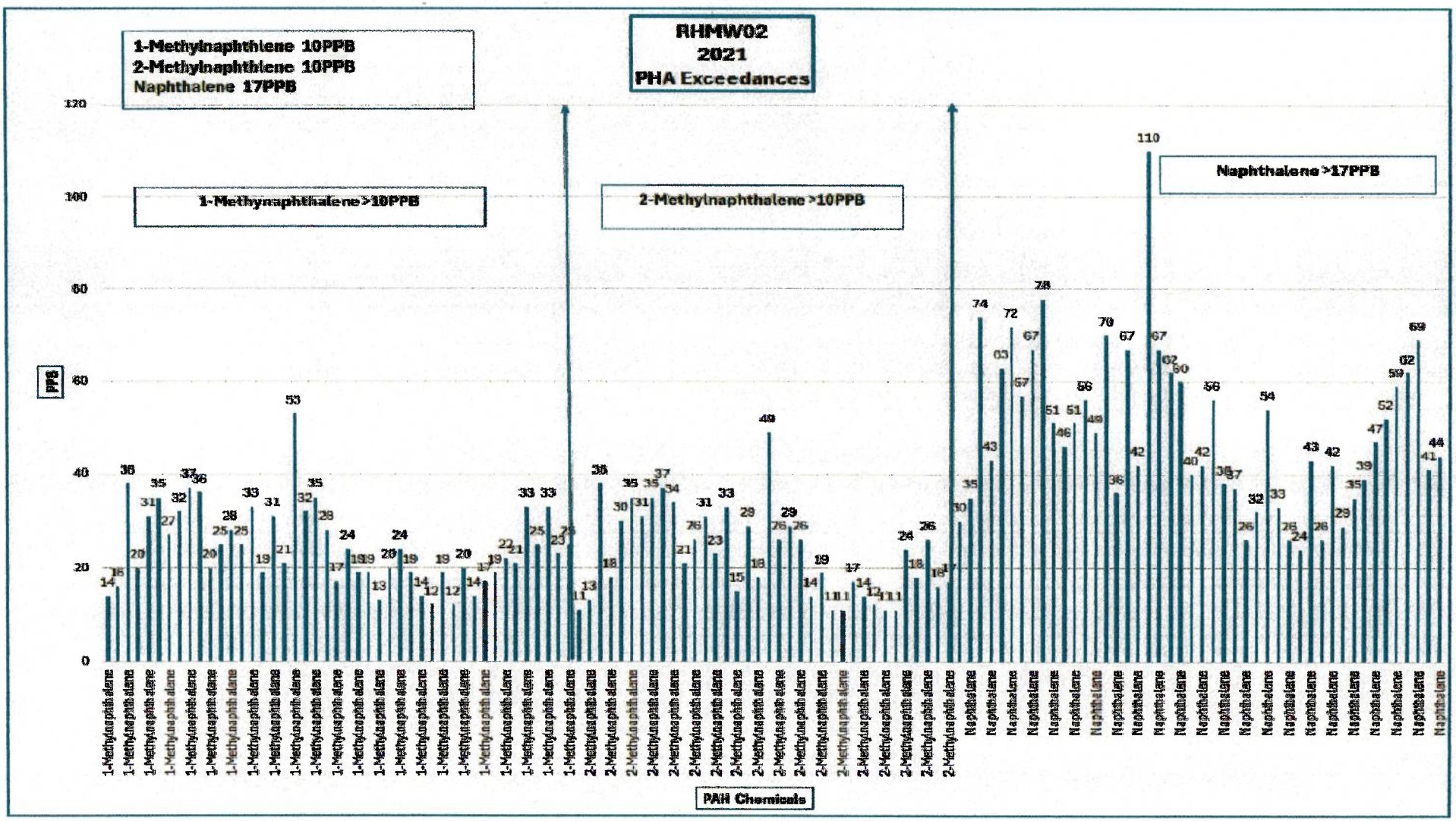

Extended Drinking Water Monitoring
Lead Exceedance > 15ug/L
90
80
70
60
50
40
30
20
15
10
0
ug/
82.7
Zone H-1
Jan 24, 2024
23.8
1034 Halehaka Street
4697 Kou Lane
Sample Address

RESEARCHING PAHs in MONITORING WELL RHMW02

October 17, 2016-July 16, 2024

Susan A. Pcola-Davis


Screening Levels
1 Methynaphthalene 10PPB
2 Methynaphthalene 10PPB
Naphthalene 17PPB
RHMW02 Monitoring Well
10/17/2016-7/16/2024
PAH Exceedances
Napthalene >17PPB
1- Methynaphthalene
Exceedences>10PPb
2- Methynaphthalene
Exceedences >10PPB
PPB
PAH Chemical
1-Methylnaphthalene
2-Methylnaphthalene
Naphthalene


RHMW02
2021
PHA Exceedances
1-Methylnaphthlene 10PPB
2-Methylnaphthlene 10PPB
Naphthalene 17PPB
1-Methylnaphthalene>10PPB
2-Methylnaphthalene>10PPB
Naphthalene>17PPB
PPB
PAH Chemicals

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/25/2024 5:07:15 PM
Meeting Date:	(select from list)
I wish to provide	Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

TESTIFIER INFORMATION

Full Name	Ilima DeCosta
Email	adecosta808@icloud.com
Phone (optional)	(808) 365-2611

TESTIMONY DETAILS

Agenda Item	(select from list)
Your Position on Matter	I wish to comment
Representing	Organization
I wish to provide	Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

Written Testimony (if entered on the online form; otherwise see attached)	To : Board of Water Supply From: Red Hill CRI Re: Statement of Recognition and Appreciation The Board of Water Supply is the only entity that is acting responsibly in the protection of people and the environment when it comes to our water sources. We thank the Board of Water Supply and their managers, Ernie and Erwin, and many others who act in our best interest and in the protection of the people and our environment. Decision-making for our benefit is much appreciated. Responsible and prudent actions for our protection is and has been the long history of their commitment to us. We are so thankful the decisions are not based on waiting for years of information and data that may be questionable at best. Our community appreciates the public engagement and community involvement by the management of the board of water supply. Ernie and Erwin are on first name basis with much of our community simply because of their willingness to share information to explain what they're doing and why. They are the shining example of public engagement and community involvement for the protection of the community. Our regulators and polluters refuse and are inept at public engagement and community involvement. It is unfortunate that we are exposed to pollutants and contaminants affecting our health and our future generations. We cannot continue to allow the polluters and regulators to expose us to hazardous substances and destroy our environment. Thank you for the water supply, Ernie and Erwin and all of the board of water supply community for protecting us and our water sources. Malama pono...Ola i ka wai

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/26/2024 11:37:38 AM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

TESTIFIER INFORMATION

Full Name	Lacey Quintero
Email	quintero.lacey@gmail.com
Phone (optional)	(361) 877-2365

TESTIMONY DETAILS

Agenda Item	INFO #1: Review of the Navy's Technical Memorandum of Elevated Total Petroleum Hydrocarbon (TPH) Levels in the Joint Base Pearl Harbor Hickam (JBPHH) Water System
Your Position on Matter	Support
Representing	Self
I wish to provide	Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

Written Testimony (if entered on the online form; otherwise see attached)	Good afternoon Board of Water Supply, My name is Lacey Quintero. I am here today as a member of the public who would like to express my broadest support of the BWS and all efforts that have been taken to help the public understand the scope of what is and what is not known about Red Hill and its continued environmental impacts to this island's water supply. As a member of the public, I thank you for bringing us this third-party review of the Navy's Technical Memorandum of Elevated Total Petroleum Hydrocarbon (TPH) levels in the JBPHH water system. Understanding this report is necessary so that we can understand broader implications on the overall water supply and help support any preventative actions that can be taken. My personal opinion is that the Navy's reports seem to be shrouded in technical terms with careful phrasing that results in the public questioning their own first-hand experiences. I often question how reports like this are meant to help the situation at hand, when they appear to completely miss the mark and at times fail to discover what the JBPHH-impacted community appears to collectively "know." After I was personally impacted by the November 2021 Red Hill catastrophe, I struggled as I tried to recover from the effects of my entire family being poisoned by our household water on base. One of the hallmarks of PTSD is a loss of trust. Over the past few years, I have watched several government agencies fail to regain that broken trust, which has added insult to injury for many of the November 2021 impacted community members. For this reason, I would like to commend the BWS for being a trustworthy source of information in this ongoing Red Hill disaster. I would like for you to all know how important it has been for our healing and recovery to know that there is at least one system looking out to protect the public and its water supply. I believe I can speak for many others when I say thank you for all of your hard work and efforts to bring this information to the public in a way that we can not only understand, but also, for bringing it in a manner that we can trust.

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/26/2024 3:41:41 PM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony + request to give remote oral testimony by Zoom videoconference

TESTIFIER INFORMATION

Full Name	Amanda Feindt
Email	amandafeindt@gmail.com
Phone (optional)	(757) 816-6073

TESTIMONY DETAILS

Agenda Item	INFO #1: Review of the Navy's Technical Memorandum of Elevated Total Petroleum Hydrocarbon (TPH) Levels in the Joint Base Pearl Harbor Hickam (JBPHH) Water System
Your Position on Matter	I wish to comment
Representing	Organization
I wish to provide	Written testimony + request to give remote oral testimony by Zoom videoconference

Written Testimony (if entered on the online form; otherwise see attached)	Ref in Action #1 + #2: 1. We need congressional support 2. We need request a congressional hearing 3. DOH a/o EPA must issue drinking water advisory if we do not have accurate date to assess what the contamination is and where it is coming from. 4. This requires SecDef Austin's attention - the SecNavy + SecArmy have proved unable to handle this situation 5. This requires EPA Admin Regan's attention- EPA Region 9 has proved unable to handle this situation 6. This requires POTUS attention- request the governor issue state of emergency to bring in third party/NGO support for immediate attention on this water system and aquifer 7. 8,000 useless samples is fraud, waste, and abuse and has done impacted families and the people living on this island a total disservice. The DOH and EPA has enabled the Navy to operate this way for far too long. This is a matter of public health and safety and should be handled with extreme caution and by third party moving forward

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

From: Patti Choy <halamango@gmail.com>
Sent: Sunday, August 25, 2024 8:43 PM
To: Board of Water Supply Board of Directors <board@hbws.org>
Subject: Testimony for August 25, 2024 Board Meeting: Mahalo to the Board of Water Supply

To Ernie Lau and the Board of Water Supply Team,

A heartfelt thank you to each and everyone of you who are pouring your heart and soul into the extraordinary work of protecting our water. As you continue to confront the Navy's disastrous behavior and deal with the unacceptable lack of responsiveness from the Navy's protectors, the DOH and the EPA, we, the community, stand behind you because we know your agency is the only government entity taking on the Red Hill crisis with a clear and non-political agenda. If it was not for your steadfast and genuine pure work, by now we would all be forced to drink water contaminated by the US military.

Ola i ka wai!

Aloha,

Patti Choy
2129 Alaeloa Place
Honolulu, HI 96821
(917) 575-4103
halamango@gmail.com

Shut Down Red Hill
Not Pau Yet!

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/26/2024 1:24:53 PM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony

TESTIFIER INFORMATION

Full Name	Breanne Fong
Email	bfong4@hawaii.edu
Phone (optional)	(808) 294-1447

TESTIMONY DETAILS

Agenda Item	INFO #1: Review of the Navy's Technical Memorandum of Elevated Total Petroleum Hydrocarbon (TPH) Levels in the Joint Base Pearl Harbor Hickam (JBPHH) Water System
Your Position on Matter	(select from list)
Representing	Self
I wish to provide	Written testimony

Written Testimony (if entered on the online form; otherwise see attached)	Aloha, My name is Breanne Fong, and I am from Kaimukī and Maunalua on the island of O'ahu. As wai is necessary for life and an integral part of Hawaiian culture and health, it is crucial that we ensure clean and potable water is accessible. I want to mahalo BWS for exercising great care when making decisions about our water, and I ask BWS to continue pressuring the Navy to do weekly ground water testing, as lead and PAH's have been detected in our groundwater. We need to have a better comprehension of how groundwater flows in the aquifer and how past fuel releases can be cleaned up. Thus, every Navy monitoring well and water source needs to be tested weekly for all PAH's using EPA method 525.2 and 625. The well-being of our 'āina and our community are dependent on these measures, so we must prevent further contamination and take action to protect our wai. Mahalo, Breanne Fong

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

APPROVAL OF MINUTES

Approval of the Minutes of the Regular Meeting Held on July 22, 2024.

MOTION TO APPROVE

Lance Wilhelm and Jonathan Kaneshiro motioned and seconded, respectively, to approve the Minutes of the Regular Meeting Held on July 22, 2024.

Ms. Cruz-Achiu conducted a roll call vote: Vice Chair Jonathan Kaneshiro, aye; Board Member Bryan Andaya, abstain; Board Member Kapua Sproat, abstain; Board Member Lance Wilhelm, aye; Board Member Gene Albano, aye; and Chair Nā'ālehu Anthony, aye. Board Member Edwin Sniffen was absent

Ms. Cruz-Achiu announced that the motion passed with four ayes and two abstentions.

THE MINUTES OF THE REGULAR MEETING HELD ON JULY 22, 2024, WERE APPROVED AT THE AUGUST 26, 2024, BOARD MEETING			
	AYE	NO	COMMENT
NĀ'ĀLEHU ANTHONY	X		
JONATHAN KANESHIRO	X		
BRYAN P. ANDAYA			ABSTAIN
KAPUA SPROAT			ABSTAIN
LANCE WILHELM	X		
EDWIN H. SNIFFEN			ABSENT
GENE C. ALBANO	X		

At 4:08 PM, Chair Anthony called the meeting to recessed.

At 4:16 PM, Chair Anthony called the meeting back to order.

ITEM FOR INFORMATION NO. 2

"August 26, 2024

FINANCIAL UPDATE FOR THE QUARTER ENDED JUNE 30, 2024

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawai'i 96843

Chair and Members:

Subject: Polycyclic Aromatic Hydrocarbon (PAH) Detection at the Board of Water Supply (BWS) Aiea Wells

Erwin Kawata, Deputy Manager, will discuss the detection of polycyclic aromatic hydrocarbons (PAH) at BWS Aiea Wells.

Respectfully Submitted,

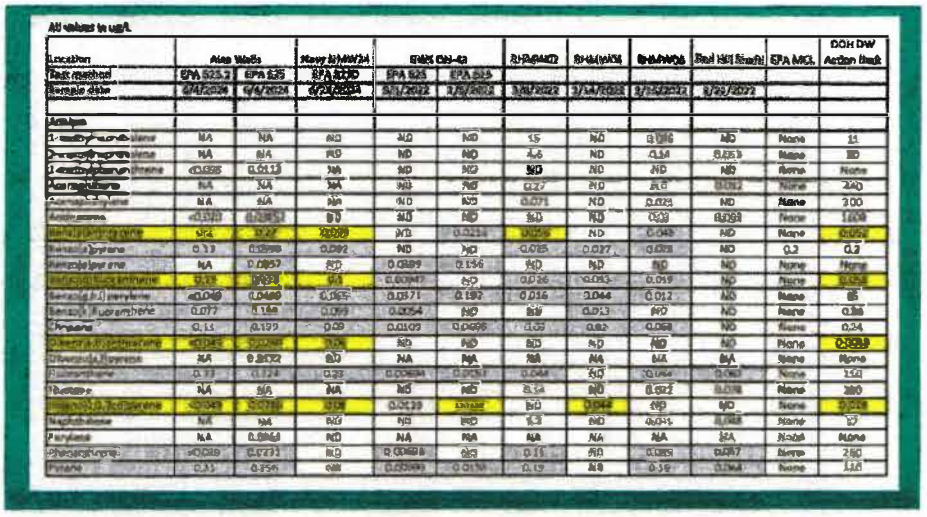
/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

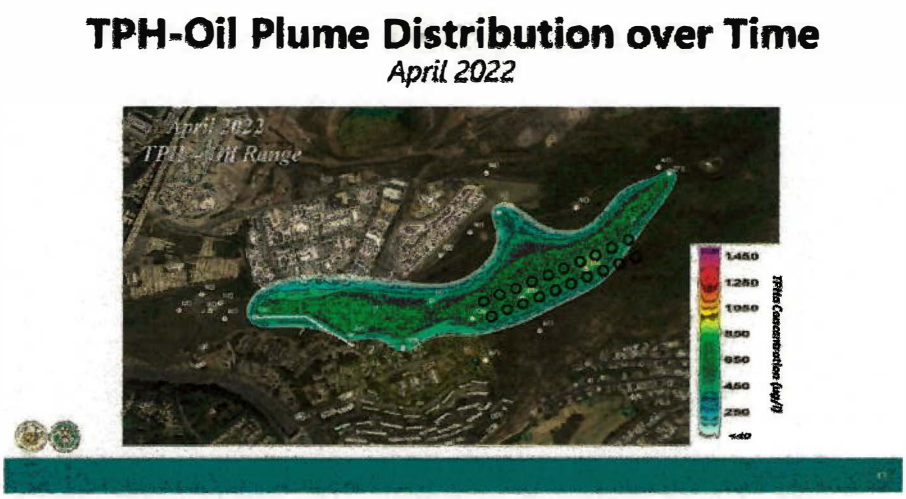
DISCUSSION: Erwin Kawata, Deputy Manager, gave the report.

During Deputy Manager Kawata's presentation, while presenting PPT, slide six, Chair Anthony inquired about the distance between the BWS Aiea and Halawa Wells.



Deputy Manager Kawata replied that Aiea and Halawa Wells are approximately half a mile apart. The Navy NMW24 is slightly south of the BWS Wells.

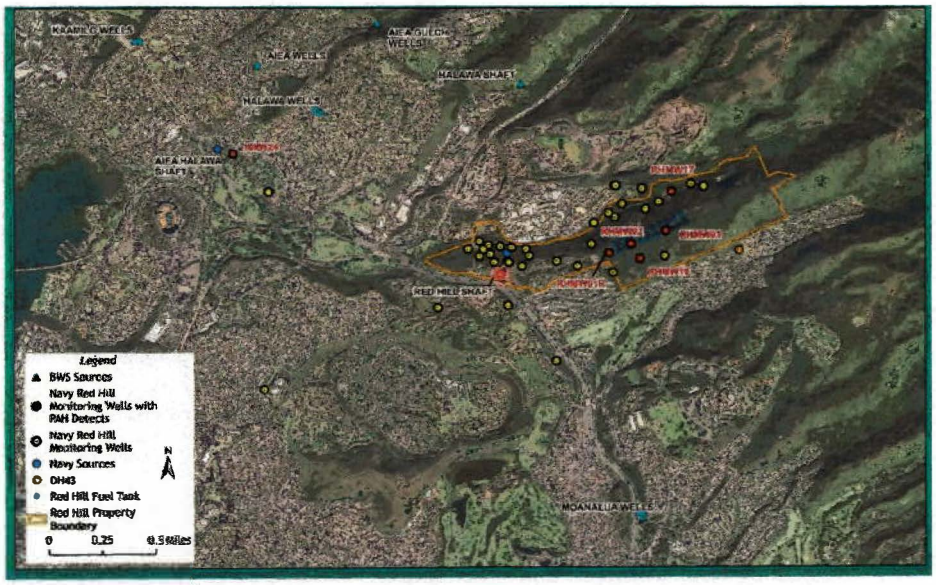
After Deputy Manager Kawata presented slide 12 of his PPT, Chair Anthony asked why none of the heat maps presented showed any data, movement, or reading in the surrounding industrial areas.



Deputy Manager Kawata responded that no monitoring wells are in the industrial areas. Therefore, there is no way to understand how much contamination is present in the groundwater in those areas beyond where the tanks are located.

Board Member Wilhelm asked what the BWS must see to feel comfortable again and restart service from its Aiea Well, Halawa Wells, and Halawa Shaft.

Manager Lau asked that the PPT slide five be shared.



Manager Lau stated the majority of the Navy monitoring wells, pictured in yellow dots, are below the tanks and nearby areas.

Deputy Manager Kawata added that areas west of the tanks almost have no monitoring wells.

Manager Lau explained that the heat maps indicate the amount of contamination in areas where monitor wells are available and can provide data. However, monitoring wells are lacking near the BWS Aiea Well, Halawa Well, and Halawa Shaft. Therefore, no data is available. He stated that more monitoring wells need to be drilled to determine where the plumes are migrating and to understand the geology, which will help the BWS decide the future of the wells currently shut down. Manager Lau shared that for over a decade, the BWS has been raising concerns with the regulators and the Navy regarding leaks from the Navy's Red Hill Bulk Fuel Storage traveling across the valley towards BWS wells. He stated that he feels uncomfortable turning on the three wells shut down during this time. He mentioned that another well may be at stake, Kaamilo Well, and will need to make a decision affecting the community's needs and protecting the community's health.

Board Member Lance Wilhelm asked if the proper monitoring wells were installed and provided data; turning on the three BWS wells would be considered.

Manager Lau responded that a robust monitoring well network is needed, along with additional testing by a third party to ensure the reliability of the data.

Chair Anthony commented that it will take years to install monitoring wells due to permitting requirements and determining their costs. In the meantime, the BWS requests that regulators require the Navy to participate in independent third-party weekly testing, which follows the proper protocols and regimen as the BWS, which allows for a data stream that helps understand what is happening with the plume and groundwater.

Manager Lau echoed Chair Anthony's comment. He stated that sampling and testing frequency should be increased to weekly at all monitoring well locations due to the lengthy process of installing monitoring wells. The reason for the urgency is that the regulators mentioned that fuel will biodegrade over time. However, as a reminder, Manager Lau mentioned the November 2023 Aqueous Film Forming Foam (AFFF) spill, which contained Per-and polyfluoroalkyl substances (PFAS). He shared that PFAS does not degrade readily over time but moves easily with water and dissolves easily in water. Therefore, all monitoring well locations should be tested for contamination every week to provide additional information to understand what is happening underground in the aquifer.

Board Member Andaya stated that he agrees that more testing should be done to obtain more data and better understand what is happening

underground in the aquifer. He inquired if treatment is an option or what the BWS plans if what is suspected is true.

Manager Lau replied that water treatment is a possibility. However, the Navy's Red Hill Bulk Fuel Storage Facility has been operating for 80 years. Therefore, not knowing what was stored and leaked from the facility can create many challenges when treating water. Manager Lau shared that at a Commission of Water Resources Management (CWRM) meeting, a Water Commissioner asked him about an activated carbon treatment facility, which he responded would be possible since the BWS has gained experience from the Central Oahu agricultural areas and mentioned that despite treatment, the non-point contaminations had not gone down. Manager Lau raised the question about the cost of a treatment system facility and who would be responsible for the construction and maintenance. In answering his question, he responded that the polluter should be held accountable.

Board Member Andaya commented that, hopefully, the BWS will not have to resort to a treatment system, but it is good to know that the BWS had an option if needed.

Manager Lau shared that the 12 activated carbon treatment plants in central Oahu currently cost approximately $5 million (M) a year. He stated that treatment is an option, but cleaning the resources should always be a priority.

Chair Anthony commented that the BWS is observing the Navy's design process for a treatment center, which Congress provided half a billion dollars to start. The granulated activated carbon (GAC) system the Navy currently has produces up to six million gallons a day (mgd) of water.

Manager Lau shared that he cautioned the Navy to speak with their customers when they expressed that they wanted to turn the Red Hill Bulk Fuel Storage Facility into a shaft to be able to supply the JBPHH with water.

Board Member Sproat expressed her concern about where the plume is moving. She referred to the case in Kirtland, where an additional 100 monitoring wells were needed to identify where the plume was moving. Board Member Sproat stated that at $1M per monitoring well, it is vital to seek funding and support because the ratepayers should not have to clean up the mess that the Navy created. She is concerned that other wells will be affected, causing the BWS to shut down other wells as a precaution and how it would affect the community. Board Member Sproat agreed with Manager Lau that if water treatment is the BWS's route, the BWS will need to speak with the community since the community is who the BWS serves.

Chair Anthony commented that in the early stages of the Red Hill Bulk Fuel Storage Facility spill, the heat maps indicated that there was a huge plume, and over time, the contamination was dissipating, but the question

remained: where did the contamination go? He stated that as much as he does not want to say it, "we're finding out now where it went". He shared that the BWS is working to install two additional monitoring wells with the funding issued by the Legislature; however, the BWS needs cooperation from the Navy and the regulators to move forward with weekly testing, following protocols, and using the same test method so data can be shared and compared.

Manager Lau shared his concern about the validity of the Navy's data; he suggested that the regulators check the Navy's sampling and testing process to ensure that the data collected is valid and avoid future issues.

Vice Chair Kaneshiro asked why it takes up to eight weeks to receive test results from a sample.

Deputy Manager Kawata responded that the time needed to test a sample is fixed.

Vice Chair Kaneshiro inquired if there was a way to speed up the test.

Deputy Manager Kawata replied there is no way to speed up the test process. He stated that there are always efforts to improve the test process; unfortunately, the current test is the best available. A quicker test process is being researched.

Manager Lau shared that the BWS Kaamilo Wells options are being looked into.

Vice Chair Kaneshiro inquired if the BWS is taking surface water samples near the flats.

Manager Lau replied that the BWS is not currently sampling the springs or nearshore waters.

Vice Chair Kaneshiro commented that if the contamination reached the shoreline, would it be able to move further west or in other directions?

Manager Lau stated that there's a lack of information in half of Halawa Valley due to no monitoring wells in the area; therefore, there is no data on the migration of the plumes. What the BWS knows is that there have been three large fuel leaks in the last decade: in 2014, tank 5 leaked 27,000 gallons; at a later date, tank 20 leaked 20,000 gallons into the lower access from a connecting pipeline; another thousands of gallons spilled from an AFFF system drain line made of PVC pipe broke.

Vice Chair Kaneshiro asked about the fate and transport of these chemicals, whether the chemicals should be tracked, and indicated the late stage of breakdown.

Deputy Manager Kawata responded that some of these chemicals decompose to other chemicals, and other chemicals that the BWS is

looking into, which are far and few between. The BWS will look into what mimics what is currently out there and how it can be monitored.

There was in-person testimony:

Susan Gorman-Chang	*Stated she stands on her written testimony, provided. She, however, commented that the Navy needs to state that their monitoring wells are not picking up anything because there are not enough monitoring wells.*

Chair Anthony agreed with Ms. Susan Gorman-Chang. He mentioned that the Wai report points out the need for a more coordinated monitoring well grid, in which the Navy stated that they are in the process of drilling an additional 22 monitoring wells, and up to ten may be completed. Chair Anthony commented that a lot of data is being questioned due to discrepancies and missing information.

Manager Lau shared that the Red Hill Remediation Round Table group has been meeting for the past two years and includes subject matters such as the BWS, the DOH, the EPA, the United States Geological Survey (USGS), and CWRM. He commented that these meetings should allow for the community to be included for engagement and transparency.

Ms. Gorman-Chang shared that as a member of the CRI the Navy has refused to join and talk with the community.

There was in-person testimony:

Danielle "Danny" Espiritu	*Expressed her appreciation and Mahalo to the BWS for their leadership, tranparency, integrity, bringing in additional experts. She expressed her gratitude to the BWS for prioritizing the well-being of the community.*

There was remote testimony:

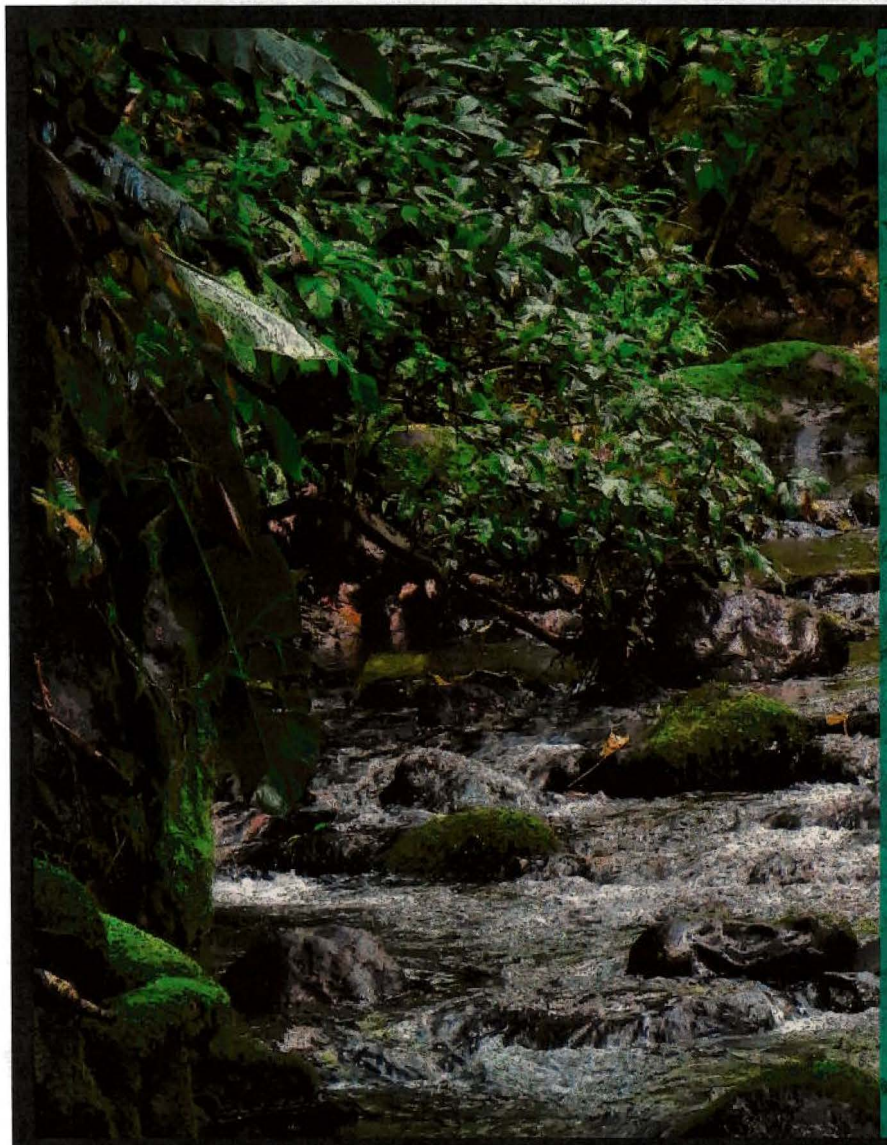
Davie-Ann "Momilani" Thomas	*Shared that as a Navy wife and affected family member she has been living at Pearl City Pennisula since 2005 and has not been able to drink water from the Navy's water system. She expressed her big Mahalo to the BWS for all that they are doing, she stated, "you guys are our superheroes."*

Tara Rojas	*Agreed that the Navy should be held accountable for the cost to remediate and fix the harmful issues they have caused to to negligent actions.*
Marti Townsend	*Stated she was testifying on behalf of Earthjustice, supporting the BWS, and providing clean drinking water. Due to insufficient information, every mechanism and opportunity available should utilized to remediate and protect our very important resource.*
Wayne Tanaka	*Of the Sierra Club echoes the gratitude that has been expressed for the BWS diligence in shutting down the Aiea and Halawa Wells out of precaution. He pointed out that the unknows is because the Navy and the DOH ignored the warnings from the BWS, Sierra Club, and the community about the need for monitoring wells for a fate and transport model, which were required under the 2015 Administration Order of Consent (AOC), which is still not done.*

There were written testimony:

Brooke Jones	*Expressed her Mahalo for putting the water and community first and supports the BWS call for action following the recent PAH detections.*
Jessica Moore	*Thanked the BWS for their diligent and focused efforts to protect the community and water and supports the actions taken following the recent PAH detections.*
Janice Toma Shira	*On behalf of the Shimanchu Wai Protectors in full support of the actions taken by the BWS following the recent PAH detections.*
Ikaikaonalani James	*Expressed Mahalo to the BWS for being exceedingly cautious when*

	making decisions regarding our Wai. Expressed concerns of the PAH detections in Aiea's groundwaters and how the Navy has been treating the wai like dumping grounds. Hewa.
Cory Harden	*Applaud's the BWS for the call for action following the recent PAH detections.*



POLYCYCLIC AROMATIC HYDROCARBONS DETECTED IN BOARD OF WATER SUPPLY AIEA WELLS

August 2024

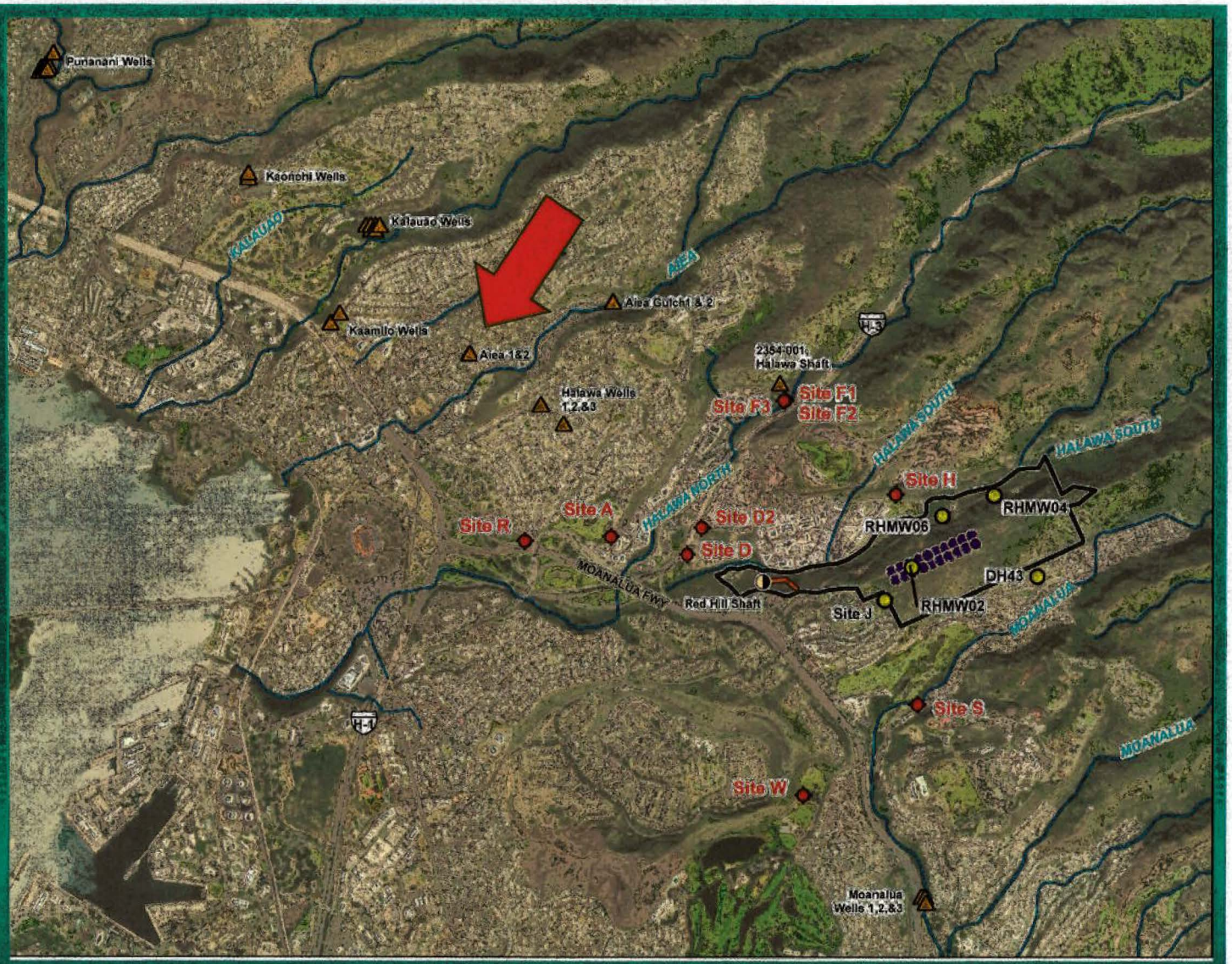
boardofwatersupply.com

POLYCYCLIC AROMATIC HYDROCARBONS (PAH) DETECTED IN BWS AIEA WELLS

- Polycyclic aromatic hydrocarbons (PAHs) are a class of chemicals that occur naturally in coal and petroleum products like crude oil, and gasoline.
- PAH occur as complex mixtures of multiple related compounds and are persistent in groundwater.
- The PAH detections at BWS Aiea Wells (inactive wells) are the first time that BWS has observed PAHs in this well.

WHERE IS BWS AIEA WELLS ?

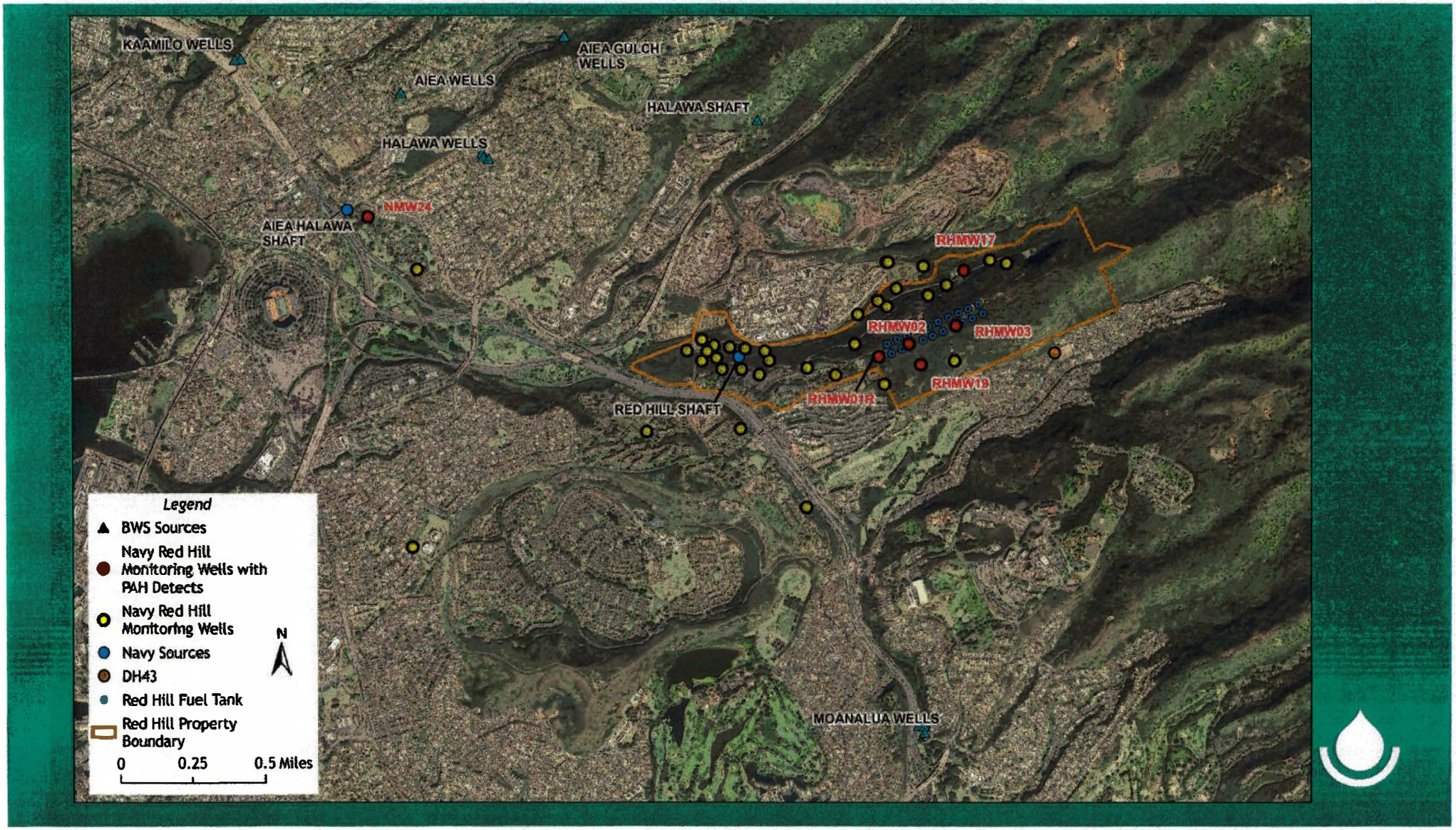
- 2.16 miles west of the Red Hill facility



Navy groundwater model predicts possible directions of contamination from Red Hill facility.

Navy particle track show BWS Aiea Wells to be potential receptor.

BWS stopped pumping Aiea Wells on December 8, 2021, soon after the Navy Red Hill Shaft contamination incident on November 20, 2021.


KAAMILO WELLS
AIEA GULCH WELLS
AIEA WELLS
HALAWA SHAFT
HALAWA WELLS
NMW24
AIEA HALAWA SHAFT
RHMW17
RHMW02
RHMW03
RHMW19
RHMW01R
RED HILL SHAFT
MOANALUA WELLS
Legend
BWS Sources
Navy Red Hill Monitoring Wells with PAH Detects
Navy Red Hill Monitoring Wells
Navy Sources
DH43
Red Hill Fuel Tank
Red Hill Property Boundary
N
0
0.25
0.5 Miles

All values in ug/L

Location	Aiea Wells		Navy NMW24	BWS DH-43		RHMW02	RHMW04	RHMW06	Red Hill Shaft	EPA MCL	DOH DW Action limit
Test method	EPA 525.2	EPA 625	EPA 8270	EPA 625	EPA 625						
Sample date	6/4/2024	6/4/2024	6/24/2024	5/3/2022	3/9/2022	3/8/2022	3/14/2022	3/15/2022	2/22/2022		
Analyte											
1-methylnaphthalene	NA	NA	ND	ND	ND	15	ND	0.086	ND	None	11
2-methylnaphthalene	NA	NA	ND	ND	ND	4.6	ND	0.14	0.053	None	30
1-methylphenanthrene	<0.098	0.0113	NA	ND	ND	ND	ND	ND	ND	None	None
Acenaphthene	NA	NA	NA	ND	ND	0.27	ND	ND	0.032	None	440
Acenaphthylene	NA	NA	NA	ND	ND	0.071	ND	0.021	ND	None	300
Anthracene	<0.020	0.00852	ND	ND	ND	ND	ND	0.03	0.063	None	1600
Benz[a]anthracene	0.2	0.27	0.099	ND	0.0216	0.056	ND	0.048	ND	None	0.052
Benzo[a]pyrene	<0.13	0.0999	0.092	ND	ND	0.035	0.027	0.028	ND	0.2	0.2
Benzo[e]pyrene	NA	0.0857	ND	0.0399	0.156	ND	ND	ND	ND	None	None
Benzo[b]fluoranthene	0.19	0.213	0.1	0.00947	ND	0.026	0.033	0.019	ND	None	0.058
Benzo[g,h,i]perylene	<0.049	0.0489	0.065	0.0371	0.192	0.016	0.044	0.012	ND	None	65
Benzo[k]fluoranthene	0.0771	0.189	0.099	0.0054	ND	ND	0.013	ND	ND	None	0.36
Chrysene	0.11	0.199	0.09	0.0109	0.0695	0.09	0.02	0.068	ND	None	0.24
Dibenz[a,h]anthracene	<0.049	0.0269	0.06	ND	ND	ND	ND	ND	ND	None	0.0048
Dibenzo[a,l]pyrene	NA	0.0172	ND	NA	NA	NA	NA	NA	NA	None	None
Fluoranthene	0.33	0.324	0.23	0.00694	0.0153	0.044	ND	0.044	0.063	None	110
Fluorene	NA	NA	NA	ND	ND	0.14	ND	0.022	0.078	None	250
Indeno[1,2,3-cd]pyrene	<0.049	0.0786	0.08	0.0129	0.104	ND	0.044	ND	ND	None	0.018
Naphthalene	NA	NA	ND	ND	ND	8.3	ND	0.041	0.048	None	17
Perylene	NA	0.0361	ND	NA	NA	NA	NA	NA	NA	None	None
Phenanthrene	<0.039	0.0231	ND	0.00696	ND	0.11	ND	0.089	0.057	None	250
Pyrene	0.31	0.356	ND	0.00999	0.0158	0.19	ND	0.19	0.044	None	110

TPH-Oil Plume Distribution over Time

Prepared for the Fuel Tank Advisory Committee Meeting

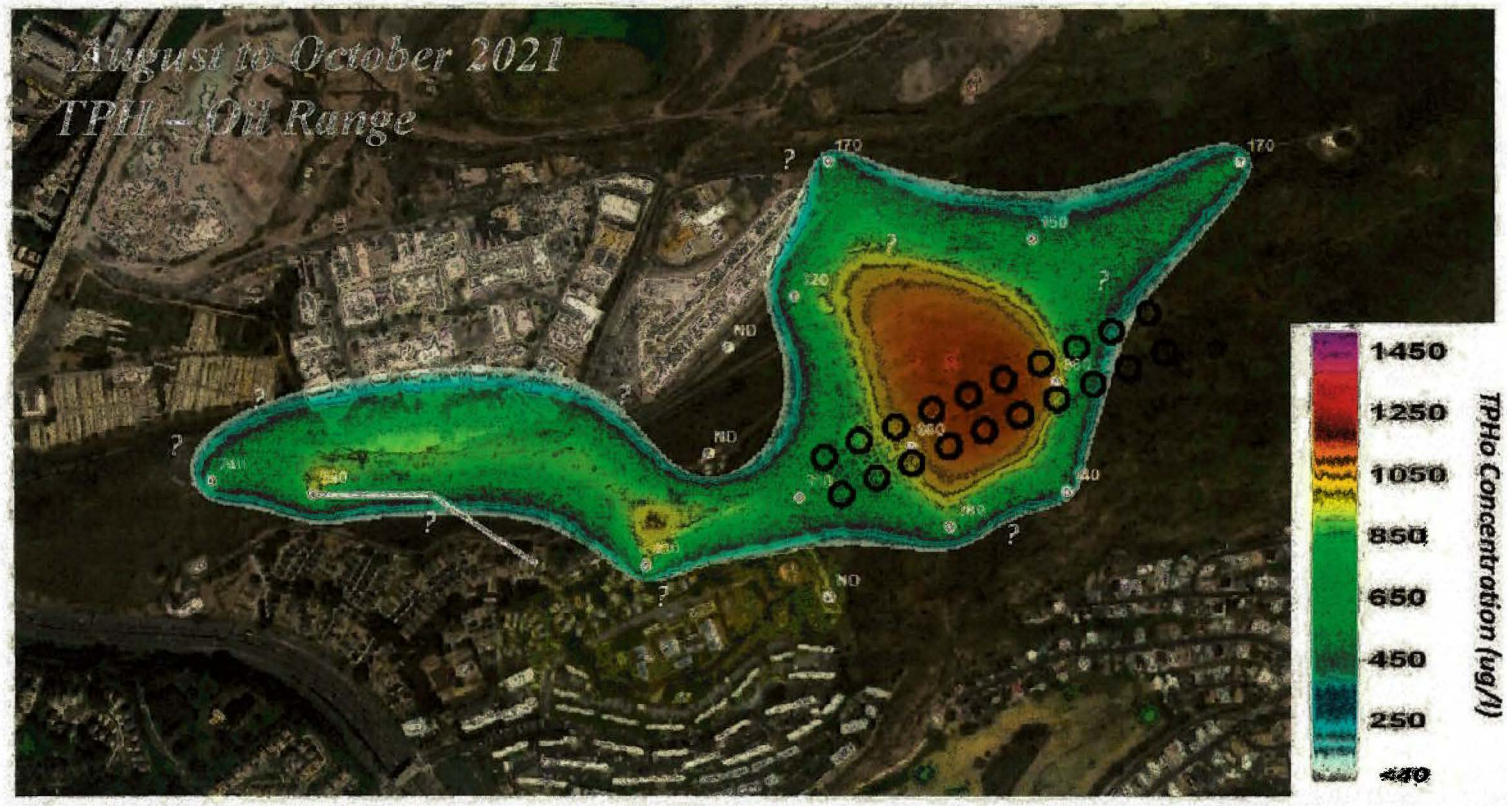
May 13, 2022

TPH-Oil Plume Distribution over Time

Prior & following May 2021 Release(s) **EAL 500 ug/l**

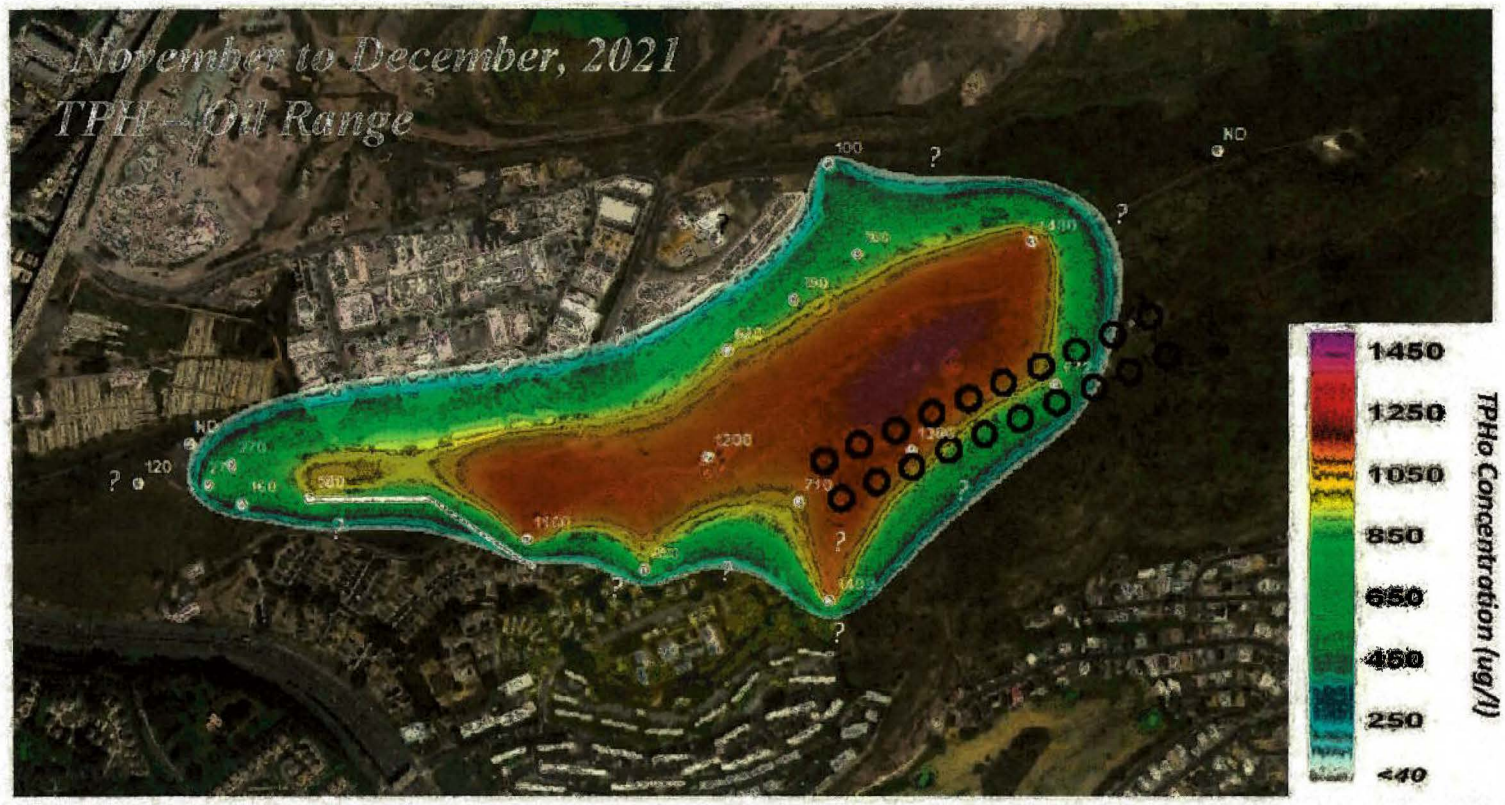
TPH-Oil Plume Distribution over Time

August to October 2021



TPH-Oil Plume Distribution over Time

November to December, 2021

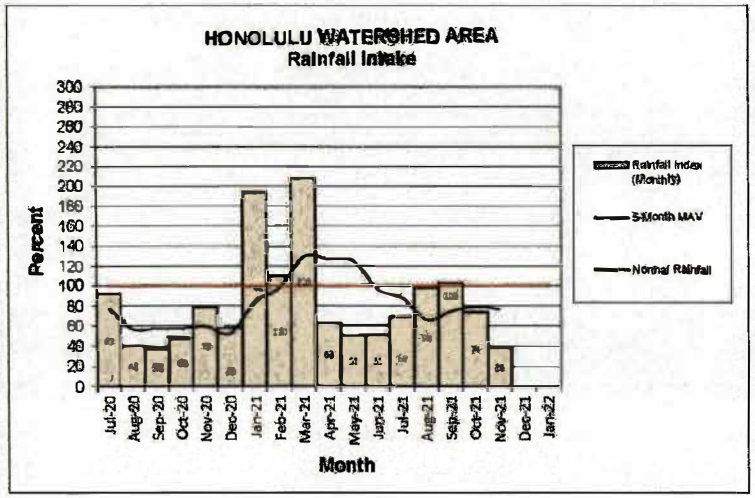


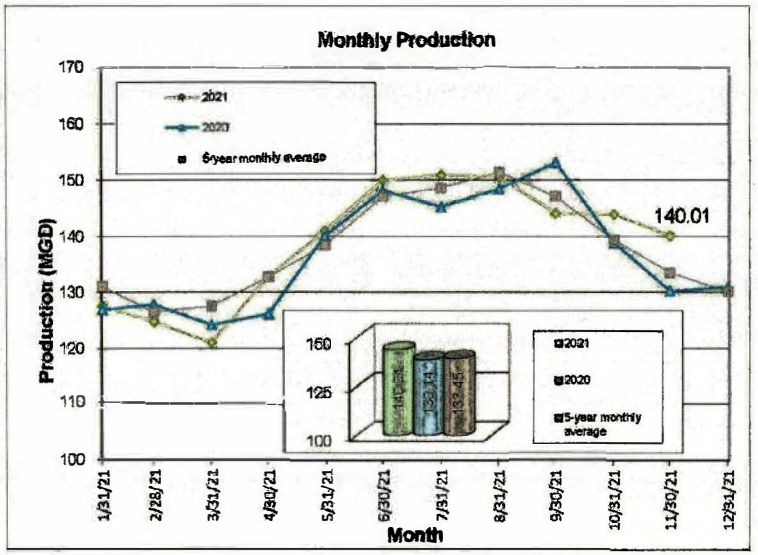
TPH-Oil Plume Distribution over Time

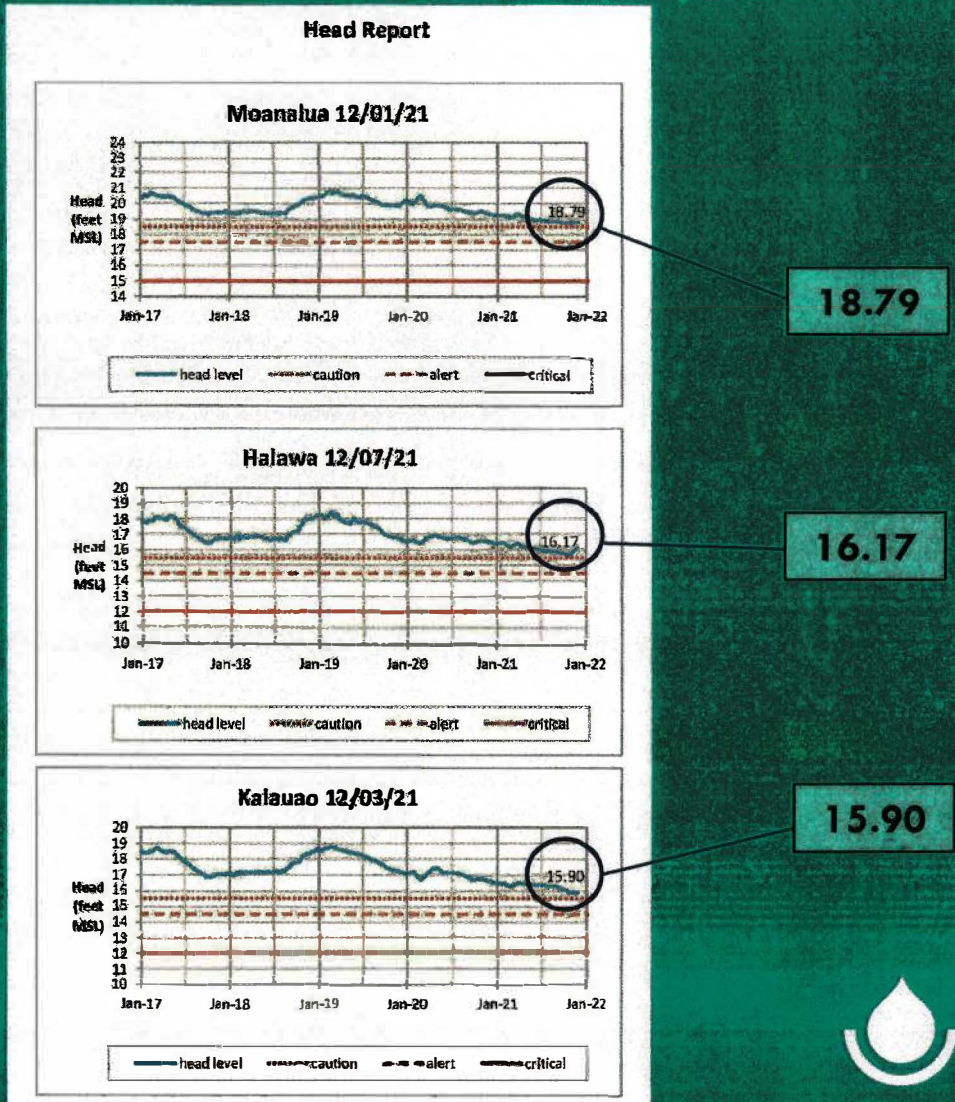
February to March 2022

TPH-Oil Plume Distribution over Time

April 2022


HONOLULU WATERSHED AREA
Rainfall Intake
Percent
Month
Rainfall Index (Monthly)
3-Month MAV
Normal Rainfall


Monthly Production
Production (MGD)
Month
2021
2020
5-year monthly average
140.01


Head Report
Moanalua 12/01/21
18.79
Halawa 12/07/21
16.17
Kalauao 12/03/21
15.90
Head (feet MSL)
head level
caution
alert
critical

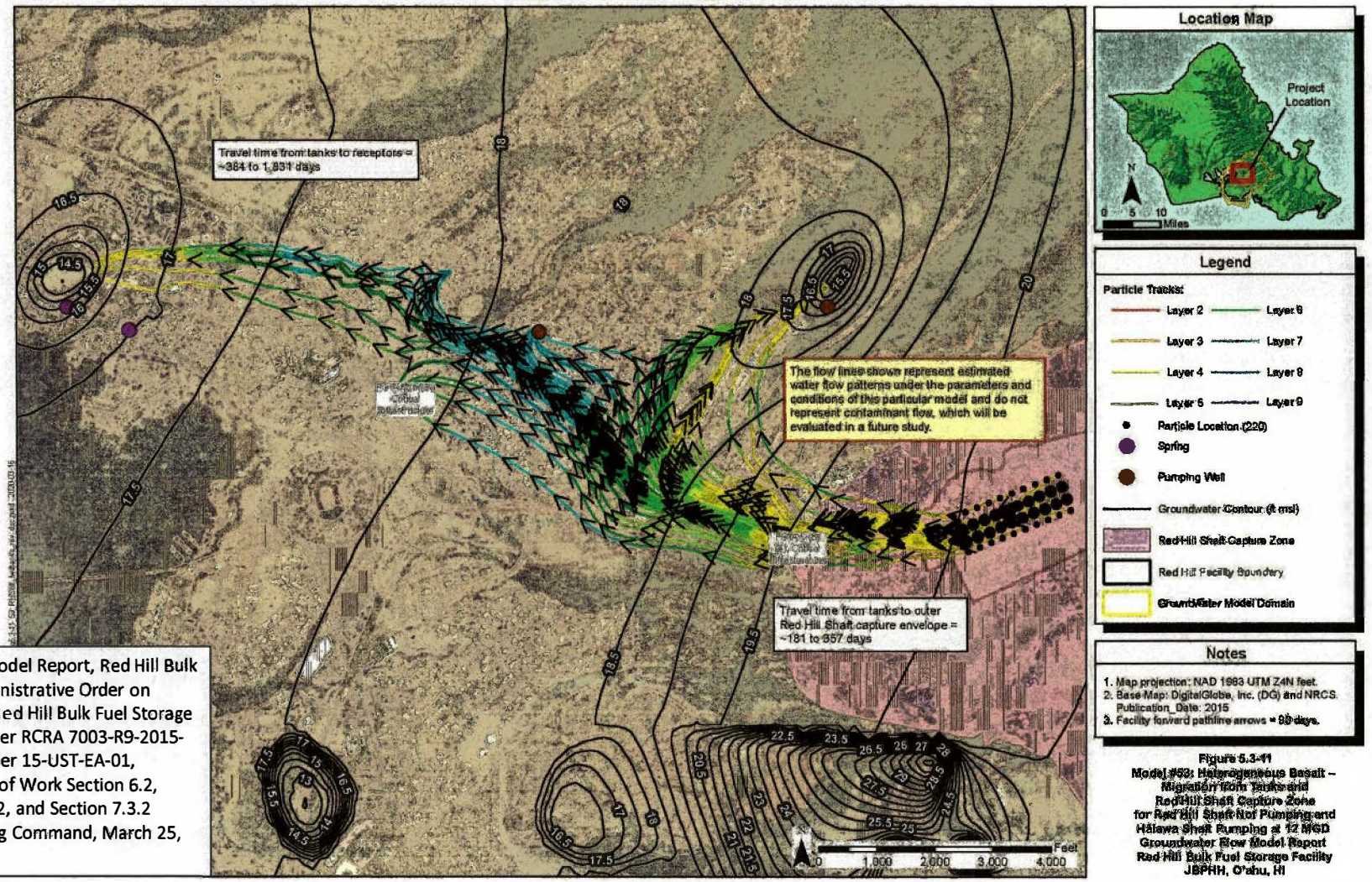
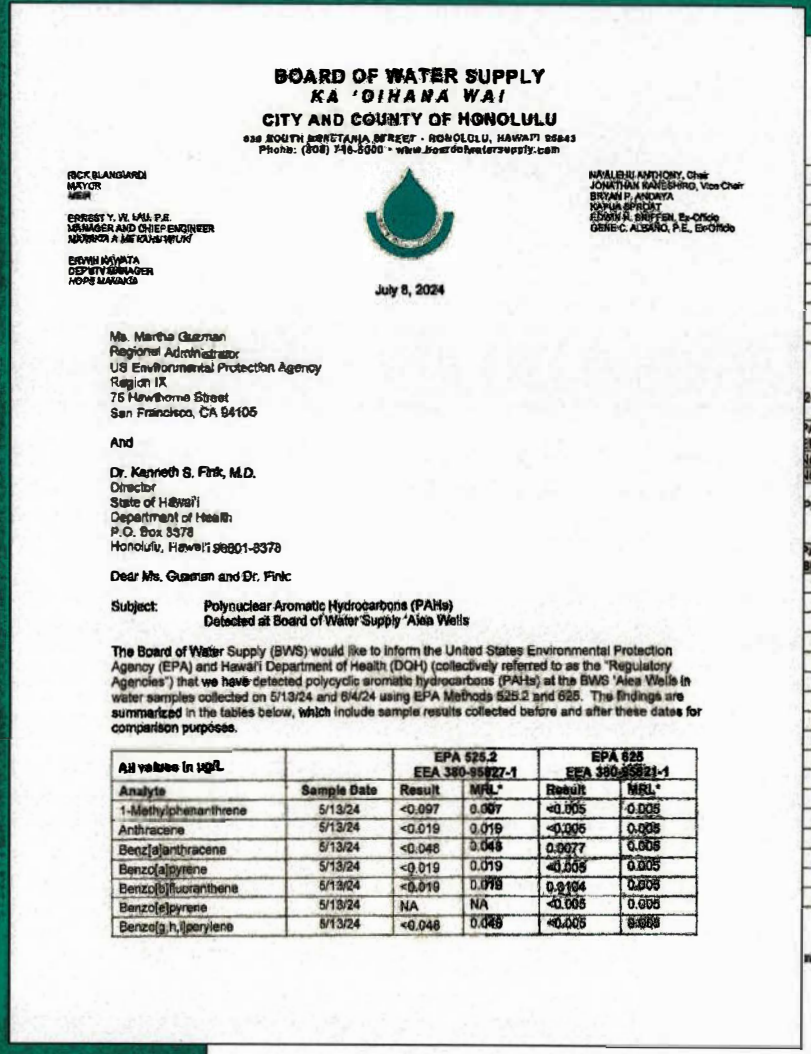


Figure 5.3-11
Model #53: Heterogeneous Basalt – Migration from Tanks and Red Hill Shaft Capture Zone for Red Hill Shaft Not Pumping and Hālawa Shaft Pumping at 12 MGD
Groundwater Flow Model Report
Red Hill Bulk Fuel Storage Facility
JBPHH, O'ahu, HI

Ref: Groundwater Flow Model Report, Red Hill Bulk Fuel Storage Facility, Administrative Order on Consent in the Matter of Red Hill Bulk Fuel Storage Facility, EPA Docket Number RCRA 7003-R9-2015-01 and DOH Docket Number 15-UST-EA-01, Attachment A, Statement of Work Section 6.2, Section 7.1.2, Section 7.2.2, and Section 7.3.2 Naval Facilities Engineering Command, March 25, 2020, Revision 00

BWS notifies EPA and Hawaii DOH of PAH detections by letter dated July 8, 2024



BOARD OF WATER SUPPLY
KA 'OIHANA WAI
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET · HONOLULU, HAWAI'I 96843
Phone: (808) 748-5000 · www.boardofwatersupply.com

RICK BLANGIARDI
MAYOR
MEER

ERNEST Y. W. LAU, P.E.
MANAGER AND CHIEF ENGINEER
MATTHEW K. MCDERMOTT

BRIAN KWATA
DEPUTY MANAGER
HOPE MANAGER

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JONATHAN KANESHIRO, Vice Chair
BRYAN P. ANDAYA
KAHA SPROAT
EDWIN H. SNIFFEN, Ex-Officio
GENE C. ALBANO, P.E., Ex-Officio

July 8, 2024

Ms. Martha Guzman
Regional Administrator
US Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

And

Dr. Kenneth S. Fink, M.D.
Director
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

Dear Ms. Guzman and Dr. Fink

Subject: Polynuclear Aromatic Hydrocarbons (PAHs)
Detected at Board of Water Supply 'Aiea Wells

The Board of Water Supply (BWS) would like to inform the United States Environmental Protection Agency (EPA) and Hawai'i Department of Health (DOH) (collectively referred to as the "Regulatory Agencies") that we have detected polycyclic aromatic hydrocarbons (PAHs) at the BWS 'Aiea Wells in water samples collected on 5/13/24 and 6/4/24 using EPA Methods 525.2 and 625. The findings are summarized in the tables below, which include sample results collected before and after these dates for comparison purposes.

All values in ng/L		EPA 525.2 EEA 380-99827-1		EPA 625 EEA 380-99821-1	
Analyte	Sample Date	Result	MRL*	Result	MRL*
1-Methylphenanthrene	5/13/24	<0.097	0.097	<0.005	0.005
Anthracene	5/13/24	<0.019	0.019	<0.005	0.005
Benz[a]anthracene	5/13/24	<0.048	0.048	0.0077	0.005
Benzo[a]pyrene	5/13/24	<0.019	0.019	<0.005	0.005
Benzo[b]fluoranthene	5/13/24	<0.019	0.019	0.0134	0.005
Benzo[e]pyrene	5/13/24	NA	NA	<0.005	0.005
Benzo[g,h,i]perylene	5/13/24	<0.048	0.048	<0.005	0.005

owed no PAH detections by EPA 525.2 and EPA 625.

H Results by A 625	EEA Lab Report	PAH Results by EPA 525.2
t detected	380-97351-1	Not detected
port pending	380-99971	Not detected

ed herein are enclosed for your review.

cember 8, 2021, soon after the Red Hill Shaft
The PAHs detections at BWS 'Aiea Wells are the first

nt plume moving through the aquifer in the area of the
024. The 5/13/24 samples may have recorded the leading
the well in the 6/4/24 sample as indicated by the higher
s compared to the results of the 5/13/24 sample. The
r these dates may represent the plume moving past,the
ls in crude oil, we believe the contamination may be
elease into Red Hill Shaft and/or past fuel releases from
sults also indicate that contaminants can move in the
pumping conditions and can appear without warning in
akes the sizing and design of any contaminant removal
otentially cost prohibitive.

f the BWS' decision to shut down Hālawa Shaft, Hālawa
mber 2021 Joint Base Pearl Harbor Hickam (JBPHH) fuel
peated request to fully and expeditiously characterize and
the groundwater aquifer underlying the Red Hill facility.
er system to be exposed to fuel contamination appearing in
d be highly variable and unpredictable.

e Navy expedite characterizing the nature and extent of the
numerical groundwater flow model and the fate and
in the aquifer.

n Kawata, Deputy Manager, at 808-748-5066.

Very truly yours,

ERNEST Y.W. LAU, P.E.
Manager and Chief Engineer

25.2 and EPA 625.

PAH Results by EPA 525.2
Not detected
Not detected

PA 625 also

PA 625 80-99837-2 MRL*
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005
0.005

aiea Wells.

BWS receives reply letter from EPA and Hawaii DOH dated August 9, 2024

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

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378

August 9, 2024

Ernest Y.W. Lau, P.E.
Manager and Chief Engineer
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, Hawai'i 96843
[via email only: [illegible]]

Dear Manager and Chief Engineer Lau,

SUBJECT: **Request for Information Regarding Polycyclic Aromatic Hydrocarbons Detected at Board of Water Supply 'Aiea Wells**

Thank you for your July 8, 2024 letter[1] notifying us of polycyclic aromatic hydrocarbons (PAHs) detected in samples taken from Honolulu Board of Water Supply (BWS) 'Aiea Wells on May 13 and June 4, 2024. We appreciate BWS' efforts to uphold our shared commitment to protecting public health and the environment and want to work together to accurately identify the root cause of these detections. We understand BWS believes these detections may be related to the November 2021 fuel spill from the Red Hill Facility. To better understand and further investigate these detections, we are interested in receiving additional background and data from the BWS about these detections. Both DOH and EPA would like to receive the following information as soon as possible:

1. Specific locations in BWS 'Aiea Wells where the samples were taken.
2. Sample collection methodology used.
3. Sample type (pre-/post-treatment).

[1] [illegible]

WHAT DOES THE PAH RESULTS MEAN?

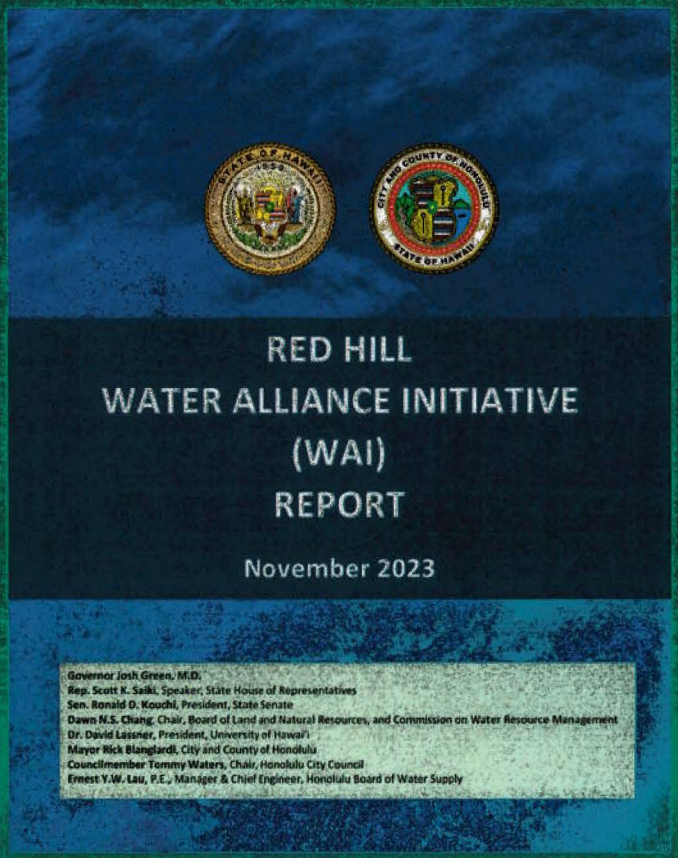
- Reaffirms BWS concerns with past fuel releases from Red Hill and impact to aquifer and environment.
- Reaffirms decision to shut down three BWS wells (Halawa Shaft, Aiea Wells and Halawa Wells) soon after JBPHH water crisis.
- The three BWS wells to remain shut down indefinitely – Restart is uncertain.

WHAT DOES THE PAH RESULT MEAN? – CONT.

- Need better understanding of groundwater flow direction in the aquifer and how past fuel releases can be cleaned up.
- Further study is warranted to assess the potential long-term impact to the aquifer.
- Every Navy monitoring well and water source needs to be tested weekly for all PAHs using EPA method 525.2 and 625.

WHAT DOES THE PAH RESULTS MEAN? – CONT.

- Reaffirms the Red Hill WAI Alliance call for remediation and monitoring in the region.



QUESTIONS / DISCUSSION

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/26/2024 9:31:04 AM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

TESTIFIER INFORMATION

Full Name	Susan Gorman-Chang
Email	sggc@dslextreme.com
Phone (optional)	(808) 797-8728

TESTIMONY DETAILS

Agenda Item	INFO #2: Polycyclic Aromatic Hydrocarbon (PAH) Detection at the Board of Water Supply (BWS) Aiea Wells
Your Position on Matter	Support
Representing	Self
I wish to provide	Written testimony + request to give in-person oral testimony at 630 S. Beretania Street

Written Testimony (if entered on the online form; otherwise see attached)	Susan Gorman-Chang Meeting: August 26, 2024 Item: INFORMATION ITEM #2 First, I want to express my deep gratitude and appreciation for all the Board of Water has done and continues to do on behalf of the residents of Oahu by way of being a trustworthy, dependable and strong advocates of our wai and our aquifer. Water is life cannot be said too many time. Your advocacy for our health and safety has been the polar opposite of the Navy and the DOH, both of whom continue to downplay, gaslight, deny, and deflect the danger to our aquifer posed by the Navy's negligence and the toxins the Navy has allowed and the DOH has condoned, into our into precious wai. Info Item # 2: PAH Detection at the BWS Aiea Wells I support the BWS deep concern and alarm at PAH detections in the BWS Aiea Wells. This is a threat to our entire water system, as these detections prove that the plume is moving west. While the Navy and DOH dither and purely speculate about the source of the PAH and point out that the Navy's plume map is "just a draft", we are all in real danger because our water is in danger. We need to demand that the Navy step up, with their vast budget and self-declared "concern" and self-declared "transparency" and do weekly ground water testing instead of monthly. This is a fast moving disaster and testing only once a month leaves thousands of residents potentially exposed to toxins in our own water system.

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/24/2024 10:59:41 AM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony

TESTIFIER INFORMATION

Full Name	Brooke Jones
Email	bejones@hawaii.edu
Phone (optional)	(808) 295-6501

TESTIMONY DETAILS

Agenda Item	INFO #2: Polycyclic Aromatic Hydrocarbon (PAH) Detection at the Board of Water Supply (BWS) Aiea Wells
Your Position on Matter	Support
Representing	Self
I wish to provide	Written testimony
Written Testimony (if entered on the online form; otherwise see attached)	Aloha Board of Water Supply, Mahalo for always putting our wai and our people first. I fully support your call for action following the recent PAH detections in the aquifer under 'Aiea and appreciate your continued commitment to protecting O'ahu's drinking water. It is vital that we know exactly where the contamination is coming from and where it is going. The Navy has demonstrated an appalling history of negligence in regards to our drinking water and continues to do so: instead of seeking to find the cause and address the growing crises, it seeks to assign blame elsewhere. Thank you for working to safeguard our health and lives. Sincerely, Brooke Jones

Form Submitted on:	8/24/2024 10:59:41 AM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/26/ 2024 1:00:57 PM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony

TESTIFIER INFORMATION

Full Name	Jessica Moore
Email	jessica.hui@post.harvard.edu
Phone (optional)	(808) 395-5542

TESTIMONY DETAILS

Agenda Item	INFO #2: Polycyclic Aromatic Hydrocarbon (PAH) Detection at the Board of Water Supply (BWS) Aiea Wells
Your Position on Matter	Support
Representing	Self
I wish to provide	Written testimony

Written Testimony (if entered on the online form; otherwise see attached)	Aloha Board of Water Supply, My family and I are so thankful for your diligent and focused efforts to protect our people and our water. I was relieved by and wholeheartedly support your call for action following the recent PAH detections in the aquifer under 'Aiea and appreciate your continued commitment to protecting O'ahu's drinking water. Not only do we care deeply about our 'Aiea neighbors, we are not under any illusion that each of our neighborhoods is independent of any other when we all sit atop of the same aquifer that has blessed generation after generation. Mahalo, Jessica Born and raised in the Waimānalo ahupua'a; now living in the Waikīkī ahupua'a.

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

-----Original Message-----
From: Janice Toma Shiira <tomashiira@gmail.com>
Sent: Monday, August 26, 2024 4:24 PM
To: Board of Water Supply Board of Directors <board@hbws.org>
Subject: Written testimony BWS support

CAUTION: This email originated from outside of the organization. Do not follow guidance, click links, or open attachments unless you recognize the sender and know the content is safe.

Hai tai Board of Water Supply staff and Board members

On behalf of the Shimanchu Wai Protectors we fully support your call for action following the recent detection at the BWS Aiea well. We appreciate your voice in the community as you are the ones that have stood up and fought to have clean drinkable water. We trust you and support all your efforts.

Ippee nifee deebiru aka thank you very much

Janice Toma Shiira
Shimanchu Wai Protectors

Sent from my iPhone

BWS TESTIMONY SUBMITTAL / REQUEST TO TESTIFY FORM

Form Submitted on:	8/26/2024 2:16:07 AM
Meeting Date:	August 26, 2024
I wish to provide	Written testimony

TESTIFIER INFORMATION

Full Name	Ikaikaonalani James
Email	ikaikaonalani@gmail.com
Phone (optional)	(808) 800-1106

TESTIMONY DETAILS

Agenda Item	INFO #2: Polycyclic Aromatic Hydrocarbon (PAH) Detection at the Board of Water Supply (BWS) Aiea Wells
Your Position on Matter	I wish to comment
Representing	Self
I wish to provide	Written testimony

Written Testimony (if entered on the online form; otherwise see attached)	Firstly, mahalo nui for being exceedingly cautious when making decisions about our wai. Please continue to pressure the navy to do weekly groundwater testing. I want to express my concerns over the lead and PAHs found in our ground water in Aiea. This cannot go on any longer. I fear for how much more of our groundwater will continue to be poisoned. Ola i ka wai. And the navy has been treating our wai like dumping grounds. First JBPHH now Aiea wells? Hewa. So hewa. And the people disproportionately affected by this, as always, are kānaka ʻōiwi. I'm in pilina with another kanaka māhū living in Seattle, and his tūtū and grandpa are in Aiea, and he's having to stress over literally not being able to do anything to help. It should not be this way. The navy should not be in charge of this water. Why do we continue to let them poison our wai and us? Clean water is a human right. The people living in Aiea and the areas supplied by JBPHH shouldn't have to worry about this. Especially not when their tax dollars are overwhelmingly and non-consensually spent on this military, this genocidal military that poisons us, that poisons our sacred wai. Ola i ka wai. Ola i ka wai. Ola i ka wai.

ACKNOWLEDGEMENTS

Terms and Agreement Check Box	I UNDERSTAND and ACCEPT that all public meeting transcripts and testimony are public documents. Therefore, any testimony that is submitted orally or in writing, electronically or in person, for use in the meeting process is public information.

From: Cory <333cory@gmail.com>
Sent: Sunday, August 25, 2024 9:10 AM
To: Board of Water Supply Board of Directors <board@hbws.org>
Subject: PAH 'Aiea

Aloha board members,
I applaud your call for action following the recent PAH detections in the aquifer under 'Aiea.
The reason we don't know where contamination from Red Hill may be going is because the Navy failed to install sufficient monitoring wells and failed to develop working groundwater and contaminant fate and transport models, despite both being required by the 2015 Administrative Order of Consent.
mahalo,

Cory Harden

ITEM FOR INFORMATION NO. 3

"August 26, 2024

STATUS UPDATE OF GROUNDWATER LEVELS AT ALL INDEX STATIONS

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawai'i 96843

Chair and Members:

Subject: Status Update of Groundwater Levels at All Index Stations

Four aquifer index stations were in low groundwater condition for the production month of July 2024. Pearl City, Punalu'u, and Waialua are in Caution Status. Kaimukī is in Alert Status. The monthly production average for July 2024 was 144.62 million gallons per day.

The Board of Water Supply rainfall index for the month of July 2024 was 93 percent of normal, with a 5-month moving average of 135 percent. As of August 6, 2024, the Hawai'i Drought Monitor shows moderate drought conditions across O'ahu, with severe drought conditions along the leeward coast. The National Weather Service is forecasting below-normal precipitation through October 2024.

Most monitoring wells exhibited stable to slightly decreasing head levels for the month of July 2024, likely reflecting the seasonal increase in production. Average monthly production for July 2024 was higher than for July 2023 and similar to the 5-year monthly average. Increased conservation messaging is recommended over the summer months.

Respectfully Submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION: Barry Usagawa, Program Administrator, Water Resources Division, gave the report. There were no comments or discussion.

PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF JULY 2024

POTABLE

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.07
WAILUPE	0.00
AINA KOA	0.00
AINA KOA II	0.60
MANOA II	0.89
PALOLO	1.43
KAIMUKI HIGH	2.51
KAIMUKI LOW	2.67
WILDER	8.94
BERETANIA HIGH	1.13
BERETANIA LOW	2.46
KALIHI HIGH	3.47
KALIHI LOW	2.16
KAPALAMA	0.39
KALIHI SHAFT	8.33
MOANALUA	2.62
HALAWA SHAFT	0.00
KAAMILO	0.92
KALAUAO	9.28
PUNANANI	9.25
KAAHUMANU	0.33
HECO WAIAU	2.70
MANANA	0.34
WAIALAE IKI	0.53
WELLS SUBTOTAL:	61.00
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.00
GRAVITY SUBTTL:	0.17
HONOLULU SUBTTL:	61.17

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.88
WAIMANALO III	0.00
KUOU I	1.56
KUOU II	0.13
KUOU III	0.75
LULUKU	0.86
HAIKU	0.68
IOLEKAA	0.00
KAHALUU	0.57
KAHANA	1.03
PUNALUU I	0.00
PUNALUU II	2.03
PUNALUU III	1.14
KALUANUI	1.29
MAAKUA	0.40
HAUULA	0.20
WELLS SUBTOTAL:	11.50
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.39
WAIHEE TUNNEL	4.51
LULUKU TUNNEL	0.22
HAIKU TUNNEL	0.28
KAHALUU TUNNEL	1.53
GRAVITY SUBTOTAL:	7.12
WIND. SUBTOTAL:	18.62

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.43
OPANA	0.99
WAIALEE I	0.35
WAIALEE II	0.01
HALEIWA	0.00
WAIALUA	1.88
N.SHORE SUBTOTAL:	3.66

MILILANI (4)	
MILILANI I	4.04
MILILANI II	0.00
MILILANI III	0.73
MILILANI IV	0.00
MILILANI SUBTOTAL:	4.77

WAHIAWA (5)	
WAHIAWA	0.00
WAHIAWA II	3.41
WAHIAWA SUBTOTAL:	3.41

PEARL CITY-HALAWA (6)	
HALAWA 277	0.00
HALAWA 550	0.00
AIEA	0.00
AIEA GULCH 497	0.00
AIEA GULCH 550	0.21
KAONOHI I	1.64
WAIMALU I	0.00
NEWTOWN	1.91
WAIAU	1.92
PEARL CITY I	0.78
PEARL CITY II	1.12
PEARL CITY III	0.20
PEARL CITY SHAFT	0.93
PEARL CITY-HALAWA SUBTOTAL:	8.71

STATION	MGD
WAIPAHU-EWA (7)	
WAIPIO HTS.	1.97
WAIPIO HTS. I	0.00
WAIPIO HTS. II	0.29
WAIPIO HTS. III	1.41
WAIPAHU	6.70
WAIPAHU II	2.07
WAIPAHU III	2.00
WAIPAHU IV	3.10
KUNIA I	6.05
KUNIA II	1.97
KUNIA III	1.33
HOAEAE	7.50
HONOULIULI I	0.00
HONOULIULI II	5.54
MAKAKILO	0.00
WAIPAHU-EWA SUBTOTAL:	39.95

WAIANAE (8)	
MAKAHA I	0.73
MAKAHA II	0.00
MAKAHA III	0.41
MAKAHA V	0.27
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.06
WAIANAE I	0.00
WAIANAE II	0.35
WAIANAE III	1.00
WELLS SUBTOTAL:	2.82
WAIA. C&C TUNNEL	1.40
WAIA. PLANT. TUNNELS	0.12
GRAVITY SUBTOTAL:	1.52
WAIANAE SUBTOTAL:	4.34

NONPOTABLE

NONPOTABLE	MGD
KALAUAO SPRINGS	0.60
BARBERS POINT WELL	1.53
GLOVER TUNNEL NP	0.31
NONPOTABLE TOTAL:	2.44

RECYCLED WATER (JUNE 2024)

RECYCLED WATER	MGD
HONOULIULI WRF R-1	6.58
HONOULIULI WRF RO	1.41
RECYCLED TOTAL:	7.99

PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF JULY 2024

PRODUCTION SUMMARIES

TOTAL WATER	MGD
PUMPAGE	135.81
GRAVITY	8.81
POTABLE TOTAL:	144.62
NONPOTABLE	2.44
RECYCLED WATER	7.99
TOTAL WATER:	155.05

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES

	WATER USE DISTRICTS	A PERMITTED USE/ BWS YLDS	B JUL 2024	C DIFF. A-B
1	HONOLULU	83.32	61.00	22.32
2	WINDWARD	25.02	18.62	6.40
3	NORTH SHORE	4.70	3.66	1.04
4	MILILANI	7.53	4.77	2.76
5	WAHIAWA	4.27	3.41	0.86
6	PEARL CITY-HALAWA	12.25	8.71	3.54
7	WAIPAHU-EWA	50.63	39.95	10.68
8	WAIANAE	4.34	4.34	0.00
	TOTAL:	192.06	144.45	47.60

CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES

	WATER USE DISTRICTS	A PERMITTED USE	B JUL 2024	C DIFF. A-B
7	WAIPAHU-EWA (BARBERS POINT WELL)	1.00	1.53	-0.53
	TOTAL:	1.00	1.53	-0.53

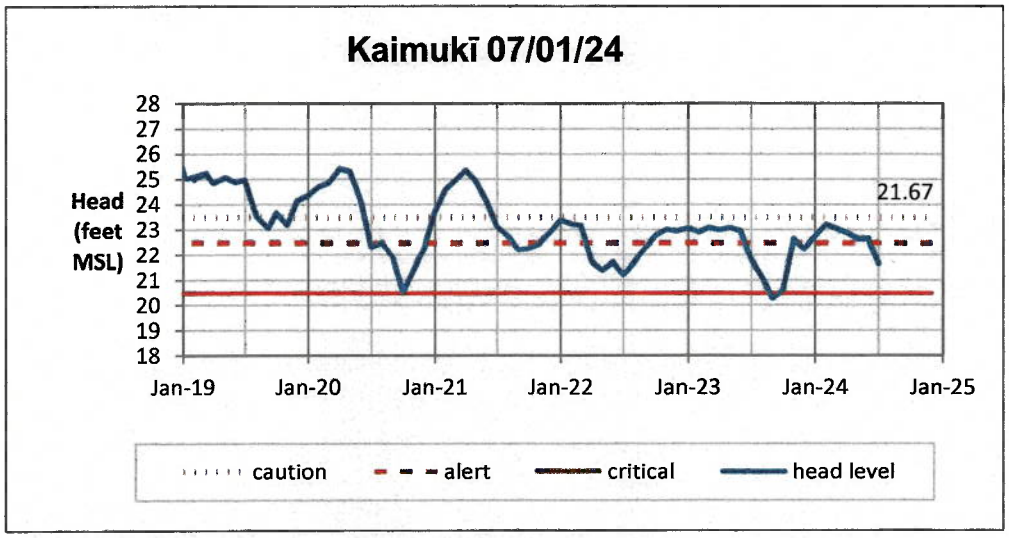
EFFECTIVE WATER DEMAND PER DISTRICT

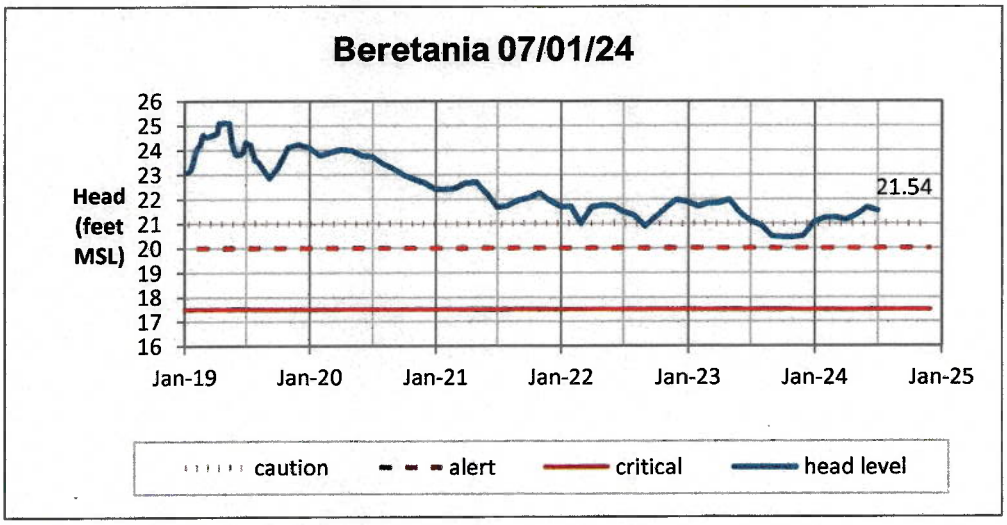
IMPORT/EXPORT BETWEEN WATER USE DISTRICTS

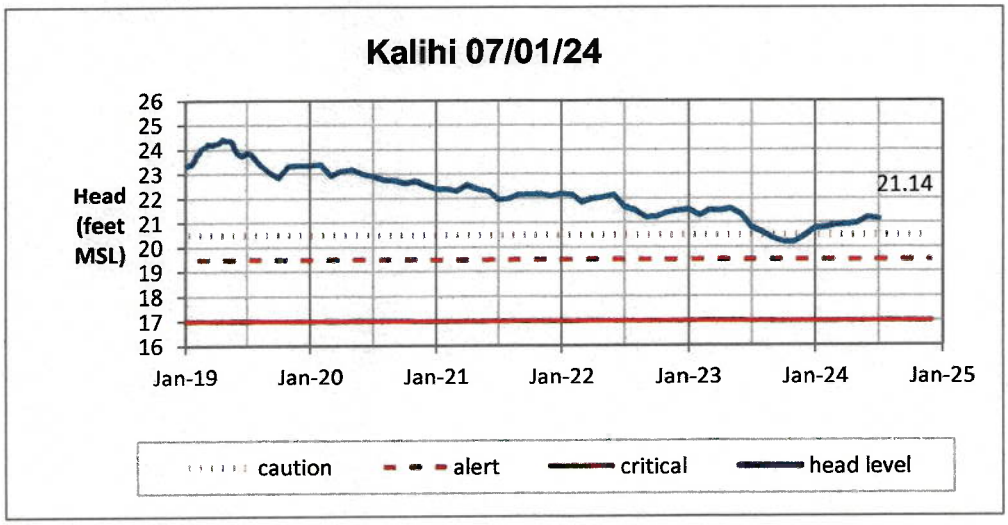
FROM	TO		MGD
2	1	WINDWARD EXPORT	0.14
7	8	BARBERS PT LB	5.90

	WATER USE DISTRICTS	SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	61.17	0.14	-	61.31
2	WINDWARD	18.62	-	0.14	18.48
3	NORTH SHORE	3.66	-	-	3.66
4	MILILANI	4.77	-	-	4.77
5	WAHIAWA	3.41	-	-	3.41
6	PEARL CITY-HALAWA	8.71	-	-	8.71
7	WAIPAHU-EWA	39.95	-	5.90	34.05
8	WAIANAE	4.34	5.90	-	10.25
	TOTAL:	144.62	6.04	6.04	144.62

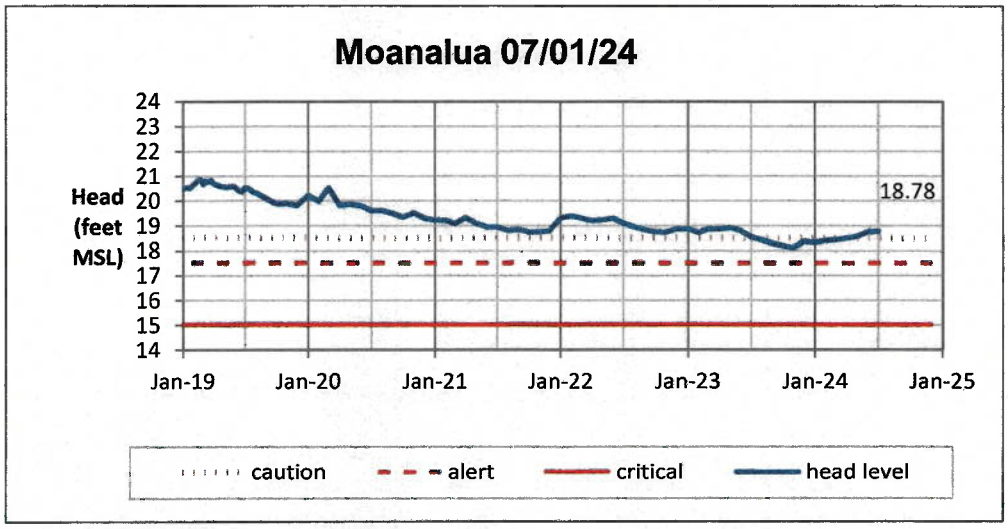
Head Report

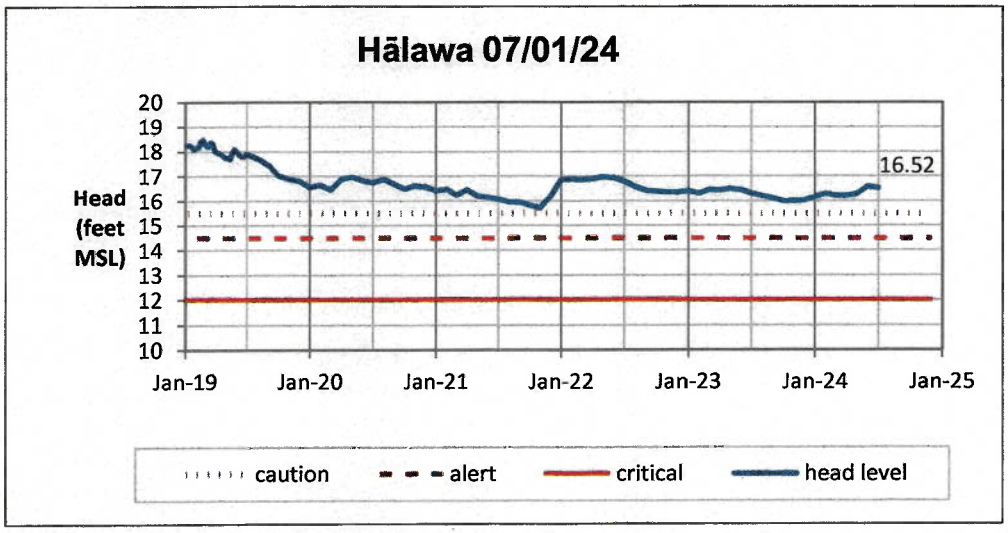

Kaimukī 07/01/24
Head (feet MSL)
28
27
26
25
24
23
22
21
20
19
18
21.67
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

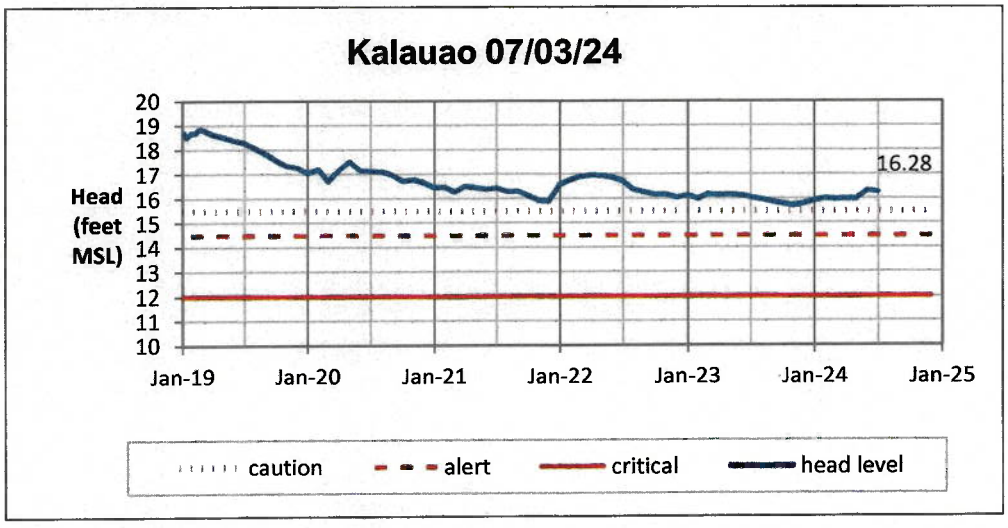

Beretania 07/01/24
Head (feet MSL)
26
25
24
23
22
21
20
19
18
17
16
21.54
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level


Kalihi 07/01/24
Head (feet MSL)
26
25
24
23
22
21
20
19
18
17
16
21.14
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

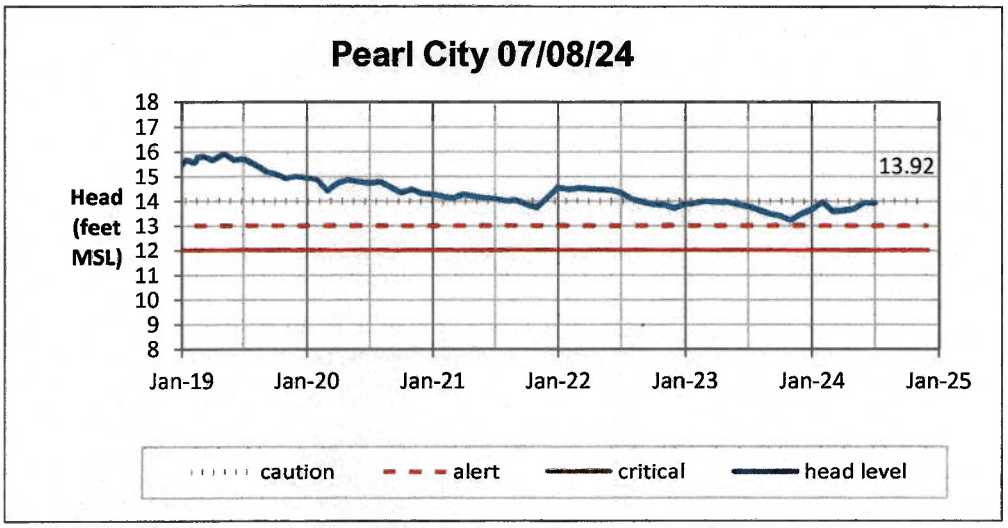
Head Report

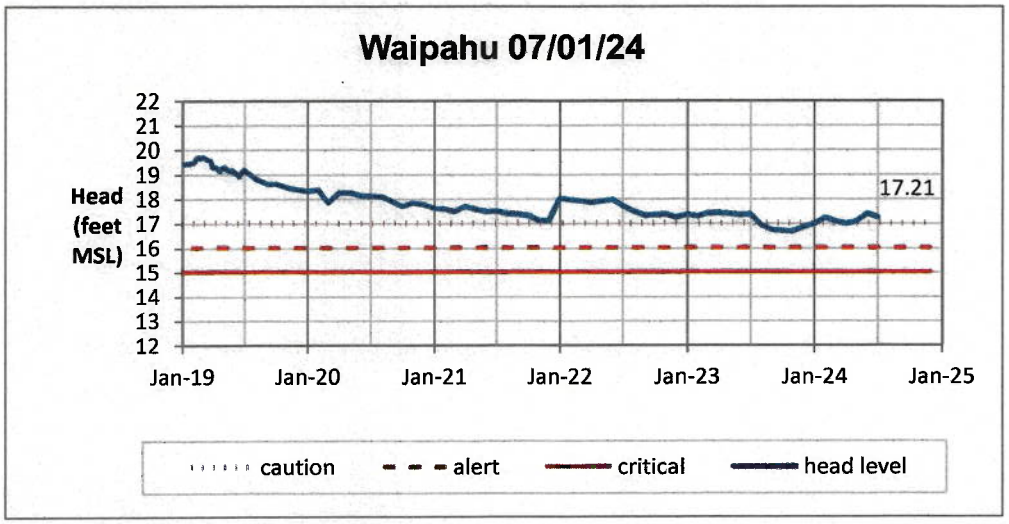

Moanalua 07/01/24
Head (feet MSL)
24
23
22
21
20
19
18
17
16
15
14
18.78
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

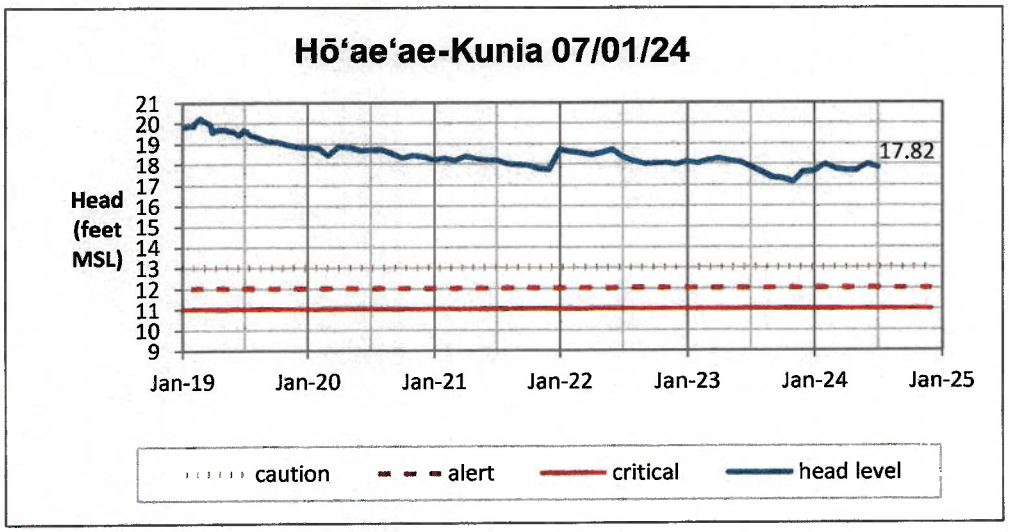

Hālawa 07/01/24
Head (feet MSL)
20
19
18
17
16
15
14
13
12
11
10
16.52
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level


Kalauao 07/03/24
Head (feet MSL)
20
19
18
17
16
15
14
13
12
11
10
16.28
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

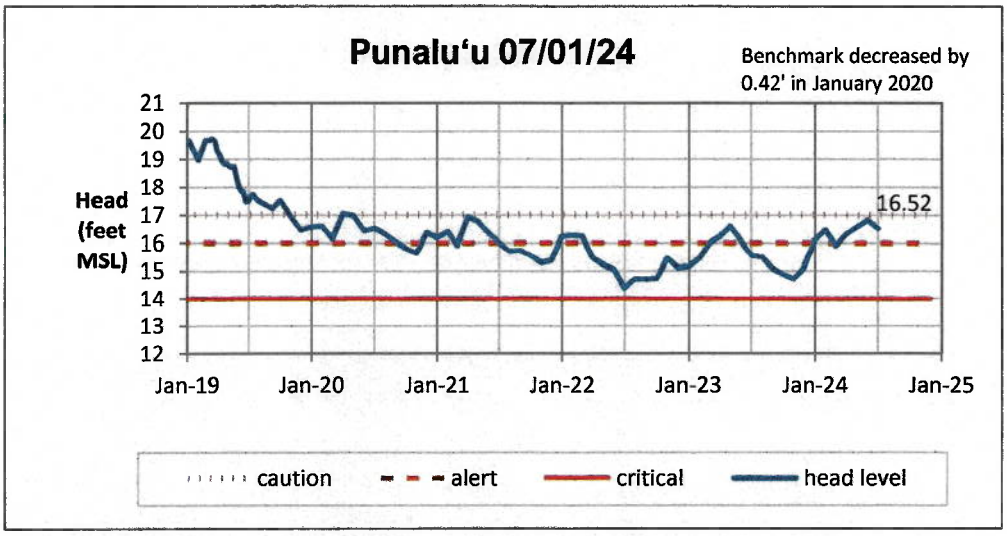
Head Report

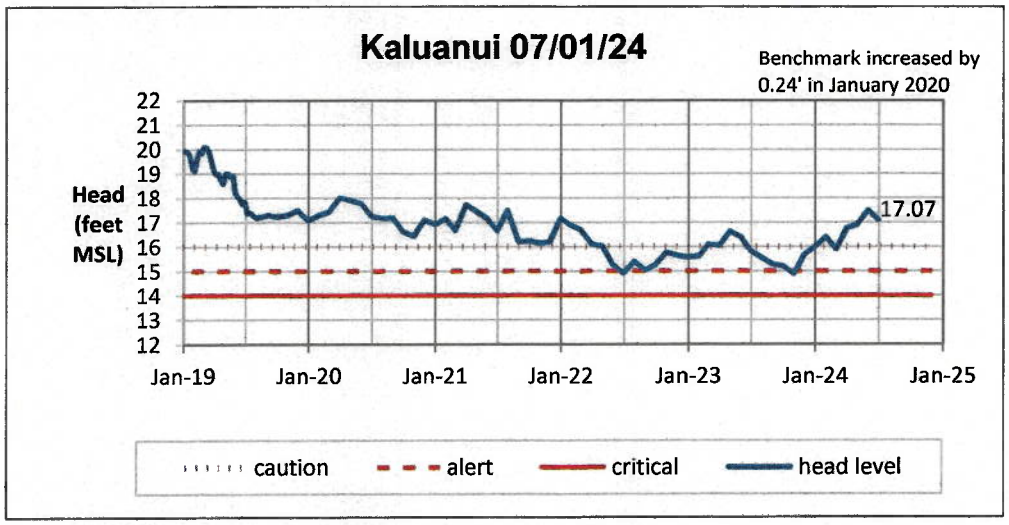

Pearl City 07/08/24
Head (feet MSL)
18
17
16
15
14
13
12
11
10
9
8
13.92
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

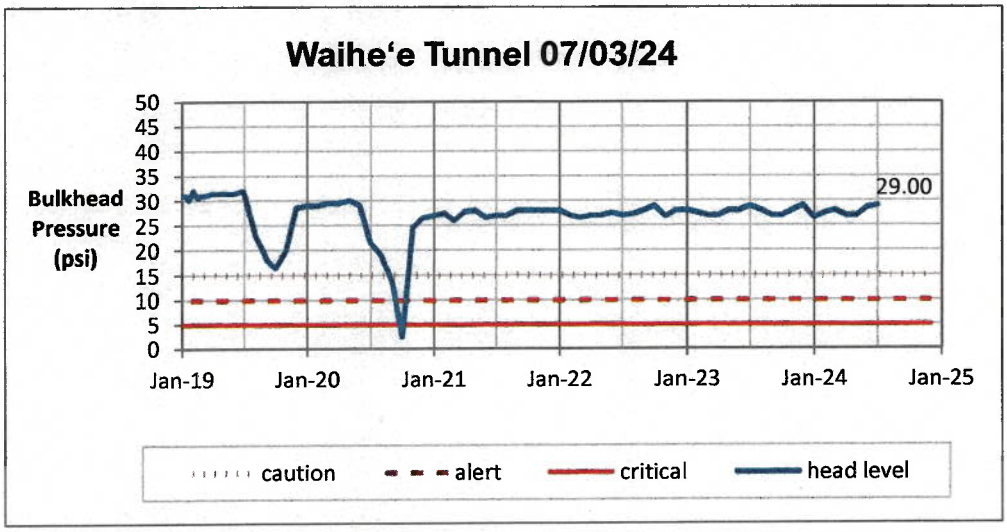

Waipahu 07/01/24
Head (feet MSL)
22
21
20
19
18
17
16
15
14
13
12
17.21
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level


Hō'ae'ae-Kunia 07/01/24
Head (feet MSL)
21
20
19
18
17
16
15
14
13
12
11
10
9
17.82
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

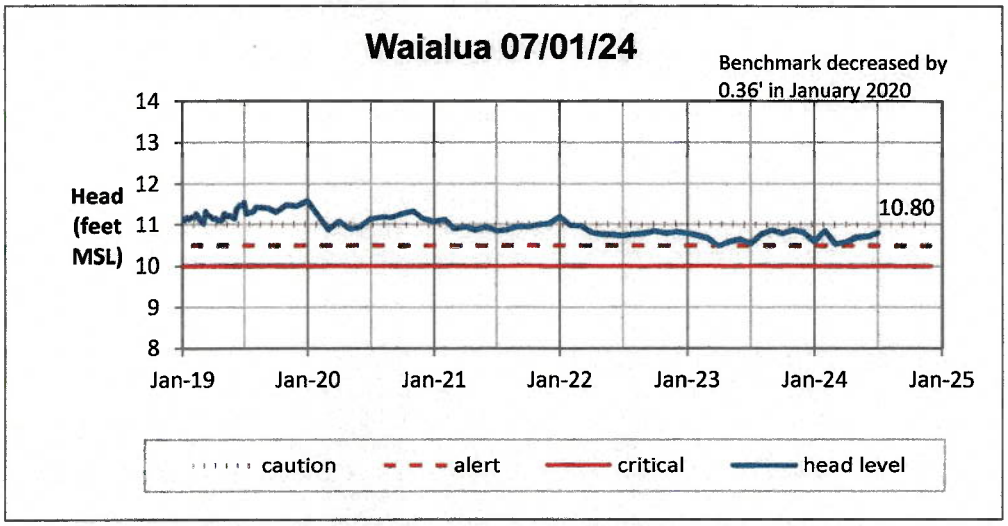
Head Report

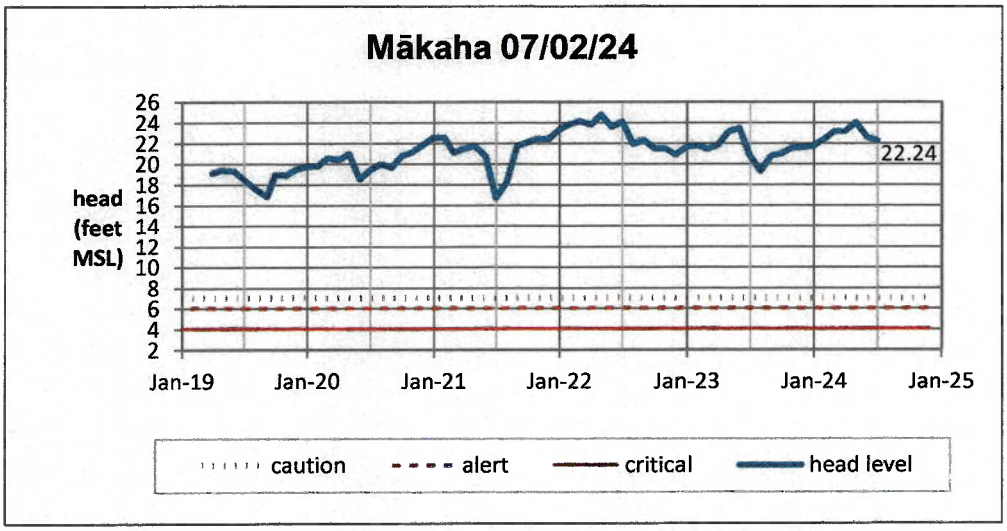

Punalu'u 07/01/24
Benchmark decreased by 0.42' in January 2020
Head (feet MSL)
21
20
19
18
17
16
15
14
13
12
16.52
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

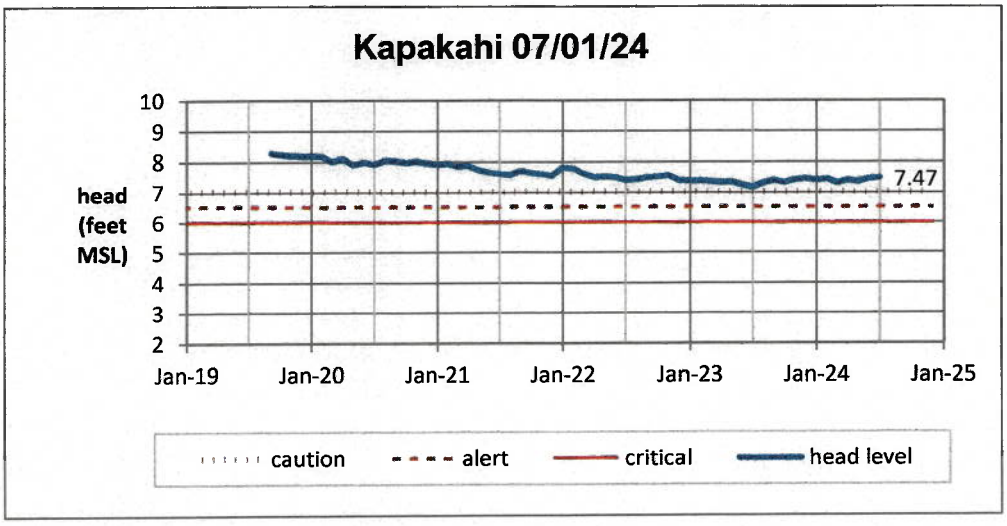

Kaluanui 07/01/24
Benchmark increased by 0.24' in January 2020
Head (feet MSL)
22
21
20
19
18
17
16
15
14
13
12
17.07
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

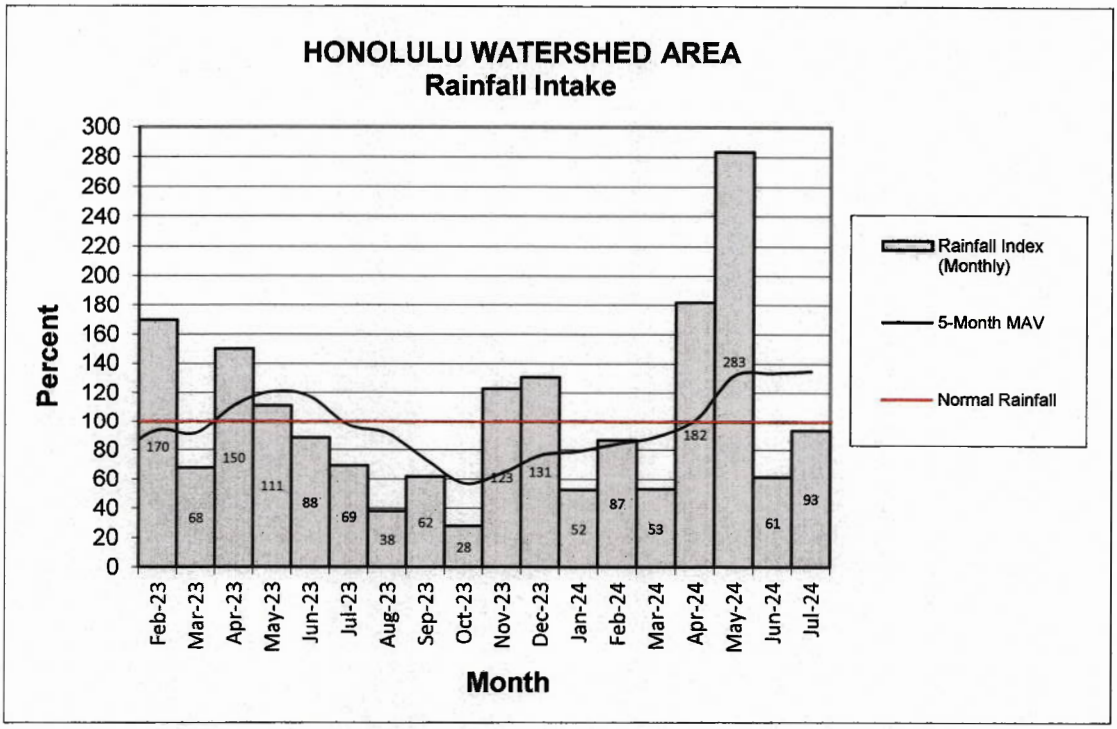

Waihe'e Tunnel 07/03/24
Bulkhead Pressure (psi)
50
45
40
35
30
25
20
15
10
5
0
29.00
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level

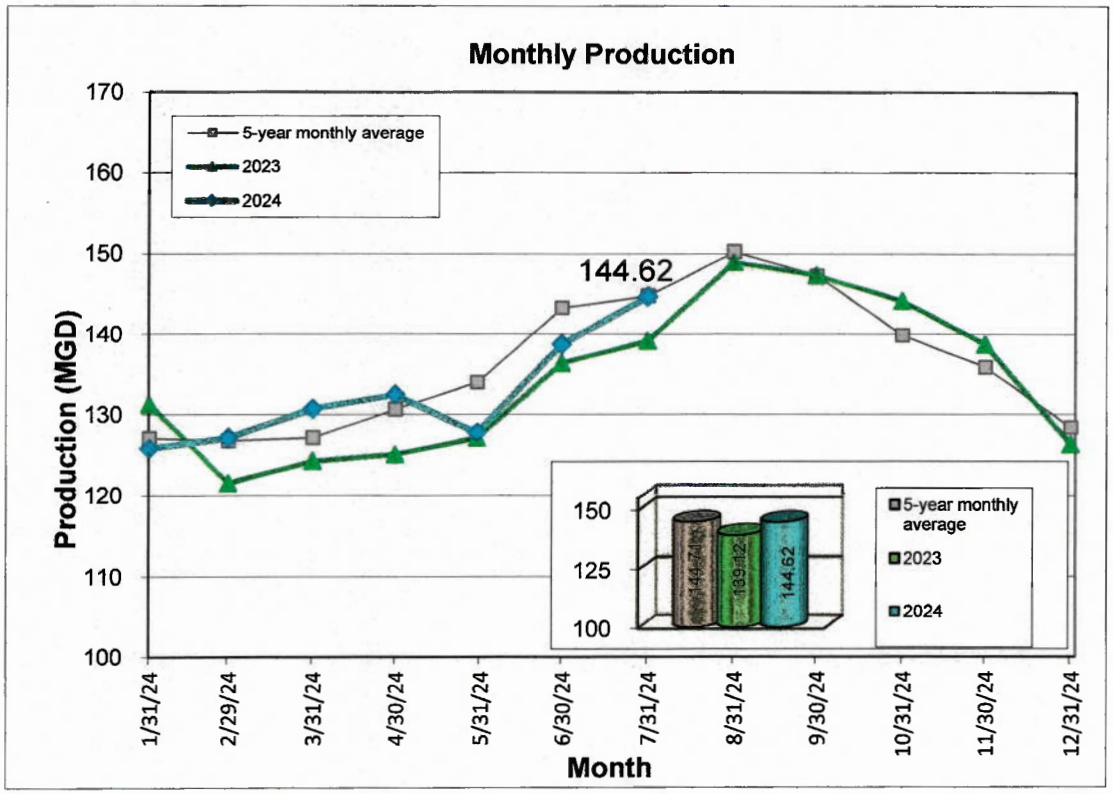
Head Report


Waialua 07/01/24
Benchmark decreased by 0.36' in January 2020
Head (feet MSL)
14
13
12
11
10
9
8
10.80
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level


Mākaha 07/02/24
head (feet MSL)
26
24
22
20
18
16
14
12
10
8
6
4
2
22.24
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level


Kapakahi 07/01/24
head (feet MSL)
10
9
8
7
6
5
4
3
2
7.47
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Jan-25
caution
alert
critical
head level


HONOLULU WATERSHED AREA
Rainfall Intake
Percent
Month
Rainfall Index (Monthly)
5-Month MAV
Normal Rainfall
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
Jul-24
170
68
150
111
88
69
38
62
28
123
131
52
87
53
182
283
61
93


Monthly Production
Production (MGD)
Month
5-year monthly average
2023
2024
144.62
1/31/24
2/29/24
3/31/24
4/30/24
5/31/24
6/30/24
7/31/24
8/31/24
9/30/24
10/31/24
11/30/24
12/31/24

ITEM FOR INFORMATION NO. 4

"August 26, 2024

WATER MAIN REPAIR REPORT FOR JULY 2024

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawai'i 96843

Chair and Members:

Subject: Water Main Repair Report for June 2024

Wayne Tello, Acting Program Administrator, Field Operations Division, will report on water main repair work for the month of July 2024.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION: Wayne Tello, Acting Program Administrator, Field Operations Division, gave the report.

Manager Lau explained that the corrections made to the report are to differentiate a main break, which is out of the BWS's control, and a main leak, which is repaired before it becomes a break. He stated that the original number of main breaks for Fiscal Year 2024 was 409, which was corrected to 337.

Chair Anthony asked if the difference between 409 and 337 was listed as a leak.

Manager Lau responded that the differences were noted as leaks. He shared that in the Points of Interest table, the changes from Fiscal Year 2022 to Fiscal Year 2024 show that the investigators are becoming more efficient, which increases the BWS's ability to find and repair leaks proactively.

Mr. Wayne Tello expressed his appreciation for the equipment provided and updated, which allows his department to work efficiently.

Chair Anthony asked Mr. Tello to clarify what "customer side" means when detecting a leak.

Mr. Tello explained that a leak was found on the customer's pipes, meaning that the BWS does not make the repairs. The BWS notifies the

customer of the leak, and it is the customer's responsibility to have the leak repaired.

Manager Lau added that billing adjustments are made according to what is determined.

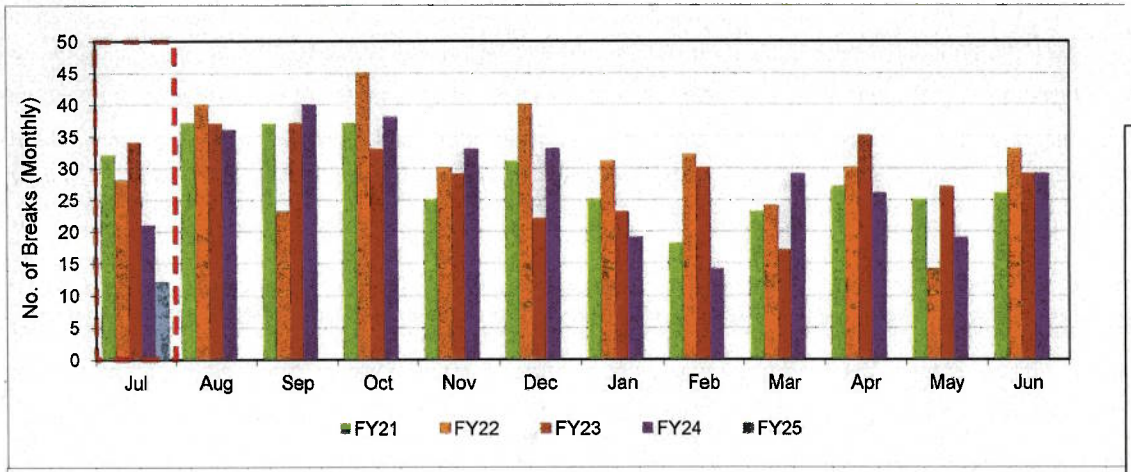
WATER MAIN REPAIR REPORT
for July 2024

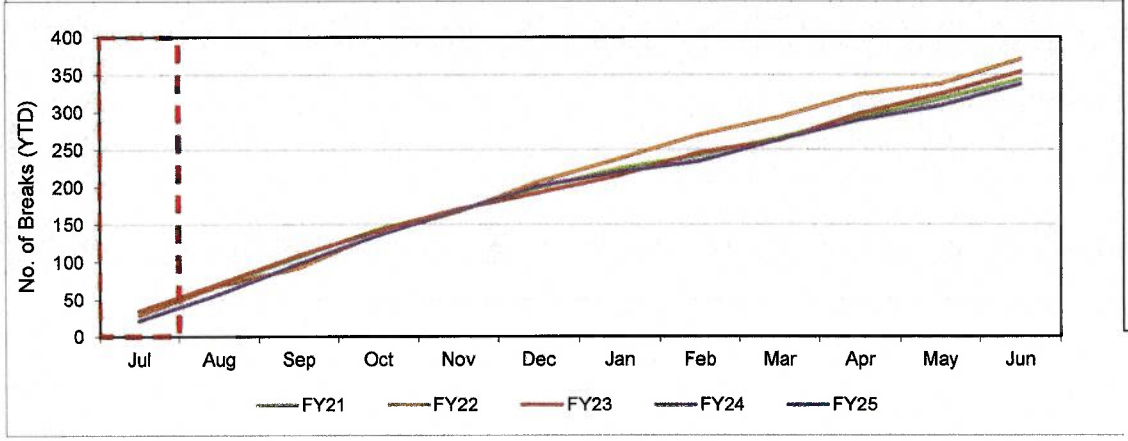
Monthly Main Breaks

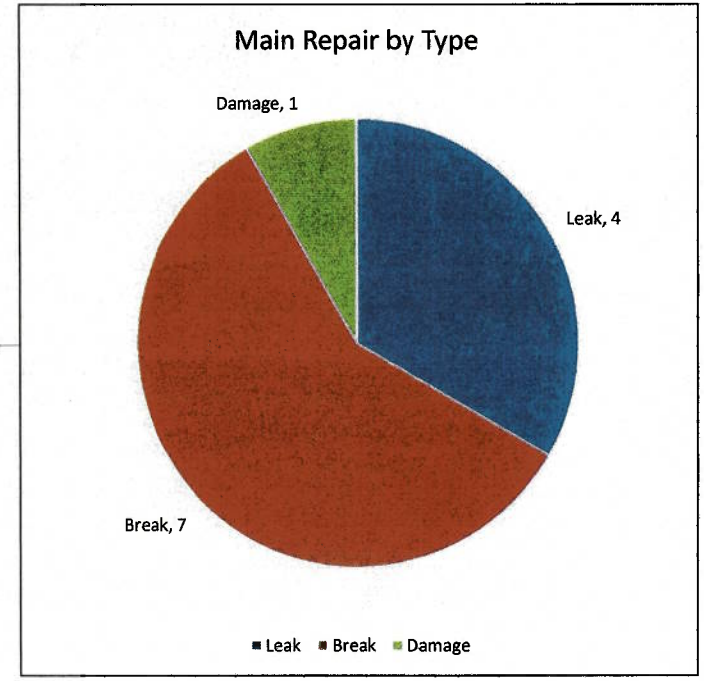
FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2025	12	--	--	--	--	--	--	--	--	--	--	--	12
2024	21	36	40	38	33	33	19	14	29	26	19	29	337
2023	34	37	37	33	29	22	23	30	17	35	27	29	353
2022	28	40	23	45	30	40	31	32	24	30	14	33	370
2021	32	37	37	37	25	31	25	18	23	27	25	26	343

Main Repair by Type

Type	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Leak	4	--	--	--	--	--	--	--	--	--	--	--	4
Break	7	--	--	--	--	--	--	--	--	--	--	--	7
Damage	1	--	--	--	--	--	--	--	--	--	--	--	1
Total	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**







Date	Address	Size (In)	Pipe Type	Date	Address	Size (In)	Pipe Type
7/6/2024	91-1076 Kaunolu St, Ewa Beach	8	CI				
7/6/2024	91-1733 Kikoo St, Ewa Beach	8	DI				
7/7/2024	140 Dowsett Ave, Honolulu	8	CI				
7/8/2024	2464 Kanealii Ave, Honolulu	8	CI				
7/9/2024	66-939 Kuewa Dr, Waialua	6	CI				
7/9/2024	553 Iana St, Kailua	8	AC				
7/9/2024	1968 Makiki Heights Dr, Honolulu	6	CI				
7/11/2024	5414 Kirkwood Pl, Honolulu	6	CI				
7/11/2024	200 Kamani St, Honolulu	8	CI				
7/13/2024	Hamama Falls Trail, Kaneohe	4	DI				
7/14/2024	47-661 Melekula Rd, Kaneohe	6	CI				
7/15/2024	844 9th Ave, Honolulu	6	CI				
7/16/2024	1477 Humuwili Pl, Kailua	8	CI				
7/16/2024	98-432 Ponohana Lp, Aiea	8	CI				
7/19/2024	94-987 Lumihoahu St, Waipahu	8	CI				
7/20/2024	1314 Akele St, Kailua	8	CI				
7/22/2024	1220 Palolo Ave, Honolulu	8	PVC				
7/22/2024	2677 Ipulei Pl, Honolulu	8	CI				
7/30/2024	1154 Gulick Ave, Honolulu	6	CI				
7/31/2024	912 Waiiki St, Honolulu	8	CI				

LEAK DETECTION
for July 2024

POIs Investigated

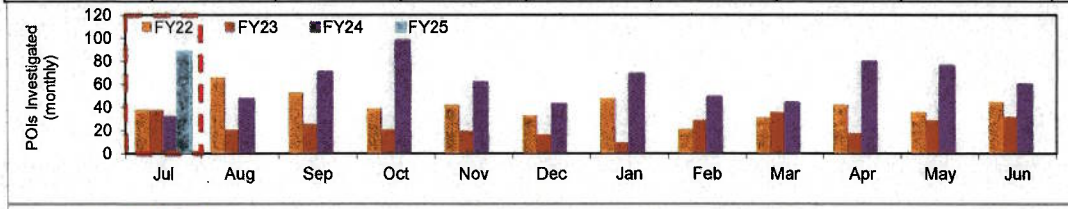
FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2025	**88**	--	--	--	--	--	--	--	--	--	--	--	**88**
2024	31	47	70	97	61	42	68	48	43	79	75	59	720
2023	37	20	25	20	19	16	9	28	35	17	28	31	285
2022	37	65	52	38	41	32	47	20	30	41	35	44	482

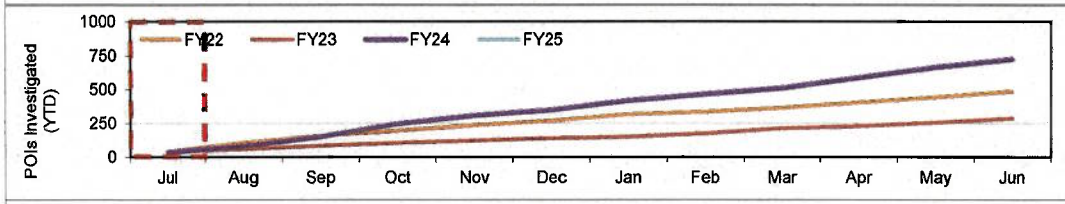
Leaks Found

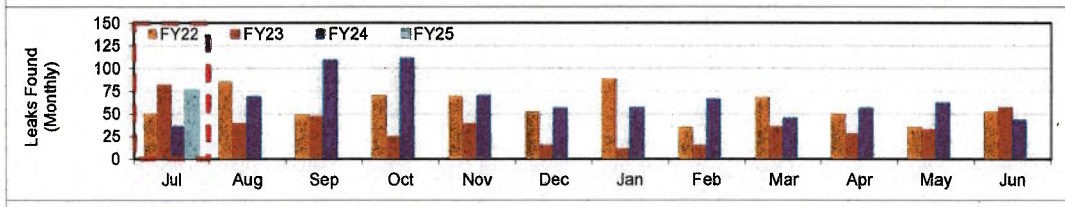
FY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
2025	**76**	--	--	--	--	--	--	--	--	--	--	--	**76**
2024	36	69	109	111	70	56	57	66	45	56	62	43	780
2023	82	40	47	25	39	15	11	15	36	28	33	57	428
2022	50	85	49	70	69	52	88	35	68	50	35	52	703

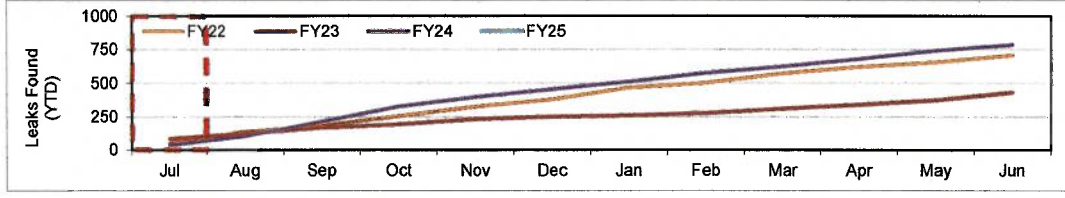
Satellite Leak by Type

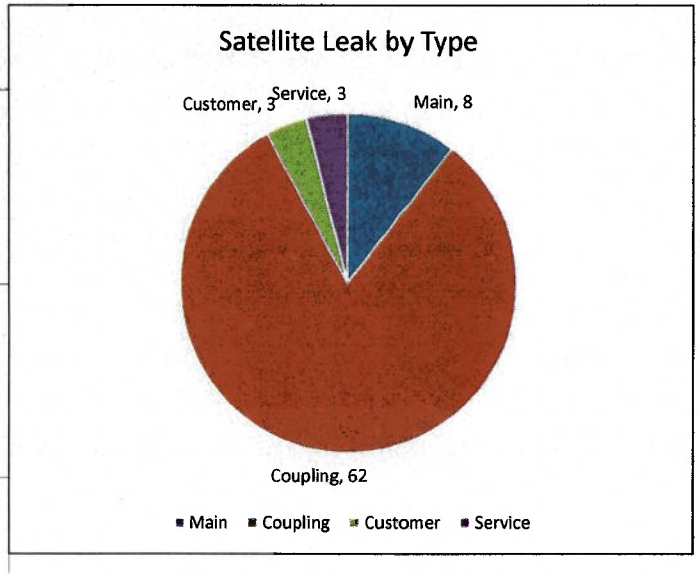
Type	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Main	**8**	--	--	--	--	--	--	--	--	--	--	--	8
Coupling	**62**	--	--	--	--	--	--	--	--	--	--	--	62
Customer	**3**	--	--	--	--	--	--	--	--	--	--	--	3
Service	**3**	--	--	--	--	--	--	--	--	--	--	--	3
Total	**76**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**76**











MOTION TO RECESS INTO EXECUTIVE SESSION

There being no further business, Chair Anthony, at 5:18 PM, called for a motion to adjourn the Open Session. Jonathan Kaneshiro so moved; seconded by Lance Wilhelm and unanimously carried.

Upon unanimous approved motion, the Board recessed into Executive Session Pursuant to [HRS § 92-5 (a)(4)] at 5:19 PM to Consider Issues Pertaining to Matters Posted for Discussion at an Executive Session.

OPEN SESSION

The Board reconvened in Open Session at 6:28 PM.

Upon returning from the Executive Session, Chair Anthony shared that the Board made a decision on Executive Session Action 3 and decided to opt out of the Class Action Settlement and Authorize the Manager and Chief Engineer to submit a Request for Exclusion (Opt-Out) in accordance with the Settlement Agreement(s) associated with MDL No. 2:18-mn-02873, related to the City of Camden et al., v. BASF Corporation, No. 2:24-cv-03174-RMG & the City of Camden et al., v. Tyco Fire Products LP, et al., No. 2:24-cv-02321-RMG.

MOTION TO ADJOURN

There being no further business, Chair Anthony, at 6:31 PM, called for a motion to adjourn the Regular Session. Lance Wilhelm so moved, seconded by Jonathan Kaneshiro, and unanimously carried.

The minutes of the Regular Meeting held on August 26, 2024, are respectfully submitted,

JOY CRUZ-ACHIU

APPROVED:

NĀʻĀLEHU ANTHONY
Chair of the Board

SEP 2 3 2024
Date

THE MINUTES OF THE REGULAR MEETING HELD ON AUGUST 26, 2024, WERE APPROVED AT THE SEPTEMBER 23, 2024, BOARD MEETING			
	AYE	NO	COMMENT
NĀʻĀLEHU ANTHONY	X		
JONATHAN KANESHIRO	X		
KAPUA SPROAT	X		
BRYAN P. ANDAYA	X		
LANCE WILHELM	X		
EDWIN H. SNIFFEN	X		
GENE C. ALBANO	X		