



# Documentation to Amend Drinking Water Health Advisory in Zone D1

Joint Base Pearl Harbor Hickam (JBPHH)  
O‘ahu, Hawai‘i

Interagency Drinking Water System Team  
Zone D1 Removal Action Report  
February 2022

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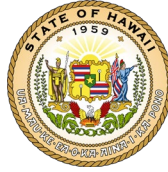
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Interagency Drinking Water System Team  
Zone D1 Removal Action Report  
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**Line of Evidence 0**

**Introduction**

# DOH Checklist to Amend the Public Health Advisory in Flushing Zone D1



## Zone D1 Checklist to Amend the Public Health Advisory initiated November 29, 2021 for Joint Base Pearl Harbor -Hickam Public Water System No. 360 HEER Incident Case No.: 20211128-1848

**Purpose:** This checklist identifies the documentation and review that the Hawaii Department of Health (DOH) conducted to **amend** the Public Health Advisory (Advisory) in each Zone under the *DOH's Guidance on the Approach to Amending the Drinking Water Health Advisory*, dated December 30, 2021. This review was conducted as an oversight role in addition to the review conducted as a part of the Interagency Drinking Water System Team (IDWST).

DOH's priority is to protect the public health and environment of the people of Hawaii. DOH will evaluate the "lines of evidence" that must be met before amending the health advisory and issuing notices that the water can be used for all purposes including drinking. The Navy must also commit to following the long-term monitoring (LTM) of system water quality for this incident under the IDWST Drinking Water Sampling Plan, as amended.

**Background:** A chemical release of petroleum, which is a hazardous substance, entered the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water distribution system and the Red Hill Shaft. This release triggered an

emergency response and DOH issuance of an Advisory on November 29, 2021 for the entire JBPHH Public Water System No. 360. State and Federal Drinking Water (DW) Maximum Contaminant Levels (MCLs) under the Safe Drinking Water Act do not adequately address petroleum contamination of drinking water. DOH has established Environmental Action Levels (EALs) and Incident Specific Parameters (ISPs) to more comprehensively monitor and respond to petroleum contaminated drinking water. Any contaminants that exceed the State and Federal DW MCLs, EALs, or ISPs require additional action prior to amending the Advisory. Satisfaction of the lines of evidence will be achieved by evaluating the data generated during the investigation conducted by the IDWST. The data will be assessed for each Zone of the Drinking Water Distribution System Recovery Plan. All lines of evidence will require documentation.

**DOH Project Screening Levels:** State and Federal Drinking Water MCLs, specified State EALs, and ISPs are considered in development of Project Screening Levels. The actions for the thresholds for each contaminant are listed in *DOH's Guidance on the Approach to Amending the Drinking Water Health Advisory*.

# DOH Checklist to Amend the Public Health Advisory in Flushing Zone D1



## Objective 0 - Introduction to Lines of Evidence Under Evaluation / Document Summary

Reference	Status	Documentation
Tab 0	Complete	DOH Checklist to Amend the Drinking Water Health Advisory.
Tab 0.1	Complete	<ul style="list-style-type: none"> <li>Executive Summary Memo for Zone D1 Removal Action Report</li> <li>Signed statement by the Owner/Operator Representative of the Water System, that asserts that all lines of evidence have been met, including the following statement with a signature: "I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the submitted information is true, accurate, and complete."</li> </ul>

## Objective 1a – Line of Evidence: Reported sources of contamination are isolated and contained.

Incident Specific Criteria - Contamination from **Red Hill Shaft** is isolated from Navy's water distribution system.

Reference	Status	Documentation
Tab 1a.0	Complete	Executive Summary Memo.
Tab 1a.1	Complete	Memorandum for Record documenting that the Red Hill Shaft has been physically disconnected from the NAVFAC system.
Tab 1a.2	Complete	Memo for Record showing SCADA data that Waiawa Shaft is the single source of water for the NAVFAC system since 03 December 2021.
Tab 1a.3	Complete	Photograph of concrete blocking between air gapped isolation flanges.

## Objective 1b – Line of Evidence: The regulated public water system's water quality data is compliant.

Incident Specific Criteria - Data does not exceed Federal DW MCLs, specified State EALs, and ISPs for **Waiawa Shaft (only source of the drinking water)**.

Reference	Status	Documentation
Tab 1b.0	Complete	Executive Summary Memo.
Tab 1b.1	Complete	<ul style="list-style-type: none"> <li>Sample Results for Waiawa Shaft (the source) taken 1/13/2022 Level 4 Validated Laboratory Report for EPA Methods 8260 (VOCs), 8270 (SVOCs), 8015 (TPH-G, TPH-D, TPH-O) plus Tentatively Identified Compounds (TICs)</li> <li>Level 4 Validated Laboratory Report for EPA Methods 8260 (VOCs), 8270 (SVOCs), 8015 (TPH-G, TPH-D, TPH-O) plus Tentatively Identified Compounds (TICs)</li> <li>Sample Results of Waiawa Shaft Entry Point (after treatment) taken 1/11/2022 Level 4 Validated Laboratory Report for Sampling Plan Addendum 1, Table 3a: Distribution Sampling (Step 2b) Summary Drinking Water Analytical Methods, Analytes, Action Levels, and Method Detection Limits</li> <li>Level 4 Validated Laboratory Report for Sampling Plan Addendum 1, Table 3a: Distribution Sampling (Step 2b) Summary Drinking Water Analytical Methods, Analytes, Action Levels, and Method Detection Limits</li> </ul>

## DOH Checklist to Amend the Public Health Advisory in Flushing Zone D1



### Objective 1c – Line of Evidence: No additional contamination through the distribution system is occurring.

Incident Specific Criteria - Cross Connection Control investigation shows distribution system is protected, resulting in no additional sources of contamination.

Reference	Status	Documentation
Tab 1c.0	Complete	Executive Summary Memo.
Tab 1c.1	Complete	<p>Certificate Regarding Cross-Connection Control Review and Confirmation – Zone D1, verifying that building and service connections with petroleum activities are protected from backflow risks with the following documentation:</p> <ul style="list-style-type: none"> <li>• A “gap analysis” of the petroleum related activities versus appropriate device inventory (i.e., inappropriate device, missing Cross-Connection Control protection, untested device, etc.).</li> <li>• A map that includes: All facilities with petroleum activities; locations of existing backflow prevention devices; and Water system infrastructure.</li> <li>• An inventory database: A list of petroleum-related activities and identified appropriate cross connection control (CCC) devices at these activities, as required, i.e., if there was human consumptive use and where cross connection potential or hazard was identified.</li> </ul>
Tab 1c.2	Complete	COMNAVREG HAWAII INSTRUCTION 11330.2D, dated 19 Sep 2016, Backflow Prevention and Cross-Connection Control Program

### Objective 2a – Line of Evidence: Water within the distribution system does not exceed State and Federal DW MCLs, specified State EALs, and

ISPs.

- Zone flushing plan demonstrates entire distribution system is flushed.
- Sample results show the water in distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs. (Guidance Table 2 and Table 3)
- Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.

Reference	Status	Documentation
Tab 2a.0	Complete	Executive Summary Memo.
Tab 2a.1	Complete	<p>Memorandum for the Record of the Distribution System Recovery Plan Addendum – Zone D1 Analysis which includes:</p> <ul style="list-style-type: none"> <li>• Hydraulic model that exhibits and flushing line map(s) and plan to show that the flushing approach will achieve directional flushing.</li> <li>• A one-page high resolution zonal flushing map should be provided.</li> <li>• Narrative of assumptions in the development of their flushing model inclusive of any simulations that they ran.</li> </ul>
Tab 2a.2	Complete	Summary with documentation from Dr. Whelton discussing flushing goals providing validity of volumetric exchange model.

## DOH Checklist to Amend the Public Health Advisory in Flushing Zone D1



### Objective 2a – Line of Evidence: Water within the distribution system does not exceed State and Federal DW MCLs, specified State EALs, and

#### ISPs.

##### Incident Specific Criteria –

- Zone flushing plan demonstrates entire distribution system is flushed.
- Sample results show the water in distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs. (Guidance Table 2 and Table 3)
- Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.

Reference	Status	Documentation
Tab 2a.3	Complete	Identification of consecutive flushing zones and flushing phasing order. Time based contaminant slug model showing possible migration of contaminant from Red Hill Shaft used to identify zones requiring additional volumetric flushing (Hydraulic Model)
Tab 2a.4	Complete	Table showing volumetric goals and recorded flushing volumes that occurred in the field for the distribution system.
Tab 2a.5	Complete	Certification of Water Storage Facilities and Water Source for Zone D1 with Water Storage Tanks S1 and S2 Flushing Report.
Tab 2a.6	Complete	<ul style="list-style-type: none"> <li>• Distribution System Exceedance Investigation Summary and Results.</li> <li>• Drinking Water Distribution System Recovery Plan: Stage 2 Sampling Results for Zone D1, JBPHH.</li> </ul>

### Objective 2b – Line of Evidence: Water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State

#### EALs, and ISPs.

##### Incident Specific Criteria –

- Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.
- Sample Plan includes 72-hour stagnation to account for leaching of contaminants from premise plumbing.
- Sample results show water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Reference	Status	Documentation
Tab 2b.0	Complete	Executive Summary Memo.
Tab 2b.1	Complete	Records of Completed Residential and Non-Residential Flushing Zone D1 with: <ul style="list-style-type: none"> <li>• EDMS Residential Flushing Records Zone D1</li> <li>• EDMS Non-Residential Flushing Records Zone D1</li> <li>• NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022 (for the Distribution System pressure logs during flushing and confirmation that the 30 psi within the distribution system was maintained).</li> </ul>
Tab 2b.2	Complete	Sample Results, Level 2 and Level 4 Validated as required by Sampling Plan Section 6.0, report from EDMS.
Tab 2b.3	Complete	Exceedance Investigation Summary and Results Zone D1.
Tab 2b.4	Complete	Memorandum for Record showing that irrigation flushing is complete.

# DOH Checklist to Amend the Public Health Advisory in Flushing Zone D1



<b>Objective 2b – Line of Evidence: Water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.</b>		
Incident Specific Criteria –		
<ul style="list-style-type: none"> <li>Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.</li> <li>Sample Plan includes 72-hour stagnation to account for leaching of contaminants from premise plumbing.</li> <li>Sample results show water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.</li> </ul>		
Reference	Status	Documentation
Tab 2b.5	Complete	DOH Guidance for Active Irrigation Line Purging and Flushing



February 20, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: ZONE D1 REMOVAL ACTION REPORT

Ref: (a) Drinking Water Sampling Plan, December 2021  
(b) Drinking Water Distribution System Recovery Plan, December 2021  
(c) Single Family Home Flushing Plan Checklist and Standard Operating Procedures, December 23, 2021  
(d) Non-Residential Facility Flushing Plan Checklist and Standard Operating Procedures, January 4, 2022  
(e) DOH's Guidance on the Approach to Amending the Drinking Water Health Advisory, December 30, 2021; HEER Incident Case No.: 20211128-1848  
(f) DOH Checklist to Amend the Drinking Water Health Advisory

Encl: (1) Zone D1 Removal Action Report

1. The enclosed report documents completion of the requirements outlined in references (a) through (f). This is in response to HEER Incident Case No.: 20211128-1848 involving the Joint Base Pearl Harbor Hickam (JBPHH) Public Water System No. 360.

2. On November 20<sup>th</sup>, 2021, a spill of jet fuel, specifically JP-5 jet fuel, occurred at the Red Hill Bulk Fuel Storage Facility in an access tunnel that provides fire suppression and service lines for the facility. The fuel spill was cleaned up. On the 23<sup>rd</sup> of November, Admiral Paparo directed an independent investigation of the spill event and ordered the investigating officer to determine any connection between the 20 November event and the spill that occurred on May 6<sup>th</sup>, 2021. The results of the investigation are pending public release.

On November 27<sup>th</sup>, the Commander, Navy Region Hawaii, RDML Tim Kott, met with the Fleet Logistics Center Commander, who operates The Red Hill Fuel Storage Facility for the Navy. They jointly made the decision to stop Red Hill Tank fuel transfer operations based on the ongoing investigation into the recent spills.

On November 28<sup>th</sup>, the JBPHH HQs and Hawaii Department of Health (HDOH) began receiving phone calls from military residents reporting a chemical or petroleum taste and smell to the water in the Navy's drinking water system. As more calls were received, it became clear that the reports were clustered around neighborhoods fed by the Red Hill Shaft Well. On the evening of the 28<sup>th</sup>, the Navy shut down that well and stood up the Region's Emergency Operations Center to handle the issue. More reports of contaminated water continued to come in over the next 24 hours. On November 29<sup>th</sup>, Admiral Paparo, the senior Navy commander in Hawaii, ordered the establishment of a Joint Crisis Action Team, and the Navy immediately began flushing its potable water distribution system.

On December 8<sup>th</sup>, HDOH issued Directive One which provided requirements for flushing of the Navy Water System. The Navy began working with HDOH and the U.S. Environmental Protection Agency (EPA) to meet the requirements of this directive and resume flushing of the potable water system.

On December 14<sup>th</sup>, HDOH, the U.S. Navy, the U.S. Army and the EPA signed the Joint Drinking Water Sampling Plan. On December 17<sup>th</sup>, the parties established an Interagency Drinking Water System (IDWS) Team to restore safe drinking water to affected JBPHH housing communities. The working group was established to ensure that the agencies were coordinated in actions to restore safe drinking water to Navy water system users and that they had a clear, coordinated source of information as work continued to restore safe drinking water. On the same day, the U.S. Navy, U.S. Army, HDOH, and the EPA members of the IDWS Team jointly signed the Water Distribution System Recovery Plan agreement.

The flushing of the water distribution lines resumed on December 20, 2021. Residential and non-residential facilities were flushed and sampled after the completion of flushing and testing of the distribution system of a specific Zone. This report specifically documents the requirements outlined in references (a) through (f) for Zone D1.

3. The removal action report (RAR) for Zone D1 documents two specific lines of evidence necessary to amend the drinking water health advisory for Zone D1 as provided by HDOH. The two lines of evidence under evaluation included:

- i. Ensure no contamination is entering the water system.
- ii. Ensure no contamination remains in the system and water chemistry concerns are addressed.

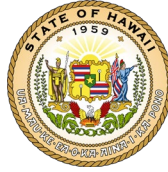
Each line of evidence has several objectives with specific lines of evidence and incident specific criteria required to be met. Achievement of the criteria will be described and supported with documentation in the subsequent sections of the RAR.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAEL.WAYNE.JR. Digitally signed by  
MENO.MICHAEL.WAYNE.JR. 1088310035  
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M. W. Meno  
CAPT, CEC, USN





Interagency Drinking Water System Team  
Zone D1 Removal Action Report  
February 2022

**Line of Evidence 1a**

**All Reported Sources of Contamination Are Isolated and Contained**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination is entering the water system.**

**Objective 1a** - All reported sources of contamination are isolated and contained.

Incident Specific Criteria - Contamination from **Red Hill Shaft** is isolated from Navy's water distribution system.

Lines of Evidence	Completion Status	Outstanding Items
Navy confirmation that Red Hill Shaft is isolated from the Navy's water distribution system.	Complete.	<ul style="list-style-type: none"><li>• None.</li></ul>

February 19, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 1A – ALL REPORTED SOURCES OF CONTAMINATION ARE ISOLATED AND CONTAINED

Encl: (1) 1a.1 Memorandum for Record with Isolation Date  
(2) 1a.2 Summary of Operator Logs and SCADA Data  
(3) 1a.3 Photograph of Concrete Blocking Between Air Gapped Isolation Flanges

1. Enclosures (1), (2), and (3) document completion of Line of Evidence objective 1a, all reported sources of contamination are isolated and contained. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility, and testing has not detected any water quality issues at this source. The Red Hill Shaft discharge pipes were physically re-arranged and encased in concrete on December 24, 2021 as shown in Enclosure (1) and (3), thereby isolating the system as required by Line of Evidence 1a. The Supervisory Control and Data Acquisition (SCADA) data in Enclosure (2) shows the previous statement to be true. All reported sources of contamination are isolated and contained.

2. The Red Hill Shaft pumps are now being used to control the spread of contamination by creating a capture zone in the aquifer by pumping to a 5 million gallons/day Granular Activated Carbon (GAC) system which discharges into the Halawa Stream. The new piping from the pumps to the GAC treatment came from the 20" header where the 20x24 reducer was removed on 24 DEC 2021. A thrust block was poured at this location around the existing blinded wye fitting as shown in Enclosure (3).

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

WETZEL.CHRISTOPHE  
R.JAMES.1540194862

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WETZEL.CHRISTOPHER.JAMES.15  
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C. J. Wetzel  
LT, CEC, USN

04 JANUARY 2022

MEMORANDUM FOR RECORD

SUBJECT: Red Hill Potable Water Pumping Station

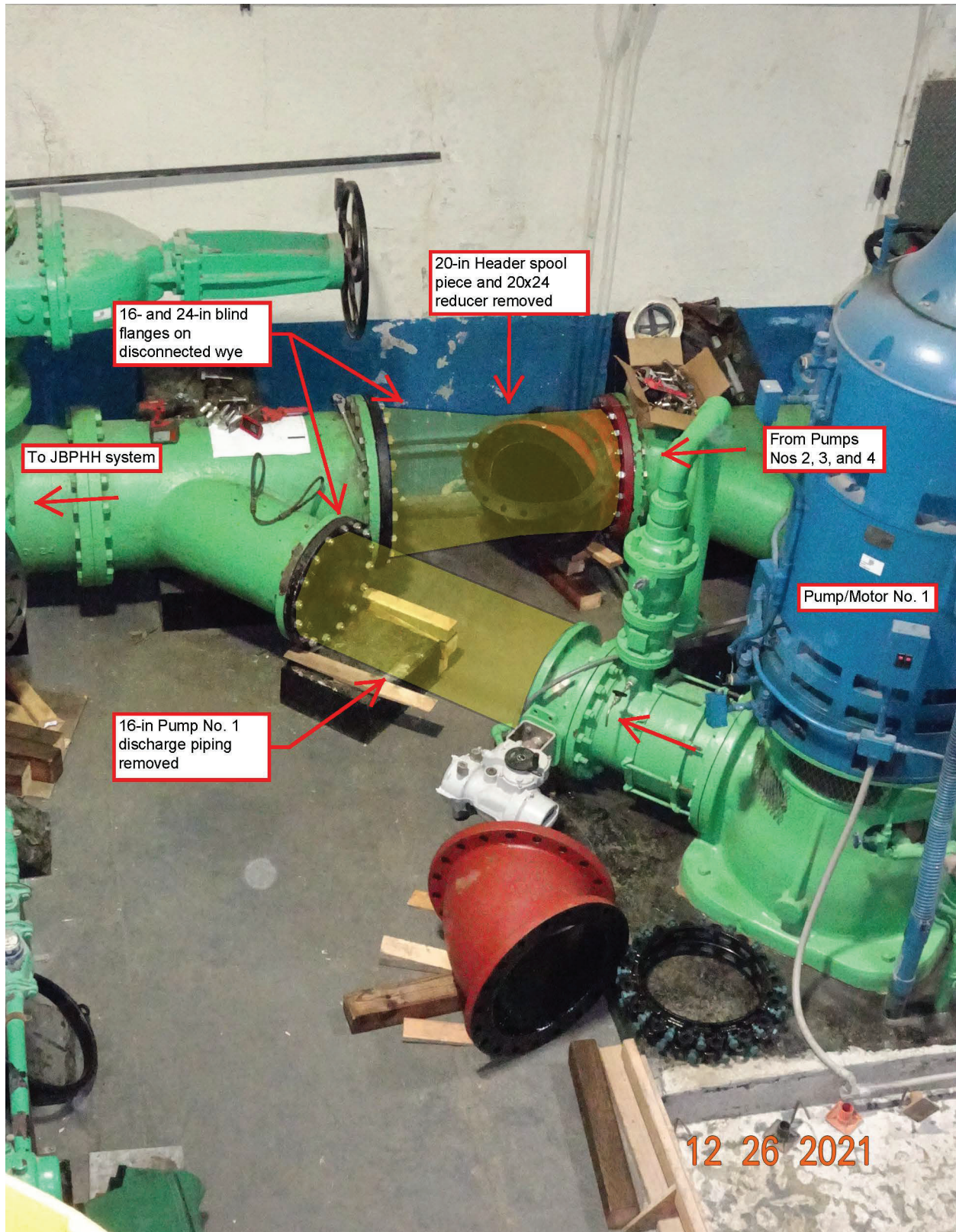
ENC: (1) Red Hill Pump Station Photographs, Post Pump Isolation dated 12/26/2021  
(2) JBPHH Potable Water LOTO Log

1. This Memorandum For Record (MFR) is to document the Red Hill Shaft pump status in relation to the Joint Base Pearl Harbor Hickam Potable Water System.
2. In response to fuel contaminants found in the Red Hill Shaft aquifer/development tunnel, the main Red Hill Pumping Station pumps were secured from the Potable Water system. On 3 December 2021, all four Red Hill pumps were electrically Locked Out, Tagged Out (LOTO), see Enclosure (2). (Note: Pump #1 was LOTO on 10 June 2020 due to an unrelated pump issue, and is still out of service, LOTO.) After initially being shut down operationally, and LOTO electrically, the Red Hill pumps were physically isolated from the Potable Water system on 24 December 2021.
3. Physical isolation was performed with in-house NAVFAC forces, with a completion date of 24 December 2022. This work was performed by isolating the system from the pumps at the "wye" fitting adjacent to Red Hill Pump #1. The wye fitting is shown on Enclosure (1). A blind flange was placed on the main header and the wye branch.
4. The 24" blind flange on the main header physically air-gapped and isolated Red Hill pumps #2, #3, and #4. The 16" blind flange in the wye branch physically air-gapped and isolated Red Hill pump #1. This work is shown on Enclosure 1.
5. The work the NAVFAC in-house forces performed removed any source or pathway from the Red Hill aquifer to the JBPHH Potable Water system.

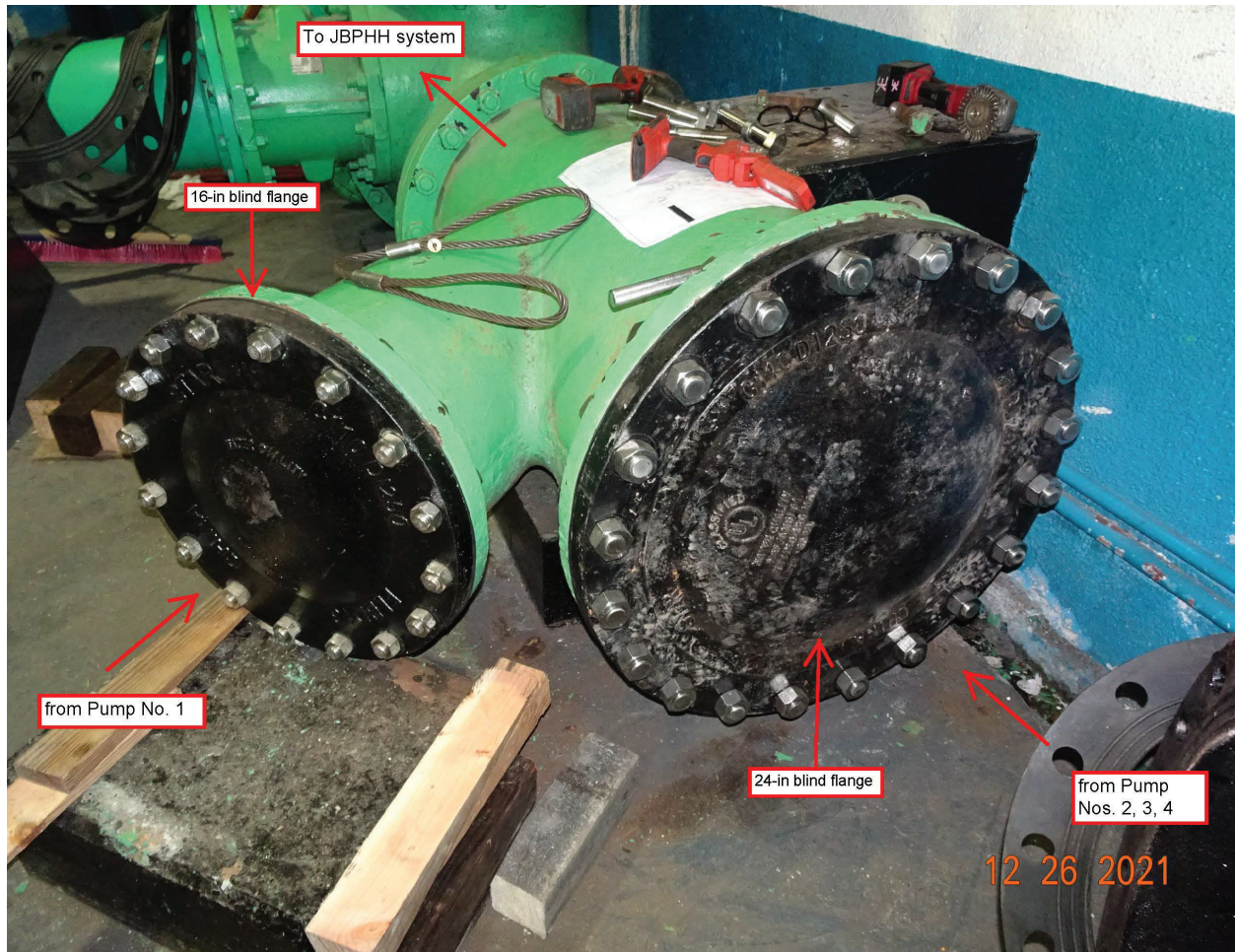
MITCHELL.JEREMY.W.1395400700  
J. MITCHELL  
Deputy Public Works Officer  
Joint Base Pearl Harbor Hickam

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Date: 2022.01.04 07:56:02 -10'00'











# NAVFAC Hawaii - Potable Water Utilities Lock Out Tag Out (LOTO) Form



Locked Out		Back in Service		Location	Circuit / Equipment being LOTO	Reason for LOTO	Lock No.	Tag No.	Authorized Employee
Date	Time	Date	Time						
18 MAR 20	0930			REDHILL	MP#1	Pump overhaul		010	Dykky
5 JUN 20		20 MAR 21	1200	WAIANUA	CD #20	FAULT IN OVERHAUL		1	
10 JUN 20	0900			REDHILL	PUMP CONTROL MP#1	PUMP OVERHAUL		011	Dykky
10 JUN 20	0900			REDHILL	NCC MP#1	PUMP OVERHAUL		012	Dykky
10 JUN 20	0945			WAIANUA	CD #40	FAULT-PUMP CONTROLS		2	AN
10 MAY 21				HALANUA	NCC#1	MOTOR FAULT		3	AN
2 JUN 21	0800			WAIANUA	CD#80	FAULT PUMP CONTROLS		5	AN
2 JUN 21	0800	30 JUN 21	2030	WAIANUA	CD#100	HECO OUTAGE		4	AN
2 JUN 21	0900			HALANUA	NCC#2	PUMP REMOVED		6	AN
30 JUN 21	2330	7 JUL 21	1900	WAIANUA	CD#10	FAIL TO CLOSE		8	AN
19 JUL 21	0745	19 JUN	0900	HALANUA	EXHAUST FAN	REPLACE OIL			DS
17 NOV 21	1230			HALANUA	PUMP #1	PUMP FAIL			AN
17 NOV 21	1230			WAIANUA	PUMP #2	MOTOR FAIL			AN
30 DEC 21	0925			REDHILL	NCC MP#2	COMPRESSOR INTERFERE WATER IN WELL			AN



[illegible]



February 10, 2022

## SUMMARY OF OPERATOR LOGS AND SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) DATA

1. OBJECTIVE: Provide a description of water sources that supplied the Joint Base Pearl Harbor Hickam (JBPHH) potable water system (system) prior-to and after the fuel contamination incident that occurred in late November 2021.

### 2. BACKGROUND:

2.1. Portions of the Navy water distribution system serving JBPHH and surrounding areas were exposed to low levels of fuel contamination with initial indications in the form of smell reports occurring on or about 28 November 2021.

2.2. Prior to the aquifer contamination incident, water users connected to the Navy's system were supplied by three Navy owned water sources, Red Hill Shaft, Aiea/Halawa Shaft and Waiawa Shaft. In the time period prior to the incident, Waiawa Shaft was the main water source supplying water to the JBPHH system with at least one pump operating full time (100%). A single Red Hill Shaft pump was operated intermittently as a secondary source to the system. The Aiea/Halawa shaft was not being operated due to concerns over high chloride concentrations caused by saltwater intrusion into the aquifer.

2.3. On the evening of 28 November 2021, the Red Hill Shaft was secured and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on 28 November 2021 but was shut down on 03 December 2021 to prevent westward contaminant migration in the aquifer.

2.4. Since 03 December 2021, Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility and testing has not found any water quality issues at this source.

3. DATA INTERPERETATION: The Supervisory Control and Data Acquisition (SCADA) data provided in reference (a) includes tabular and graphical depictions of flow from the three source pump stations, aquifer water surface elevations above mean sea level (MSL) and the water level in the 6 million gallon (MG) S1 and S2 water storage tanks. The data was provided as a daily average (i.e. data was averaged over the 24 hours of each day from 00:00 to 23:59) and ranges from 01 November 2021 to 08 January 2022.

3.1 WAIAWA SHAFT/PUMP STATION: Prior to 28 November, The Waiawa Pump Station (PS) was supplying an average of 16.6 million gallons per day (MGD) of potable water to the system. After 28 November, demand reductions from turning off irrigation and smaller residential demand reduced the water supplied by the Waiawa PS to an average of 15.5 MGD. This was 76% of the 22 MGD total system demand prior to 28 November 2021.

There was an inverse correlation between the aquifer water surface elevation and water pumped out of the aquifer. When Waiawa PS was pumping between 16 and 18 MGD, the aquifer water surface elevation dropped to between 8.0 and 10.0 feet MSL. When pumping was reduced between 15 and 16 MGD, the aquifer water surface was raised to between 15.0 and 17.0 feet

above MSL. See Figure 1 below for a graphical depiction of the daily average aquifer water surface elevation and pumps flows from Waiawa Shaft.

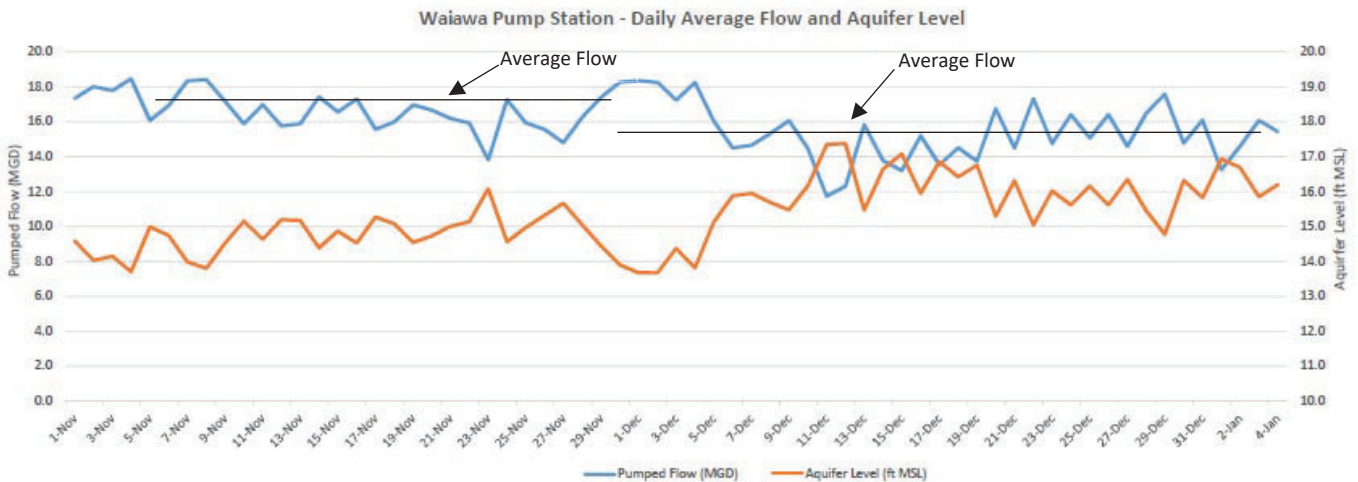


Figure 1. Waiawa Shaft Daily Average Flows and Aquifer Water Surface Elevation

**3.2 RED HILL SHAFT/PUMP STATION:** Prior to being shut down on 28 November 2021, the Red Hill PS was supplying an average of 5.3 MGD to the system. The represented 24% of the 22 MGD total system demand. As shown in Figure 2, the Red Hill Pump Station has not been operated since 28 November 2021.

Since pumping ceased, the aquifer water surface elevation has raised from approximately 2 ft MSL to almost 6 ft MSL

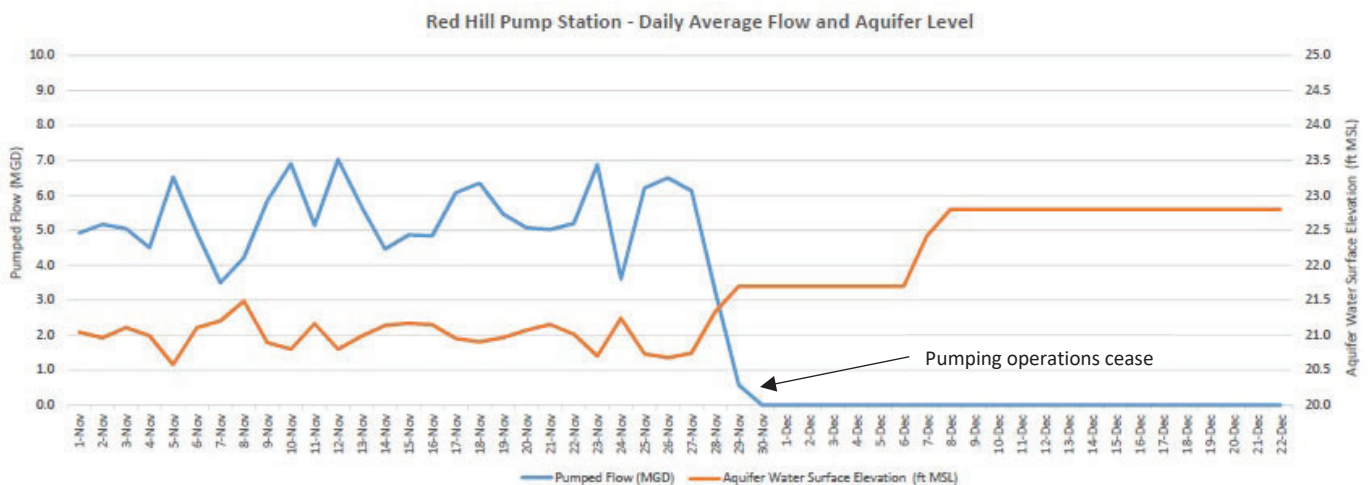


Figure 2. Red Hill Shaft Daily Average Flows and Aquifer Water Surface Elevation

**3.3 HALAWA/AIEA SHAFT/PUMP STATION:** Halawa Shaft was briefly operated from 28 November to 03 December 2021. The reasons for shutdown are as follows:

1. Demand reductions made it so that Waiawa Shaft could supply 100% of the water to the system,

2. there were concerns over westward plume migration from Red Hill if Halawa remained active,
3. water system operators had advised that high chloride concentrations in the Halawa/Aiea Shaft had caused water quality problems in the past.

The aquifer water surface elevation was around 12.0 ft MSL prior to turning the pumps on at the Halawa/Aiea PS. After the pumping ceased, the aquifer recovered to around 12.8 ft MSL.

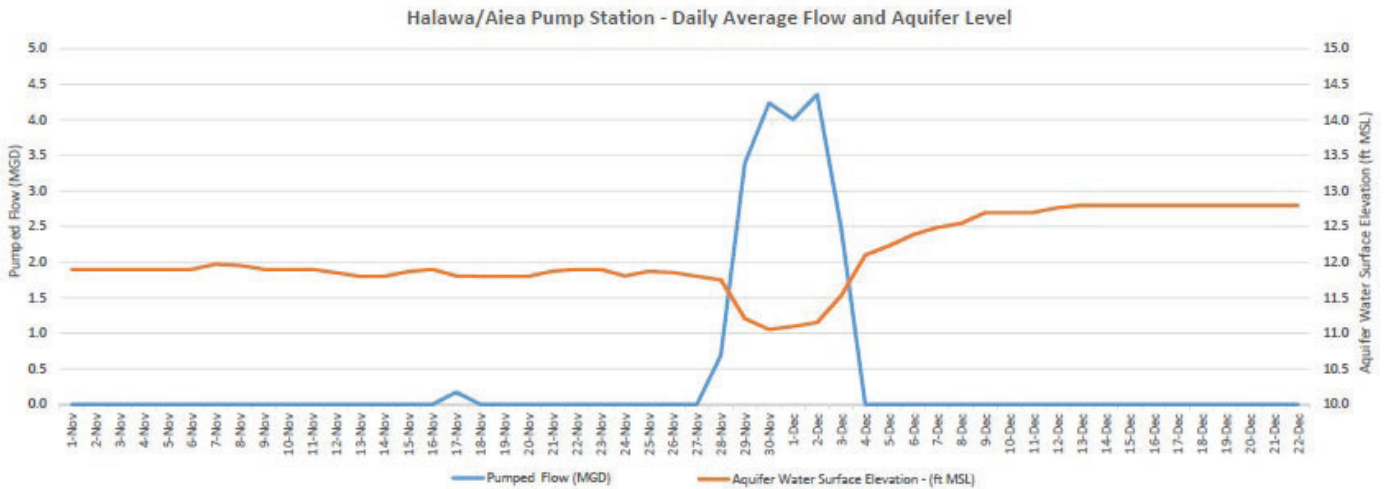
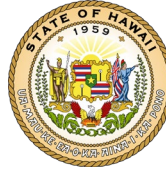


Figure 2. Halawa/Aiea Shaft Daily Average Flows and Aquifer Water Surface Elevation

**Photograph of Concrete Blocking Between  
Air-gapped Isolation Flange**







Interagency Drinking Water System Team  
Zone D1 Removal Action Report  
February 2022

**Line of Evidence 1b**

**Regulated Public Water System's Water Quality Data is  
Compliant**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination is entering the water system.**

**Objective 1b** - The regulated public water system's water quality data is compliant.

Incident Specific Criteria - Data does not exceed Federal DW MCLs, specified State EALs, and ISPs for **Waiawa Shaft**.

Lines of Evidence *	Completion Status	Outstanding Items
Date Sample Taken at Step 0 of the Sampling Plan Addendum 1	Complete	<ul style="list-style-type: none"><li>None</li></ul>
Date Sample Taken at Entry Point to Distribution	Complete	<ul style="list-style-type: none"><li>None</li></ul>

February 17, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 1B – THE REGULATED PUBLIC WATER SYSTEM’S WATER QUALITY IS COMPLIANT

Encl: (1) 1b.1 Source Water and Entry Point of Distribution Sample

1. Enclosure (1) documents completion of Line of Evidence 1b, the regulated public water system’s water quality is compliant. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility, and testing has not detected any water quality issues at this source.
2. On January 11, 2022, water from the Waiawa shaft was sampled at the entry point to the distribution system (EPD). The results of the analysis are presented in Enclosure (1), Field Sample ID 20111-WS-ZT01. On January 13, 2022, additional samples were taken at the Waiawa shaft source. The results of these samples are also presented in Enclosure (1), Field Sample IDs 220113-WS-ZT01 and 220113-WS-ZT03. This data shows that the water from the Waiawa shaft does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters, and the regulated public water system’s water quality is complaint.
3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

RODRIGUEZ.ALBERTO  
.MAURICIO.13963161  
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A. M. Rodriguez  
LT, CEC, USN

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1b.1 Source Water and Entry Point of Distribution Sample

Well Shaft Sampling

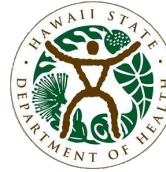
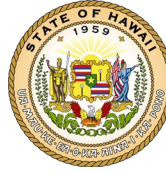
Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

	70	70	70	70	70	70	70	70	EPD	Shaft	Shaft
1,2,4-Trichlorobenzene									--	0.0930 U	--
1,2-Dichlorobenzene	10	10	600	600	600	600	600	600	--	0.0520 U	--
1,3-Dichlorobenzene	None	None	None	None	None	None	None	None	--	0.0410 U	--
1,4-Dichlorobenzene	5	5	75	75	75	75	75	75	--	0.0410 U	--
1-Methylnaphthalene	2.1	10	None	None	None	None	None	None	0.00801 U	--	0.0190 U
2,4,5-Trichlorophenol	None	None	None	None	None	None	None	None	--	0.100 U	--
2,4,6-Trichlorophenol	None	None	None	None	None	None	None	None	--	0.100 U	--
2,4-Dichlorophenol	None	None	None	None	None	None	None	None	--	0.210 U	--
2,4-Dimethylphenol	None	None	None	None	None	None	None	None	--	0.170 U	--
2,4-Dinitrophenol	None	None	None	None	None	None	None	None	--	1.70 U	--
2,4-Dinitrotoluene	None	None	None	None	None	None	None	None	--	0.100 U	--
2,6-Dinitrotoluene	None	None	None	None	None	None	None	None	--	0.100 U	--
2-Chloronaphthalene	None	None	None	None	None	None	None	None	--	0.0720 U	--
2-Chlorophenol	None	None	None	None	None	None	None	None	--	0.0520 U	--
2-Ethylhexyl adipate	None	None	None	None	None	None	None	None	0.00962 U	--	--
2-Methylnaphthalene	4.7	10	None	None	None	None	None	None	0.00904 U	--	0.0190 U
2-Methylphenol (o-Cresol)	None	None	None	None	None	None	None	None	--	0.0520 U	--
2-Nitroaniline	None	None	None	None	None	None	None	None	--	0.100 U	--
3,3'-Dichlorobenzidine	None	None	None	None	None	None	None	None	--	0.270 U	--
3-Nitroaniline	None	None	None	None	None	None	None	None	--	0.170 U	--
4,6-Dinitro-2-methylphenol	None	None	None	None	None	None	None	None	--	0.570 U	--
4-Bromophenyl phenyl ether	None	None	None	None	None	None	None	None	--	0.0620 U	--
4-Chloro-3-methylphenol	None	None	None	None	None	None	None	None	--	0.130 U	--
4-Chloroaniline	None	None	None	None	None	None	None	None	--	0.610 U	--
4-Chlorophenyl phenyl ether	None	None	None	None	None	None	None	None	--	0.0520 U	--
4-Nitroaniline	None	None	None	None	None	None	None	None	--	0.220 U	--
4-Nitrophenol	None	None	None	None	None	None	None	None	--	1.80 U	--
Acenaphthene	None	None	None	None	None	None	None	None	--	0.0520 U	--
Acenaphthylene	None	None	None	None	None	None	None	None	--	0.0620 U	--
Alachlor	None	None	None	None	None	None	None	None	0.0110 U	--	0.0480 U
Anthracene	None	None	None	None	None	None	None	None	--	0.0520 U	--
Atrazine	None	None	None	None	None	None	None	None	0.00734 U	--	0.0290 U
Benzo(a)anthracene	None	None	None	None	None	None	None	None	--	0.0520 U	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.2	0.2	0.2	0.2	0.0117 UJ	0.0410 U	0.00960 U
Benzo(b)fluoranthene	None	None	None	None	None	None	None	None	--	0.0410 U	--
Benzo(g,h,i)perylene	None	None	None	None	None	None	None	None	--	0.0410 U	--
Benzo(k)fluoranthene	None	None	None	None	None	None	None	None	--	0.0520 U	--
Benzyl butyl phthalate	None	None	None	None	None	None	None	None	--	0.280 U	--
Bis(2-chloroethoxy)methane	None	None	None	None	None	None	None	None	--	0.0520 U	--
Bis(2-chloroethyl) ether (2-Chloroethyl ether)	None	None	None	None	None	None	None	None	--	0.0310 U	--
Bis(2-ethylhexyl)phthalate	3	3	6	6	6	6	6	6	0.437 U	0.770 U	0.580 U
Carbazole	None	None	None	None	None	None	None	None	--	0.100 U	--
Chlordane	None	None	None	None	None	None	None	None	0.0669 U	--	0.0320 U
Chrysene	None	None	None	None	None	None	None	None	--	0.0410 U	--







Interagency Drinking Water System Team  
Zone D1 Removal Action Report  
February 2022

**Line of Evidence 1c**

**No Additional Contamination through the Distribution System is Occurring**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination is entering the water system.**

**Objective 1c** - No additional contamination through the distribution system is occurring.

Incident Specific Criteria - Cross Connection Control investigation shows distribution system is protected, resulting in no additional sources of contamination.

Lines of Evidence	Completion Status	Outstanding Items
No contamination of the distribution system is occurring from cross-connections with other petroleum sources during this incident	Complete	<ul style="list-style-type: none"><li>• None.</li></ul>
Cross Connection Control/Backflow Program-related documents	Complete	<ul style="list-style-type: none"><li>• None.</li></ul>

February 19, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 1C – NO ADDITIONAL  
CONTAMINATION THROUGH THE DISTRIBUTION SYSTEM IS OCCURRING

Encl: (1) 1c.1 Certification of Inventory and Petroleum Facility Locations with Associated  
Backflow Preventers.  
(2) 1c.2 Backflow Prevention and Cross-Connection Control Program Instruction

1. Enclosures (1) and (2) document completion of Line of Evidence 1c, no additional contamination through the distribution system is occurring. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility, and testing has not detected any water quality issues at this source.

2. Enclosure (1) identifies all water service connections where petroleum activities exist and documents adequate backflow prevention devices installed at those petroleum service activities. Enclosure (2) provides the governing instructions for backflow prevention devices referenced in Enclosure (1). This data shows that no additional contamination through the water distribution system is occurring.

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

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A. M. Rodriguez  
LT, CEC, USN



**DEPARTMENT OF THE NAVY**  
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND, HAWAII  
400 MARSHALL ROAD  
JBPHH, HAWAII 96860-3139

11000  
Ser PWO/0084  
February 16, 2022

Director of the State of Hawaii  
Department of Health (DOH)

Dear DOH Director:

SUBJECT: CERTIFICATE REGARDING CROSS CONNECTION CONTROL REVIEW  
AND CONFIRMATION – ZONE D1

Enclosure: [1] ZONE D1: POL Activities Backflow Prevention Devices  
[2] ZONE D1: POL Activities Map

On behalf of the United States Department of the Navy, operator of the Joint Base Pearl Harbor-Hickam Public Water System (PWS ID No. 360 Water System), and in connection with and pursuant to the removal action required by the DOH Hazard Evaluation and Emergency Response Office Incident Case No. 20211128-1848, the undersigned certifies that the Navy has made all necessary inquiry into their Water System and represents and warrants as set forth below.

All service connections where petroleum activities exist in the Water System, **Zone D1**, are identified in Enclosure [1], “Zone D1: POL Activities Backflow Prevention Devices.” Petroleum activities include, but are not limited to, operating or having gas stations, fuel storage, facilities with aboveground or underground storage tanks (>100-gallon capacity), fuel transfer, motor pools, vehicle maintenance facilities, fuel recovery pits, waste oil collection facilities or systems.

All service connections where petroleum activities exist, as identified in Enclosure [1] have adequate backflow protection as recommended by and in accordance with COMNAVREGHIINST 11330.2D, BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL PROGRAM. Adequate backflow protection includes installation of devices appropriate to the identified hazard condition, correct design and installation of the device, timely testing by a certified tester, and regular maintenance/repair/replacement.

All facilities identified with adequate backflow protection have had their assemblies tested by a DOH-approved certified tester in the past year in accordance with Hawaii Administrative Rules, Title 11-21-8(b) Maintenance requirements.

The Navy has committed to the funding and performance in FY2022 of a comprehensive cross connection control survey of the entire JBPHH water system per the December 2021 AH Engineers & Scientists Water Quality CAT Memorandum.

SUBJECT: CERTIFICATE REGARDING CROSS CONNECTION CONTROL REVIEW  
AND CONFIRMATION – ZONE D1

The undersigned has due authority to deliver to DOH this Certification on behalf of the Navy.

Sincerely,

HARMEYER.RANDALL.E  
RNEST.1186692663

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Date: 2022.02.16 12:15:20 -10'00'

R. E. HARMEYER  
Captain, CEC, U.S. Navy  
Public Works Officer  
By Direction of the  
Commanding Officer



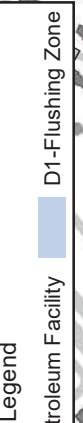
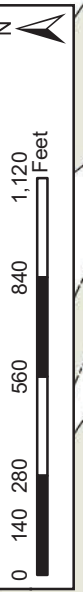
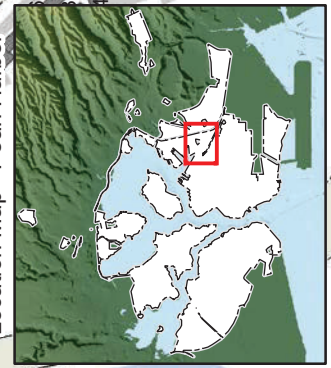
## Enclosure [1] - ZONE D1: POL Activities Backflow Prevention Devices

POL Activities Backflow Prevention Devices										Zone: D1	
ASSET NAME	Location (Bldg. #)	Description of petroleum -related activity	BFP Manufacturer	BFP Model	BFP Size	Serial # or VIN #	Reference Location	Installation Date or In Service Date	Changed (Replacement) Date	Last Tested Date	Last Repaired Date
SA-FWO 11101	229	DRUMS A-1 / 1,100(20@55-GAL drums average), New and used POL	FEBCO	880	4"	9701241358	BLDG 229	2/1/1995	N/A	3/17/2021	N/A
NO BFP only 1 hose bib w/vacuum breaker	553	DRUMS A-3 / 3,850(70@55-GAL drums average), USED POL 530(2@265-GAL polytanks) used cooking oil	N/A	N/A	N/A	N/A	BLDG 553	N/A	N/A	N/A	N/A
SA-FWR 926	926	AST NS-926 / 120 GAL DIESEL	WATTS	909	4"	200999	BLDG 926	1/1/2000	N/A	6/2/2021	N/A
SA-FWO 9911	1396	AST C-20 / 1000 GAL DIESEL, AST C-20A / 75 GAL DIESEL, AST C-20B / 86 GAL DIESEL	WATTS	909	3/4"	35634	BLDG 1396	32874	N/A	44252	N/A
SA-FWO 99111	1396	AST NS-1634-SG / 260 GAL DIESEL	WATTS	909	3/4"	50010	BLDG 1396	44302	N/A	44302	N/A
SA-FWO 12611	1634	AST NS-1634-SG / 260 GAL DIESEL	WATTS	957	3"	SC-2928	BLDG 1492	1/1/1985	N/A	2/25/2021	N/A
SA-FWO 126111	1634	AST NS-1634-SG / 260 GAL DIESEL	WATTS	957	3"	SD-0730	BLDG 1492	9/5/2018	N/A	2/22/2021	N/A
SA-FWO 791	1540	AST C-30 / 150 GAL DIESEL	WATTS	909	3/4"	523398	BLDG 1540	1/1/2001	N/A	2/25/2021	N/A
SA-FWO 9011	1582	AST C-19 / 250 GAL DIESEL	WATTS	909	1-1/2"	440328	BLDG 1582	1/1/2011	N/A	2/23/2021	N/A
SA-FWO 12874	1582	AST C-19 / 250 GAL DIESEL	WATTS	909	3/4"	628670	BLDG 1582	1/1/2000	N/A	3/3/2021	N/A
SA-FWO 1192	1623	AST NS-1623 / 1000 GAL DIESEL	WILKINS	375	4"	3006	BLDG 1623	1/1/1992	N/A	3/1/2021	N/A
NO BFP only 1 hose bib w/vacuum breaker	1492	AST NS-1634-SG / 260 GAL DIESEL	N/A	N/A	N/A	N/A	BLDG 1634	N/A	N/A	N/A	N/A

# Enclosure [2] – ZONE D1: POL Activities Map

## D1 Flushing Zone Petroleum Facilities

Location Map - Pearl Harbor







DEPARTMENT OF THE NAVY

COMMANDER  
NAVY REGION HAWAII  
850 TICONDEROGA ST STE 110  
JBPHH HI 96860-5101

COMNAVREGHIINST 11330.2D

N4

19 Sep 2016

COMNAVREG HAWAII INSTRUCTION 11330.2D

From: Commander, Navy Region Hawaii

Subj: BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL PROGRAM

Ref: (a) Recommended Practice for Backflow Prevention and Cross-Connection Control, (AWWA Manual M14), American Water Works Association  
(b) MIL-HDBK-I 005/7, Military Handbook Water Supply Systems  
(c) State of Hawaii, Department of Health, Administrative Rules Title 11, Chapter 21, Cross-Connection and Backflow Control  
(d) NAVFACINST 11330.11E  
(e) Manual of Cross-Connection Control, Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California  
(f) NAVFAC MO-210, Maintenance and Operation of Water Supply, Treatment, and Distribution Systems

1. Purpose. To supplement current Navy directives pertaining to the protection of the Base potable water supply.

2. Cancellation. COMNAVREGHIINST 11330.2C.

3. Definitions. References (a) through (c) define technical terms used herein as follows:

a. Backflow. The reversal of the normal flow of water caused by either backpressure or back-siphonage.

b. Back-pressure. The flow of water or other liquids, mixtures or substances under pressure into the distribution pipes of a potable water supply system from any source or sources other than the intended source.

c. Back-siphonage. The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.

d. Backflow Preventer. A device or means designated to prevent backflow. These include:

(1) Air Gap. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of said vessel. An approved air-gap must be at least double the diameter of the supply pipe, measured vertically, above the top of the overflow rim of the vessel, and in no case less than six inches.

(2) Reduced Pressure Principle Device. An approved assembly of two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure relief valve located between the check valves, as described in reference (b) and specified in reference (d).

(3) Double Check Valve Assembly. An approved assembly of two independently operating approved check valves with tightly closing shut-off valves on each end of the check valves, plus properly located test cocks for the testing of each check valve.

(4) Atmospheric Vacuum Breaker. A device designed to not subject to static line pressure and contains a check valve and an air-let valve.

(5) Pressure Vacuum Breaker. A device that is designed to operate under conditions of static line pressure and contains one or two independently operating, spring-loaded air-inlet valves located on the discharge side of the check valve (or valves), plus properly located test cocks, and tightly closing shut-off valves.

e. Certified Tester. A certified tester means three classes of certified testers:

(1) A limited tester - A person trained and qualified to perform periodic testing, inspection, and repairs on the specific devices contained within a specific plant or institution. This person is usually an employee of the plant or institution and assigned the duty of taking care of the backflow prevention equipment as part of his or her overall plant duties, and does not extend to backflow prevention devices that are not part of the specific plant or institution.

(2) A general tester - A person trained and qualified to perform the periodic testing, inspection, and repairs on all devices that are on the market. This person may be an employee of a water agency, an employee of a municipal agency, or an individual operating a backflow device testing service.

(3) A manufacturer's agent - A person who is an employee of a manufacturer of backflow prevention equipment and is thoroughly familiar with the backflow prevention devices produced by his/her employer. This person maybe familiar with other makes and models of backflow prevention devices but is restricted to only his/her employer's products. The Director of the Department of Health, State of Hawaii or his duly authorized representative, must approve all certified testers.

f. Cross-Connection. Any physical connection or arrangement of piping or fixtures between two otherwise separate piping systems, one of which contains potable water for human consumption and the other water for irrigation, fire protection, industrial and other uses, or non-potable water or industrial fluids of questionable safety, through which, or because of which, backflow may occur into the potable water system. This would include bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and any other temporary or permanent devices through which, or because of which backflow could occur.



#### 4. Background

a. Reference (b) presents requirements for the design of water supply systems for naval shore activities. Reference (b) indicates the design requirements for protecting the potable system from contamination by cross-connections with non-potable supplies and units containing polluted water. Reference (b) further indicates the need to protect the potable system from contamination by irrigation systems.

b. Reference (d) sets forth criteria for specifying backflow preventers of the reduced pressure principle type. It requires that such devices have a current Certificate of Approval and provides a list of approved backflow prevention devices.

c. Reference (e) cites methods and devices by which hazards may be eliminated without interfering with the functions of plumbing or water supply distribution systems. It is a comprehensive reference, and covers all aspects of cross-connection control.

d. Reference (f) provides technical guidance for the operation and maintenance of water supply systems at naval shore activities. Chapter 8 of reference (f) describes how the water system becomes contaminated. Chapter 9 reference (f) further requires that approved backflow preventers be installed according to the degree of the hazard involved and indicates the need for periodic testing and inspection of the devices by certified personnel. It also suggests a time interval for inspection and indicates that all devices be tested according to the manufacturer's service instructions. It further points out the requirements for record keeping.

e. To assure the quality of the water at the customer's tap, both the customer and Navy Facilities Engineering Command, Hawaii (NAVFAC HI), the water supplier, must participate in a backflow prevention and cross-connection control program.

5. Policy. Protect the existing potable water system at all times from hazardous cross-connections by the installation, operation, and maintenance of approved backflow preventers. Backflow prevention and cross-connection control measures must be in accordance with the recommendations and requirements of references (a) through (f).

#### 6. Discussion

a. The objectives of the backflow prevention and cross-connection control program are to achieve the following:

- (1) Protection of the quality of the base water supply.
- (2) Elimination of existing hazards.
- (3) Prevention of future unprotected cross-connections.

b. The backflow prevention and cross-connection control program requires the following:

- (1) The survey all existing cross-connections to determine they are adequately protected.
- (2) The recording of data on all existing backflow preventers to enable up-to-date monitoring. The data must include at least the following information:
  - (a) Activity name.
  - (b) Building number (if appropriate).
  - (c) Sketch of approximate location of backflow preventer.
  - (d) Size, type, model number, and manufacturer of the backflow preventer.
  - (e) Date installed (if known).
  - (f) Type of Hazard.
- (3) Operate, maintained and repair all known existing backflow preventers to ensure their proper operation for the protection of the water system.
- (4) Inspect and test all existing backflow preventers at the minimum time intervals to determine their effectiveness as shown in the table. If successive tests on a backflow preventer indicate repeated failures, test preventer at more frequent interval to be determined by NAVFAC HI Utilities and Energy Management Department, Potable Water Division (OPC61). All testing must be performed in accordance with the manufacturer's instruction.

<u>METHOD OR DEVICE</u>	<u>3</u> <u>MONTHS</u>	<u>6</u> <u>MONTHS</u>	<u>12</u> <u>MONTHS</u>
Pressure Type Vacuum Breaker			X
Double Check Valve Assembly			X
Reduce Pressure Principle devices used for shore-to ship connections	X		



<u>METHOD OR DEVICE</u>	<u>3 MONTHS</u>	<u>6 MONTHS</u>	<u>12 MONTHS</u>
Other Reduced Pressure Principle device		X	
Air Gap			X
Reduced Pressure Principle devices used to separate the Navy's potable water system from another agency's potable water system			X

(5) Review all plans and specifications or sketches and material description for new connections to NAVFAC HI Potable Water Systems by NAVFAC HI OPC61 to verify the safety of the cross-connections.

(6) Report all known or suspected accidental contamination immediately to NAVFAC HI OPC61 to enable corrective action, and avoid widespread contamination of the water system.

7. Implementation. Maintain the following provisions of the backflow prevention and cross-connection control program by the shore activities as indicated below:

a. All shore activities and other agencies who receive potable water from water systems owned and operated by NAVFAC HI must:

(1) Conduct a Cross-Connection Control and Backflow Prevention Survey of the areas under their jurisdiction including building plumbing, fire protection, exterior hose bibs, lawn irrigation systems, etc. The survey must include an inspection of the consumer's premises for hazards noted in references (a) and (e) and document any findings observed during the survey. The survey must also document all existing backflow preventers. The activity is responsible for funding the survey.

(2) Conduct follow-up surveys of the areas under their jurisdiction within 5 years after the initial survey to update the status of the initial findings and provide new information, findings, and recommendations as required. The activity funds the follow-up surveys as a lump sum amount or incremental amounts of the cost determined by NAVFAC HI OPC61.

(3) Take immediate action to eliminate hazards if the survey indicates that there are cross-connection hazards.

(4) Forward copy of all surveys to NAVFAC HI OPC61.

(5) The activity may submit a work request to have NAVFAC HI conduct the survey.

b. All shore activities and other agencies who have existing backflow preventers that do not conform to the requirements of reference (e) and the NAVFAC HI OPC61 and, who receive water from systems owned and operated by NAVFAC HI, must provide funding to have their backflow preventers tested and certified by certified testers from NAVFAC HI OPC61.

c. All shore activities and other agencies who have requirements for new backflow preventers and who receive water from systems owned and operated by NAVFAC HI must:

(1) Provide funding to have their backflow preventers installed, tested, and certified.

(2) Provide funding for the re-testing and re-certification of the backflow preventer should the backflow preventer fail the initial test.

(3) Ensure initial certification and all re-certification is performed by NAVFAC HI OPC61. Certification by other agencies is not accepted.

d. All shore activities and other agencies who have existing backflow preventers registered with NAVFAC HI OPC61 will have their devices inspected, maintained, and certified by NAVFAC HI funding for the inspection, maintenance, and certification must be provided by NAVFAC HI OPC61.

e. The activities who are responsible for the design of the connection to a NAVFAC HI Potable Water System must submit construction drawings and specifications for the connection to NAVFAC HI OPC61 for approval, prior to its construction.

f. NAVFAC HI job planners must obtain approval for the connection to the NAVFAC HI Potable Water System from NAVFAC HI OPC61, if NAVFAC HI is to perform the work and construction drawings are not required for the connection.

g. The activity who requires the connection to NAVFAC HI Potable Water System must obtain approval for the connection from NAVFAC HI OPC61 prior to construction of the connection.

h. All shore activities who install backflow preventers or administer contracts for their installation NAVFAC HI must ensure that all newly installed backflow preventers are tested and inspected by a certified tester from NAVFAC HI OPC61 at the same time that the water outage occurs for the connection to the water system. Backflow preventer must pass all tests prior to supplying potable water.



19 Sep 2016

i. All activities that suspect that the potable water system may have been contaminated must call NAVFAC HI OPC61 Steam/Air/Potable Water Division Manager, telephone number 473-0388. In addition, warn all personnel in the area of the possible contamination to stop drinking the water.


8. Responsibility

a. Commanding Officers and Officers-in-Charge of shore activities must ensure that hazards from cross-connections are eliminated and that new connections are approved.

b. Commanding Officers and Officers-in-Charge of shore activities in doubt as to the proper methods of backflow prevention and cross-connection control may request engineering and technical assistance from NAVFAC HI (Code 431), Long Range Maintenance Planning Branch, telephone number (808) 474-3700.

9. Records Management. Manage all records created by this instruction, regardless of media or format per SECNAV Manual 5210.1 of January 2012.

10. Review and Effective Date. Per OPNAVINST 5215.17A of 26 May 2016, the Facilities and Environmental (N4) will review this instruction annually on the anniversary of its issuance date to ensure applicability, currency, and consistency with Federal, DoD, SECNAV, and Navy policy and statutory authority using OPNAV 5215/40. This instruction will automatically expire 5 years after its issuance date unless reissued or canceled prior to the 5-year anniversary date, or an extension has been granted.

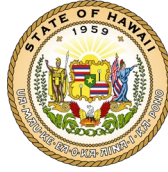


R. A. ESPINOSA  
Chief of Staff  
Acting

Distribution:

Electronic only, via CNRH Gateway

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Interagency Drinking Water System Team  
Zone D1 Removal Action Report  
February 2022

**Line of Evidence 2a**

**Water within the Distribution System does not exceed State and Federal Drinking Water MCLs, Specified State EALs, and ISPs**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination remains in the system and water chemistry concerns are addressed.**

**Objective 2a** - Water within the distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Incident Specific Criteria –

- Zone flushing plan demonstrates entire distribution system is flushed.
- Sample results show the water in distribution system does not exceed State and Federal DW MCLs, specified State EALs, and ISPs. (Guidance Table 2 and Table 3)
- Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.

Lines of Evidence	Completion Status	Outstanding Items
JBPHH water system's approach to flushing and their metrics for success.	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Validity of the volumetric exchange model	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Verification that the entire distribution system is flushed volumetrically.	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Residential Sampling Report for Flushing Zone (Risk Management Summary)	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>

February 19, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 2A – WATER WITHIN THE DISTRIBUTION SYSTEM DOES NOT EXCEED STATE AND FEDERAL DW MCLs, SPECIFIED STATE EALs, AND ISPs

Encl: (1) 2a.1 Memorandum for Record  
(2) 2a.2 Validity and Application of Volumetric Exchange Method  
(3) 2a.3 Hydraulic Model  
(4) 2a.4 Records of Completed Volumetric Exchanges  
(5) 2a.5 Water Source and Water Storage Facilities  
(6) 2a.6 Distribution System Exceedance Investigation Summary and Results

1. Enclosures (1) through (6) document completion of Line of Evidence 2a, that water within the Zone D1 distribution system does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the Joint Base Pearl Harbor-Hickam (JBPHH) distribution network. Zone D1 is part of the JBPHH Drinking Water system that is operated and maintained by the United States Navy. Flushing operations for Zone D1 are summarized in Enclosure (1), signed by LCDR Carl Chase, team lead for the Drinking Water Distribution System Recovery Team.

2. Details on the drinking water system and flushing operations and protocols are provided in Enclosures (1), (3), and (5). The guidance provided by Dr. Whelton on the recommended volume exchanges to be flushed in the distribution system is provided in Enclosure (2).

3. The records of the distribution system volumetric exchanges flushed are provided in Enclosure (4). Level 2 sampling data collected after distribution flushing is summarized in Enclosure (6).

4. Sample results with analyte detections exceeding the prescribed MCL, EAL, or ISP are documented in Enclosure (6). The follow-on investigation summary and additional sampling results are also documented in Enclosure (6).

5. The information provided in Section 2a, including the flushing process followed and the subsequent sampling results, demonstrate that water within the Zone D1 distribution system does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters.

6. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

WETZEL.CHRISTOP  
HER.JAMES.154019  
4862

Digitally signed by  
WETZEL.CHRISTOPHER.JAMES.15  
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Date: 2022.02.19 19:37:51 -08'00'

C. J. Wetzel  
LT, CEC, USN

25 Feb 2022

## MEMORANDUM FOR THE RECORD

From: LCDR Carl Chase, JBPHH Drinking Water Distribution System Recovery Team

To: Interagency Drinking Water System Team

Subj: DISTRIBUTION SYSTEM RECOVERY PLAN ADDENDUM – ZONE D1 ANALYSIS

Ref: (a) Memorandum for the Record from LCDR John Daly regarding the Distribution System Zone Flushing, December 28, 2021

(b) State of Hawaii Department of Health, Directive One– Flushing Requirements Navy Water System Incident, Case No.: 20211128-1848 (HI Directive One, dated 08 December, 2021)

(c) Drinking Water Distribution System Recovery Plan, 17 December 2021

(d) Incident Specific Criteria to Meet Lines of Evidence Objectives 1c and 2a, dated 05 January 2022

Encl: (1) Hickam/Iroquois Point Water Transmission Line Status

1. OBJECTIVE: The Drinking Water Distribution System Recovery Plan (DWDSRP) was signed by the Interagency Working Group on 17 December 2021. This addendum provides additional technical information to document the system flushing methodology and engineering approach used to restore Flushing Zone D1 to service as requested by the State of Hawaii Department of Health (HI DoH) in reference (d).

### 2. BACKGROUND:

2.1. Portions of the Navy water distribution system serving JBPHH and surrounding areas were exposed to low levels of fuel contamination with initial indications in the form of smell reports occurring on or about 28 November 2021.

2.2. Prior to the aquifer contamination incident (incident), water users connected to the Navy's system were supplied by three Navy owned water sources, Red Hill Shaft, Aiea/Halawa Shaft and Waiawa Shaft. In the time period prior to the incident, Waiawa Shaft was the main water source supplying approximately 16 million gallons per day (MGD) to the JBPHH system with at least one pump operating full time (100%). A single Red Hill Shaft pump was operated intermittently as a secondary source to supply approximately 5.5 MGD to the system. The Aiea/Halawa shaft was not being operated due to concerns over high chloride concentrations caused by saltwater intrusion into the aquifer.

2.3. On the evening of 28 November 2021, the Red Hill Shaft was secured and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on 28 November 2021 but was shut down on 03 December 2021 to prevent westward contaminant migration in the aquifer.

2.4. Since 03 December 2021, Waiawa Shaft has been the sole water source providing potable water to the distribution network. It is located 5.5 miles west of the Red Hill Fuel Facility and testing has not found any water quality issues at this source.

3. ENGINEERING ANALYSIS AND TOOLS: DWDSRP development utilized engineering judgement informed by existing tools and data sources such as ArcGIS, Supervisory Control and Data Acquisition

(SCADA) system historic/current data, hydraulic models, and input from water system infrastructure contamination subject matter experts (SMEs).

3.1. ArcGIS was the primary tool used for mapping, volumetric calculations, and spatial analysis of the JBPHH utility systems.

3.2. System flows were measured by meters at key points within the distribution system. Data was recorded and stored by the Navy's SCADA system historian. SCADA is also monitored 24/7 by water system operators.

3.3. A hydraulic model was developed in 2014 and calibrated to conditions at the time. It is a skeletonized model depicting major transmission lines to many areas of the base. It does not include all mainline pipes, the Hickam area, or laterals feeding residence and non-residence facilities. The model was considered to be of limited use in determining the effectiveness of system flushing. It was primarily used to determine areas that were most likely impacted by the contamination event. The results directly correlated with initial reporting from impacted residents.

3.4 Dr. Andrew Whelton, a Purdue University associate professor of civil, environmental, and ecological engineering and recognized for his expertise in disaster response and recovery, provided recommendations to the US Navy based on his research and experience. His work is often cited in EPA literature and he is a leading expert in the field of recovering contaminated drinking water plumbing. His recommendations were incorporated into the DWDSRP.

4. CONSTRAINTS: In addition to Section 1.3 of the DWDSRP, the following constraints were considered during development of the plan:

4.1. Waiawa Shaft pumps are capable of pumping 19 MGD with 2 pumps running at full speed. There are 4 pumps at Waiawa Shaft, 2 are operational, one is standby, and one is down for maintenance. Average daily demand at JBPHH since the incident has ranged from 11 to 14 MGD. Maximum potable water system flushing flows were limited to 5 MGD to avoid excessive drawdown of the S1/S2 tanks and stay within the capacity of Waiawa Shaft pumps.

4.2. The two 6 million gallon (each) tanks, S1 and S1 could not be drawn down below the 28-foot level. This constraint was imposed by the water system operators who wanted to avoid low water system pressures that would be caused by S1/S2 drawdown below 28-feet.

4.3. Discharge to the Navy's sanitary sewer system and the Fort Kamehameha Wastewater Treatment Plant (Ft. Kam WWTP) was limited to 1 MGD by wastewater operations staff. Much of the infrastructure Ft. Kam WWTP was considered to be in poor condition and some process elements do not have a backup unit. The direct discharge of too much potable water to the plant was also thought to pose the risk of "wash out" of the microbes that provide secondary treatment.

4.4. Discharges of potable water to land or storm sewers were required by HI Directive One to be treated prior to discharge. Treatment was provided through 1 MGD mobile granular activated carbon (GAC) units. The units had several constraints on their use including site access, adequate staging areas that were level with sufficient area for the units and support crews, impacts to the community, traffic control, and distance to discharge. Each GAC was kept in a single location for at least 24 hours due to labor and time required for unit setup and breakdown.

4.5. Water service was required be maintained to residents and JBPHH tenants. Many families have remained in their homes and mission essential Government activities require continuous water service.

4.6. JBPHH did not have an established unidirectional flushing plan developed prior to the incident. Unidirectional flushing typically involves inducing one-way flow through each pipe segment in a water distribution system by closing mainline isolation valves and opening hydrants for a short period of time. The number of hydrants required would be determined by the pipe size and the minimum water velocity required to flush sediments and other contaminants from the pipe segment. True unidirectional flushing of the system was determined not to be a feasible method for flushing the JBPHH potable water system for the following reasons:

4.6.1. Per section 1.2 of the DWDSRP, the distribution system was to be recovered with critical urgency. Additionally, SMEs advised that the longer contaminants remained in the system, the more likely it was that they would migrate into plastics, gaskets, sediments, etc. A unidirectional flushing program would take several months to develop and implement and the timeline was not considered feasible for a return to service.

4.6.2. Water system operators indicated that many mainline isolation valves would not properly close and could not be relied upon to isolate pipe segments.

4.7. Dr. Whelton recommended three volumetric turnovers for impacted pipe networks. Flushing zones with higher risk of contamination were identified and prioritized using water user complaint history, testing results, the hydraulic model, and the hydraulic proximity to Red Hill Shaft. A factor of safety was applied to the highest priority zones by specifying a minimum of five volumetric turnovers. Zones where the hydraulic modelling indicated that contamination may have travelled, were in close hydraulic proximity to Red Hill Shaft, and had few complaints were flushed with the recommended three volumetric turnovers. Low priority was given to zones where SCADA data indicated that water was fed solely from Waiawa Shaft before and after the incident. To reduce water waste, flush zones with lower risk of contamination were volumetrically turned over a minimum of once or twice.

5. Following Dr. Whelton's recommendation, the DWDSRP was designed with a directional flush of the distribution system starting from the clean water source and moving systematically through the entire system. The limited water source capacity at Waiawa Shaft and disposal constraints required that the system be broken down into smaller flush zones. 19 total zones were established that could be independently flushed without adverse hydraulic or water quality impacts to previously flushed zones. Section 2.4 of the DWDSRP depicts the network diagram and zone relationships.

## 6. FLUSH ZONE D1:

6.1. DESCRIPTION OF FLOW: This zone is fed from 3 transmission mains (24-, 24-, and 30-inch diameter) that interconnect at the northern zone boundary. Water sources to the zone include Waiawa Shaft, Red Hill Shaft and the S1/S2 tanks. Flow is generally from north to southwest through the zone.

6.1.1. Downstream zones include zones D2, D3 and D4. A3 may also be considered a downstream zone prior to the incident. As documented in Enclosure (1), the interconnection connecting Zone A3 and the "D" zones was closed on 05 December 2021 and has not been reopened. This interconnection line will be flushed if brought back into



service. Reference section 2a.5 “Water source and Water Storage Facilities” of the Removal Action Report for flushing procedures and tentative dates.

6.2. WATER USE/TENANTS: Water users in this zone include a mix of operational facilities, enlisted personnel barracks, Navy Gateway Inns and Suites (NGIS) hotel facilities, and single or multi-family residential houses in the southern portion of the zone. There are 2 Child Daycare Centers (CDCs) and schools in this zone, the Hale Moku CDC and the Pearl Harbor Kai Elementary school. Other larger community support facilities include the Bloch Area, Club Pearl restaurants and bars, and the main Pearl Harbor fitness center. Operational tenant facilities include an administrative facility for Commander Naval Surface Group, Middle Pacific (COMNAVSURFGRU, MIDPAC)

6.3. PIPE VOLUME: Per section 2.5.1.1. of the DWDSRP, Flush Zone D1 has a mainline pipe volume of 260 thousand gallons (KGal) and a minimum turnover volume of 780 KGal. With the exception of the 24- and 18-inch transmission pipelines, distribution pipes in the zone are 4 to 12-inches in diameter.

6.4. PRIORITY: Because it was likely that contamination entered Zone D1, the zone was included in Phase #2 with three volumetric turnovers minimum.

6.5. HYDRANT SELECTION: Eight geographically and hydraulically dispersed flushing hydrants were selected to flush Zone D1.

6.5.1. Hydrants 747 and 723 were selected to be in close proximity to the CDC and elementary school.

6.5.2. Hydrant 435 was selected to flush the line serving COMNAVSURFGRU.

6.5.3. Hydrant 455 was selected to flush the pipes in the vicinity of Club Pearl, the fitness center, Pearl Kai Elementary, and the bachelor enlisted quarters (BEQ).

6.5.4. Hydrants 724, 782 and 768 were selected so that water would be pulled through the distribution main network serving the single/multi-family residences. Many of the lines serving residences in this portion of the network are dead end and it was assumed that these lines would be flushed when the residences were flushed.

6.5.5. Flushing Hydrant 400 was selected to induce additional flow in the 18-inch transmission main running south from Zone C1.

6.6. DEAD-END LINES: It is possible that flushing was not induced in some small neighborhood loops or dead-end lines serving facilities or piers. To address this concern, additional distribution water line samples were taken in locations selected in a joint effort by the Navy, DoH, and EPA. These samples are representative of other dead-end lines within the zone.

6.7. FLUSHING ACTUALS: Water was simultaneously discharged through:

400	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
27-Dec	20:00	8:00		1:28		6:32 20211227 2000-0800	N/A		
28-Dec	8:00	20:00			9:51	1:51 20211227 0800-2000	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 8:23  VOLUME 100600 Gallons </div>									

723	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
24-Dec	6:00	14:00			9:57	4:03 20211224 0600-1400	N/A		
24-Dec	14:00	22:00			14:35	7:25 20211224 1400-22:00	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 11:28  VOLUME 137600 Gallons </div>									

435	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
22-Dec	14:00	22:00		17:07	20:00	2:53 20211222 1400-2200	N/A		
22-Dec	22:00	6:00		2:50		3:10 20211222 2200-0600	N/A		
23-Dec	6:00	14:00			9:08	3:08 20211223 0600-1400	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 9:11  VOLUME 110200 Gallons </div>									

724	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
24-Dec	6:00	14:00		13:43		0:17 20211224 0600-1400	N/A		
21-Dec	14:00	22:00			15:35	1:35 20211224 1400-2200	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 1:52  VOLUME 22400 Gallons </div>									

455	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
27-Dec	8:00	20:00		19:49		0:11 20211227 0800-2000	N/A		
27-Dec	20:00	8:00				12:00 20211227 2000-0800	N/A		
28-Dec	8:00	20:00			9:39	1:39 20211228 0800-2000	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 13:50  VOLUME 166000 Gallons </div>									

747	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
26-Dec	14:00	22:00			15:31	6:29 20211226 1400-2200	N/A		
26-Dec	22:00	6:00				8:00 20211226 1400-2200	N/A		
27-Dec	6:00	14:00			11:00	5:00 20211226 1400-2200	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 19:29  VOLUME 233800 Gallons </div>									

768	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
23-Dec	22:00	6:00		23:45		6:15 20211223 2200-0600	N/A		
24-Dec	6:00	14:00			9:25	3:25 20211224 0600-1400	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 9:40  VOLUME 116000 Gallons </div>									

Hydrant	Volume
400	100,600
435	110,200
455	166,000
723	137,600
724	22,400
747	233,800
768	116,000
782	79,600
TOTAL	966,200

782	Shift			Flush Time			Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log		
25-Dec	14:00	22:00		18:51		3:09 20211225 1400-2200	N/A		
25-Dec	22:00	6:00			0:15	2:15 20211225 2200-0600	N/A		
26-Dec	6:00	14:00		9:16		4:44 20211226 0600-1400	N/A		
26-Dec	14:00	22:00			14:40	0:40 20211226 1400-2200	N/A		
26-Dec	22:00	6:00		3:03		2:57 20211226 2200-0600	N/A		
27-Dec	6:00	14:00			7:14	1:14 20211227 0600-1400	N/A		
<div> TOTAL RUN @ FLOW of 200  TIME 6:38  VOLUME 79600 Gallons </div>									

6.7.7. The total volume flushed through the system was 966 KGal for 3.7 volumetric turnovers. Actual volumetric turnovers exceeded the minimum requirement.

6.8. SCADA DATA: SCADA was an effective tool when meters were located at both the entrance and exit of the zone. Due to the distribution network scale and lack of meters in this zone, information from SCADA provided limited use.

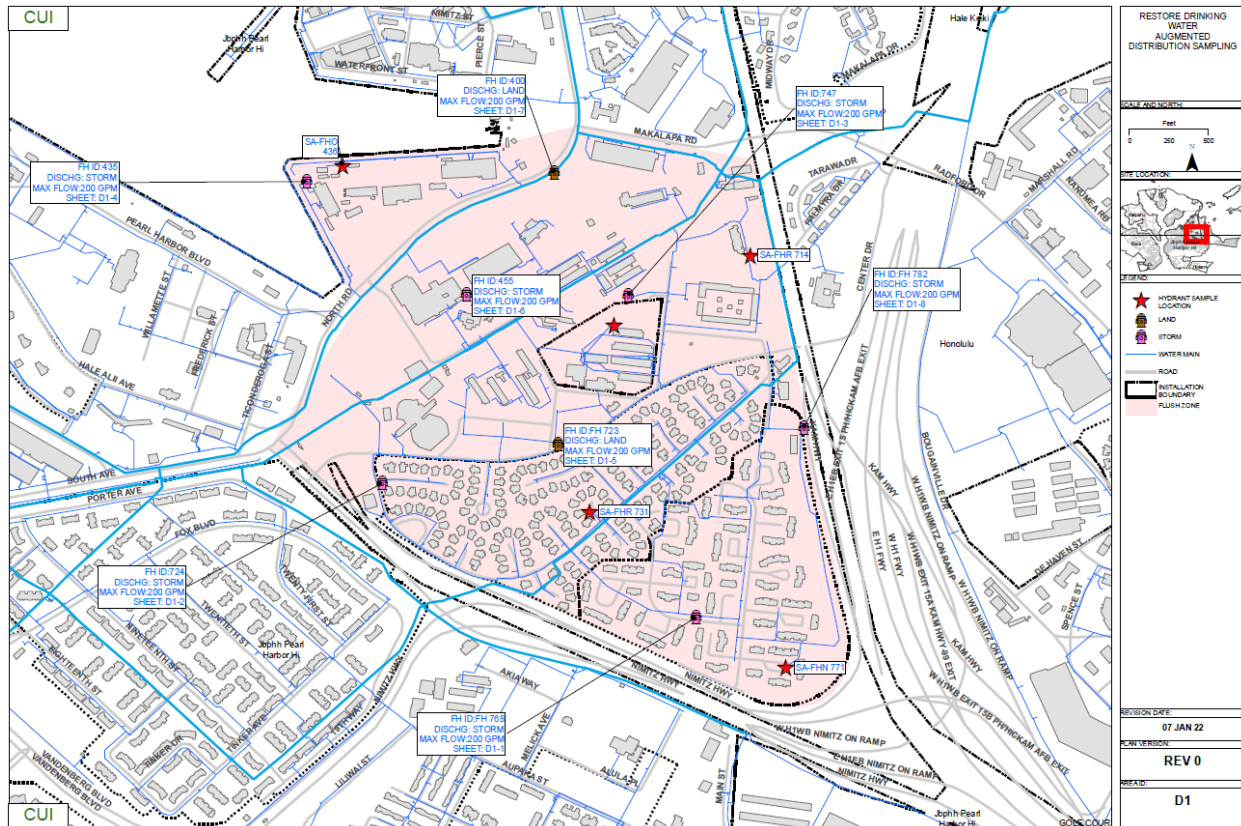


Figure 1: Flush Zone D1

*C. C. Chase*  
CCAR, CDE, UFW

C. C. CHASE

22 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Hickam/Iroquois Point Water Transmission Line Status

1. This Memorandum for Record (MFR) is to document the status of the underwater water transmission line that connects the Hickam and the Iroquois Point areas of the JBPHH Potable Water System.
2. The water transmission line was secured by closing two isolation valves, one on each side of the underwater crossing. Isolation was performed by Public Work Department personnel on 5 DEC 2022. As of the date of this memorandum, the transmission line is still secured.

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CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam

February 15, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: VALIDITY AND APPLICATION OF VOLUMETRIC EXCHANGE METHOD

Ref: (a) Drinking Water Distribution System Recovery Plan, December 2021

Encl: (1) Dr. Whelton email documenting volumetric exchange method dtd 08 JAN 22

1. This letter documents the basis of the volumetric exchange method used in the development of reference (a). The basis of the flushing method was based on two key recommendations from Dr. Whelton, who served as the Navy's consultant in the early stages of the incident. Enclosure (1) documents key recommendations from Dr. Whelton which included flushing from a clean source, systematically moving through the entire system, and flushing at least three times the pipe volume. Rules of three is what Dr. Whelton generally recommends.

2. Reference (a) incorporated the recommendations from Dr. Whelton by creating a flushing sequence that began with clean water from the Waiawa shaft and flushing systematically through the entire system. The volumetric exchanges for each zone and zone flushing sequence plan was developed by Navy engineers. This is outlined in table 2.4, Distribution System Recovery Plan Diagram, and section 2.5, Flushing Plan Phasing, of reference (a). A safety factor was applied to the rule of three to obtain five volumetric turnovers for the phase 1 zone areas. Phase 2 zone areas had three volumetric turnovers. Phase 3 zone area had two volumetric turnovers and phase 4 zone areas had one volumetric turnover. The phase 3 and phase 4 zone volumetric turnover determinations were made after considering the up-gradient zone flushing volumes and the non-potable use of water in the zones.

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

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M. W. Meno  
Captain, U.S. Navy Civil Engineer Corps

**From:** Whelton, Andrew J <awhelton@purdue.edu>  
**Sent:** Saturday, January 8, 2022 4:58 AM  
**To:** Lee, Andre K (NAVFAC HI BD) CIV USN NAVFAC HAWAII PEARL (USA) <andre.k.lee4.civ@us.navy.mil>  
**Cc:** Isaacson, Kristofer P <isaacsok@purdue.edu>; Proctor, Caitlin Rose <proctoc@purdue.edu>  
**Subject:** [URL Verdict: Neutral][Non-DoD Source] RE: Cross Connection Control Plan and Flushing Plan documentation requirements for DoH

LCDR Daly,

I am free to talk later this afternoon today if you want. I'm Mountain Standard Time.  
Below is some information.

Andy  


#### FEEDBACK

1. You applied unidirectional flushing and if you opened hydrants fully you likely maximized velocity in the pipes you were flushing. The issue they seem to be getting at is scouring velocity which you identify. This is used for removing sediment (typical cleaning of water pipes) as you know. There is no SOP for water contamination response and recovery, so you applied standard water distribution system maintenance practice of unidirectional flushing. This is good. The state I think invoked water main disinfection standard which, to my knowledge isn't applicable here unless you conducted shock disinfection.
  - a. For perspective, per a Water Research Foundation study: Microbial Control Strategies for Main Breaks and Depressurization, Project 4307. Published 2014. Denver, Colorado.
    1. Scouring velocity helps removed sediment from water mains/pipes. To achieve 2.5 to 3 log removal of sand particles for 4-to-16-inch diameter PVC pipes, 3 ft/s is needed.
    2. In that report, to achieve this removal for a 6-inch diameter PVC pipe, Q was 308 GPM
    3. In that report, to achieve this removal for 4-inch diameter PVC pipe, Q was 137 GPM
  - b. We recommended starting flushing from the clean water source and moving systematically through the entire system in a unidirectional way. If you all did this, be sure to explain that. That helps minimize the change residual "old" water gets untouched, or is left in the system.
  - c. You could calculate scouring velocities in each of the areas. If any are lower than desired you can go back and just keep repeat flushing giving an added level of safely.
  - d. The state's interest in scouring velocity may be of concern that (JP-5?) free product adsorbed to sediment/scales and they want to be certain it got scoured out. If it didn't, it could dissolve it's constituents into water over time.
  - e. Dead-ends are really important. You need to specifically address how you will get that water out. In West Virginia, many weeks after the spill and utility had flushed out the black-licorice smelling contaminated water out someone in a distal part of the system complained about odor. To my recollection the utility thought it was psychological, but it turned out there was a dead-end they didn't flush. Somehow that contaminated water got drawn into a nearby home and someone was exposed.

- f. Question: How long was each hydrant open typically?
  - g. I think we mentioned flushing 3 times the pipe volume. Rules of three is what I often recommend. Flushing velocity is certainly important. I vaguely remember NAVFAC had contracted a consultant to create the flushing plan.
2. JP-5 isn't a single contaminant which we've talked about before. It's a mixture of 100s-1000s of individual chemicals. Even if JP-5 itself is hydrophobic and primarily found in emulsions or floating on the surface, some of these constituents will still diffuse into the water itself. The question they are likely after is how do you know you removed all parts of JP-5 that may have gotten entrained in the water system? This goes back to what chemicals are you testing for in the water distribution system. JP-5 constituents have different water solubility and octanol-water partitioning coefficients (Log Kow = How much they like to be in biofilm and plastics, not water). Additionally, the different materials (Metal vs PVC vs HDPE vs. gaskets) may be more prone to soaking up some JP-5 contaminants and not others depending on their characteristics. For example, PVC has been shown to be less susceptible to soaking up some crude oil-based contaminants than HDPE pipes (Huang et al. study with Whelton). Ultimately, the fate of the chemicals in the drinking water system will not be the same for all JP-5 constituents. Remember the drawing I drew on the whiteboard when meeting with CDR Chase, NAVFAC, COE, and Army? It showed different constituents may be in different parts of the water system. That's what DOH is likely after. Question to you: What wide screen testing have you done in the water distribution system since December 22? This can help you hunt down that the contaminants are present or gone.
  3. Escalation should be based on how much flushing you are okay with trying. If you want to remove and replace infrastructure (that has sometimes happened after other contamination events on the mainland and overseas), it's a viable but laborious option. As an extreme example, following the Camp Fire it was estimated it would take over a year of continuous flushing to return some contaminated pipes to safe use, so for some conditions they removed and replaced pipes. However, this flushing timeline will vary significantly depending on the water distribution systems and water testing results – AND chemicals or individual JP-5 constituents present. If I knew what the chemicals were still being found and what was done to try to get rid of them, I could give a more informed opinion. Food grade surfactants were used in Israel after a drinking water contamination incident...BUT using surfactants is not trivial and can cause all sorts of damage to water system components and leave residual. This probably isn't an email, but more discussion. Happy to talk. If you decide you want to go this way we should be more engaged technically in what this means. It's not likely an email response/effort, but more involved.
  4. Here's a paper where we reviewed petroleum (and other material) drinking water distribution and plumbing contamination incidents and flushing [Decontaminating chemically contaminated residential premise plumbing systems by flushing - Environmental Science: Water Research & Technology \(RSC Publishing\) DOI:10.1039/C5EW00118H](https://doi.org/10.1039/C5EW00118H). Unfortunately, when we went to

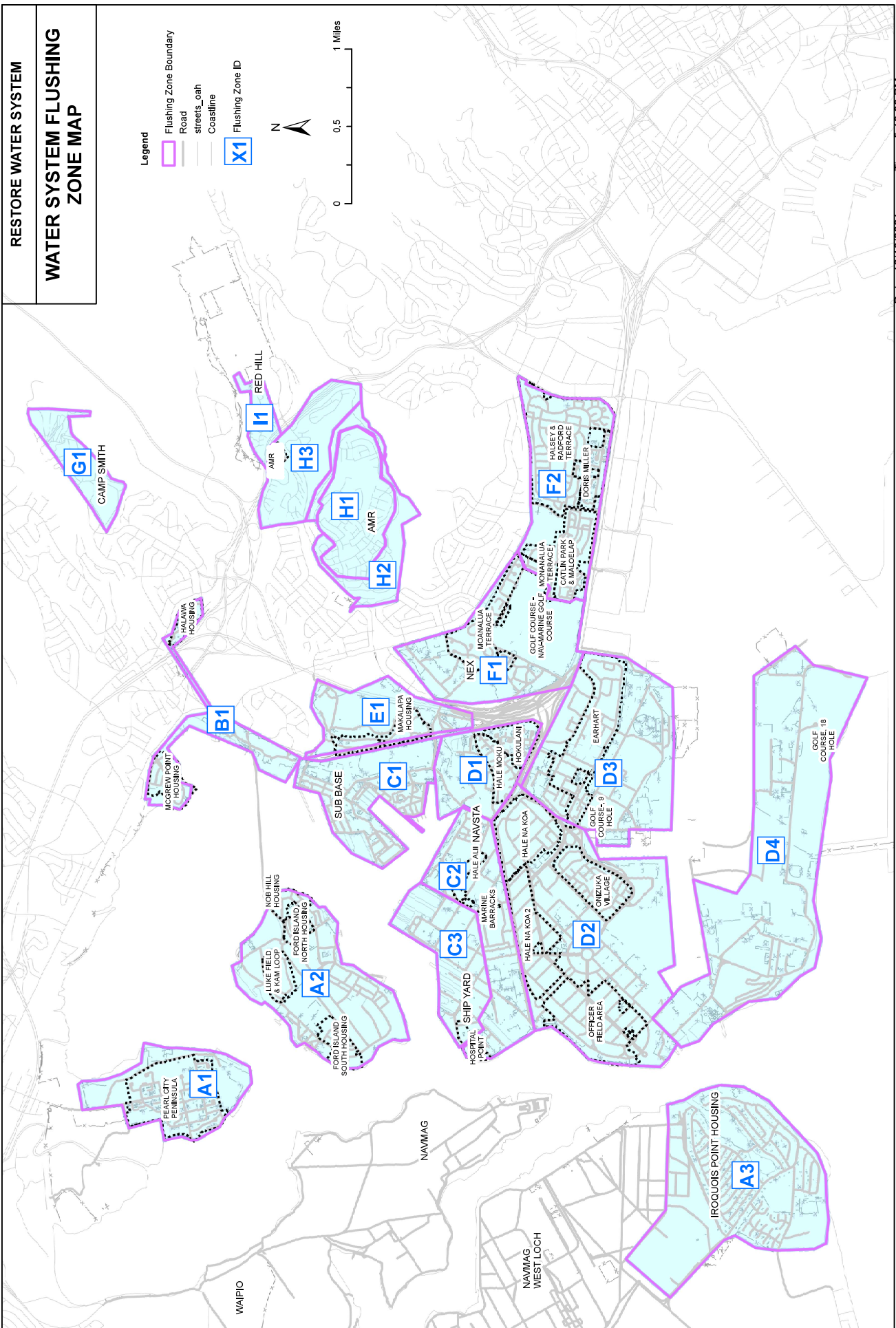
review the underlying evidence of each incident, often the utility and state didn't document much. Even incidents overseas had little documentation. It seems groups simply tried something, it did or didn't work, and they moved on. They also didn't sample much and rarely it an entire water distribution system that was affected.

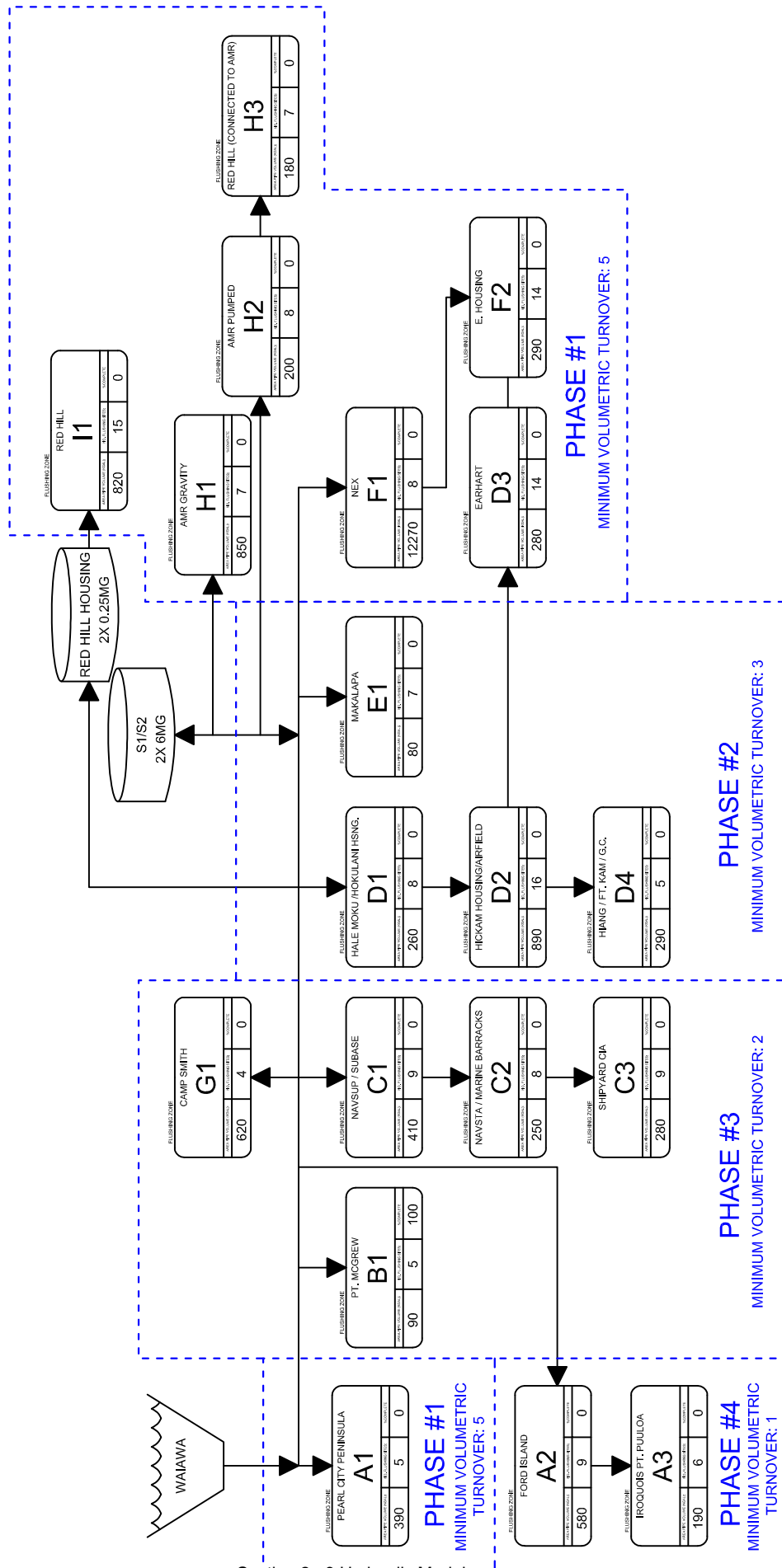
Again, I can get on a zoom call or phone this afternoon MST to connect. I was called into the Colorado wildfires to help the communities identify and design water sampling and recovery plans. We're getting data every day and meeting with state and federal agencies. This is the Marshall Fire and Middle Fork Fire. I apologize for the delayed response.

Andy

Cell/text: [REDACTED]







Section 2a.3 Hydraulic Model



# JBP HH Hydraulic Model

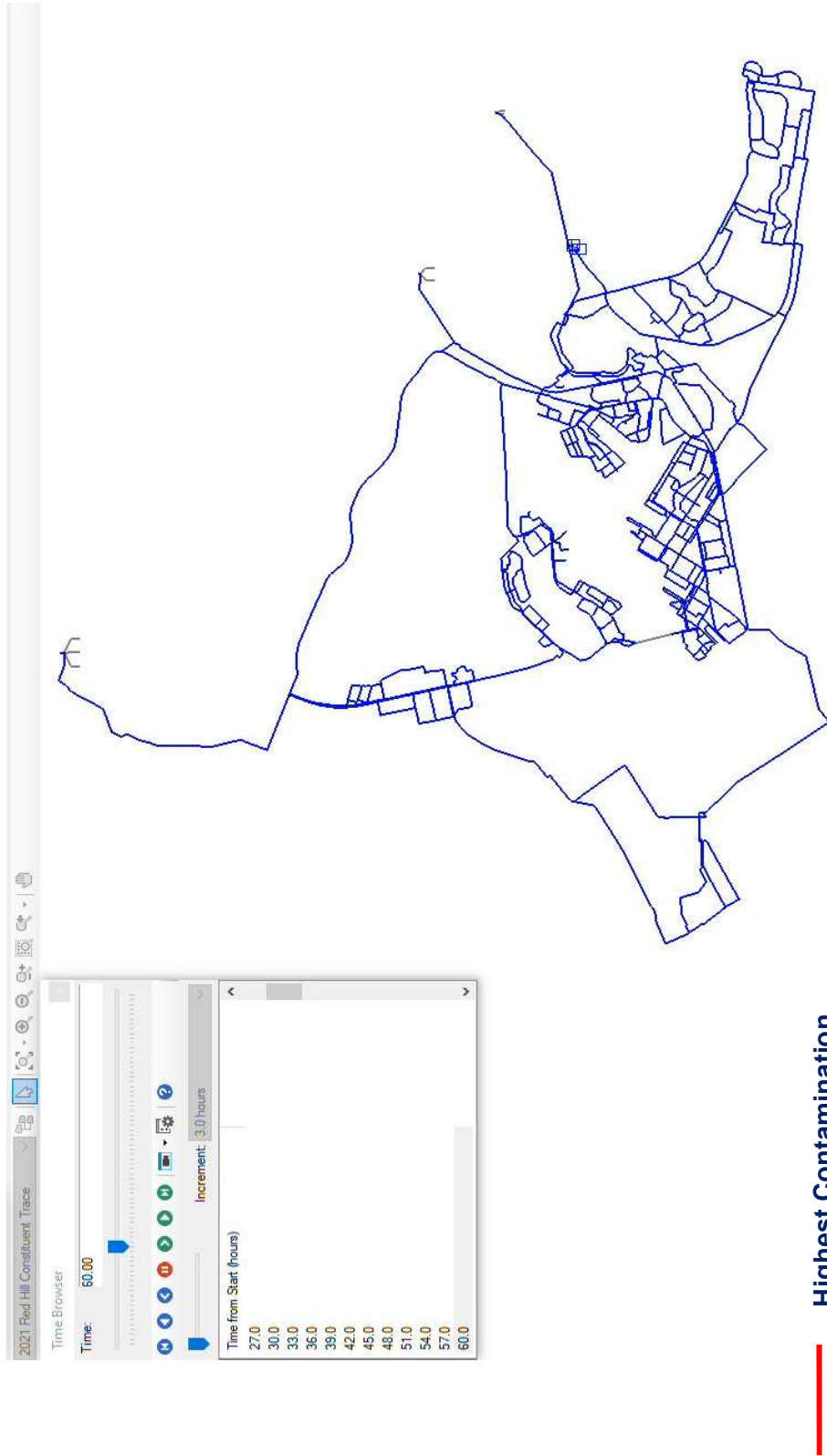
Interagency Drinking Water Supply Team

*18 January 2022*

CONTROLLED UNCLASSIFIED INFORMATION//CUI

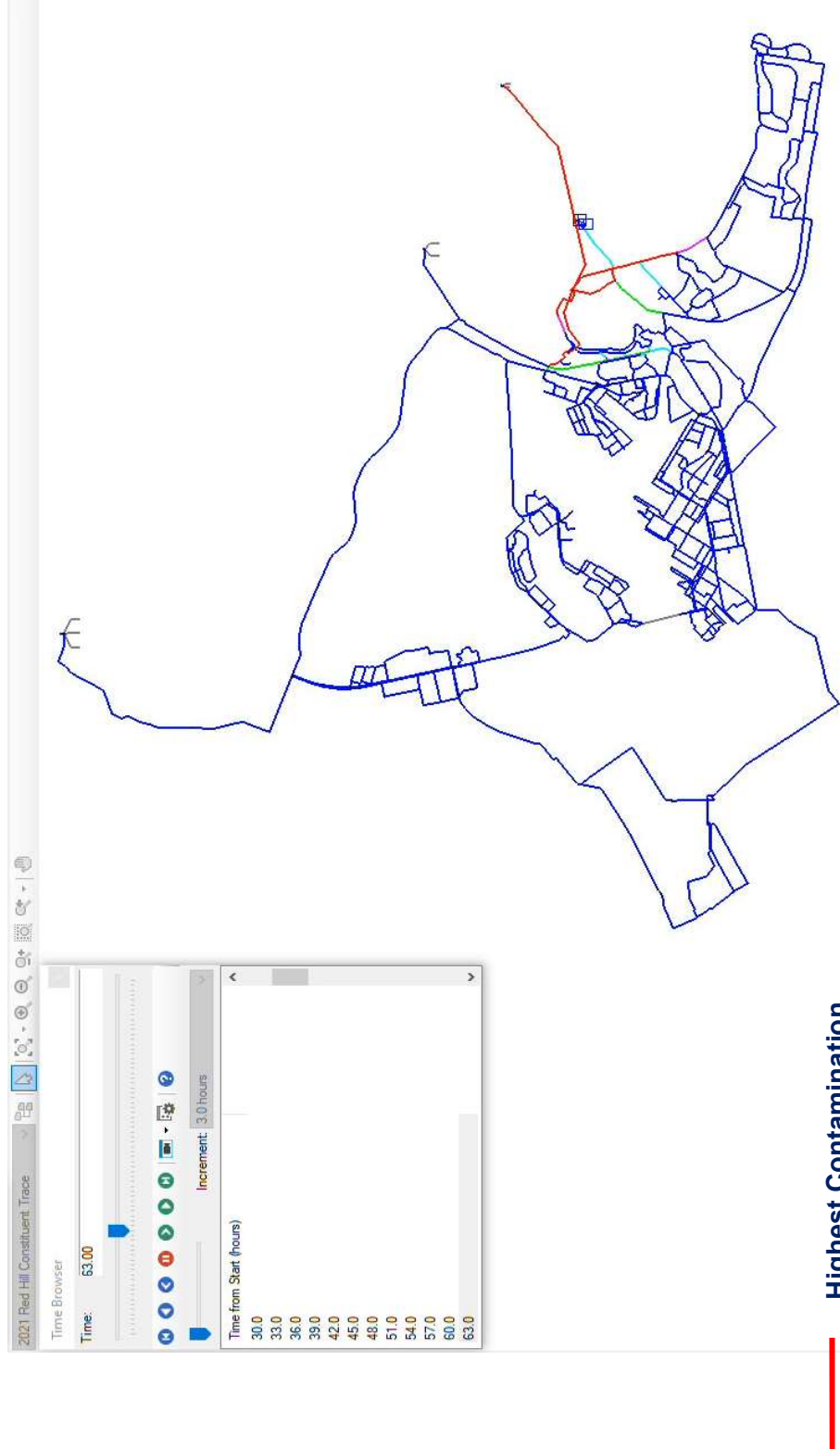


# JBP HH Hydraulic Model





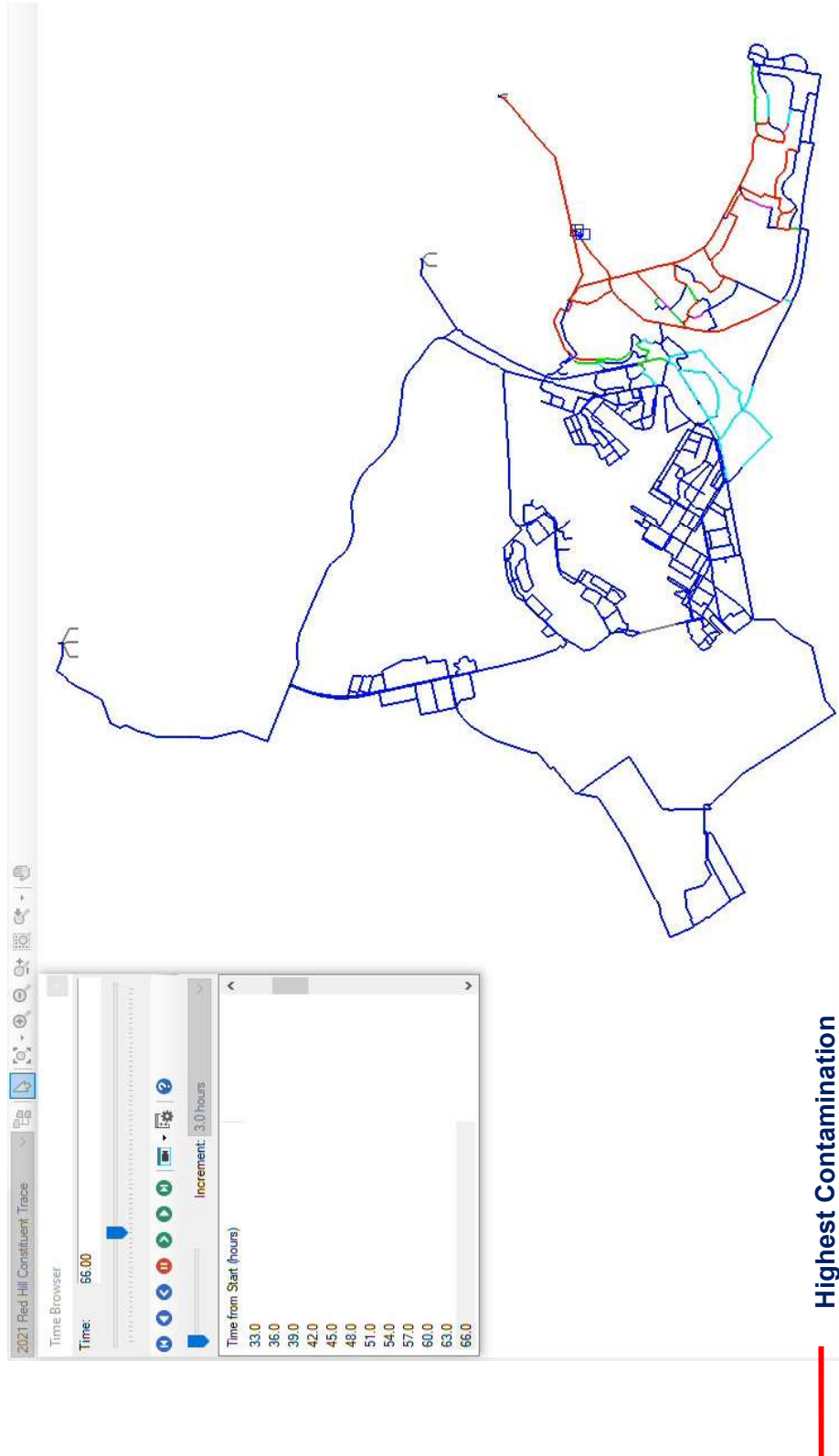
# JBP HH Hydraulic Model







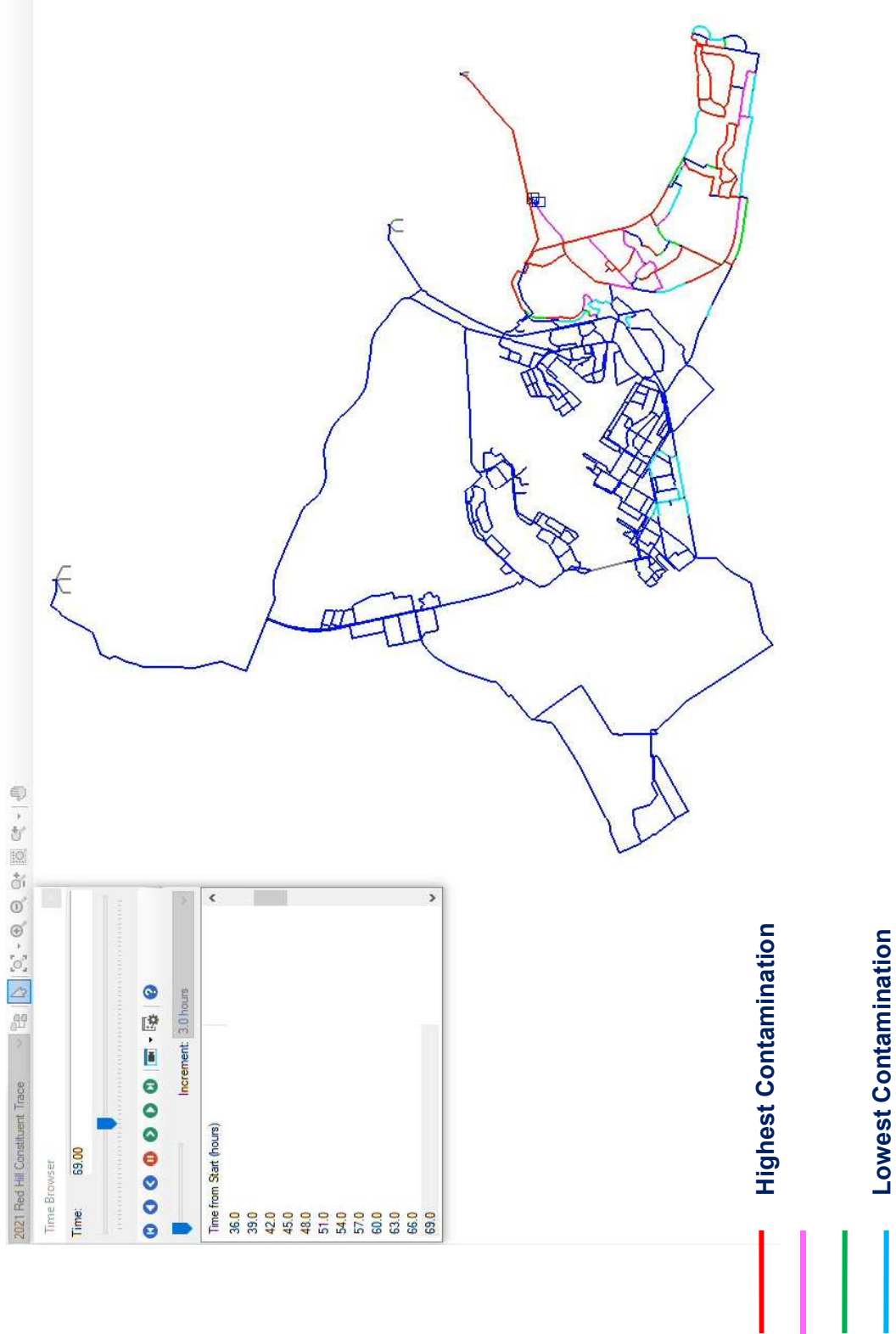
# JBP HH Hydraulic Model



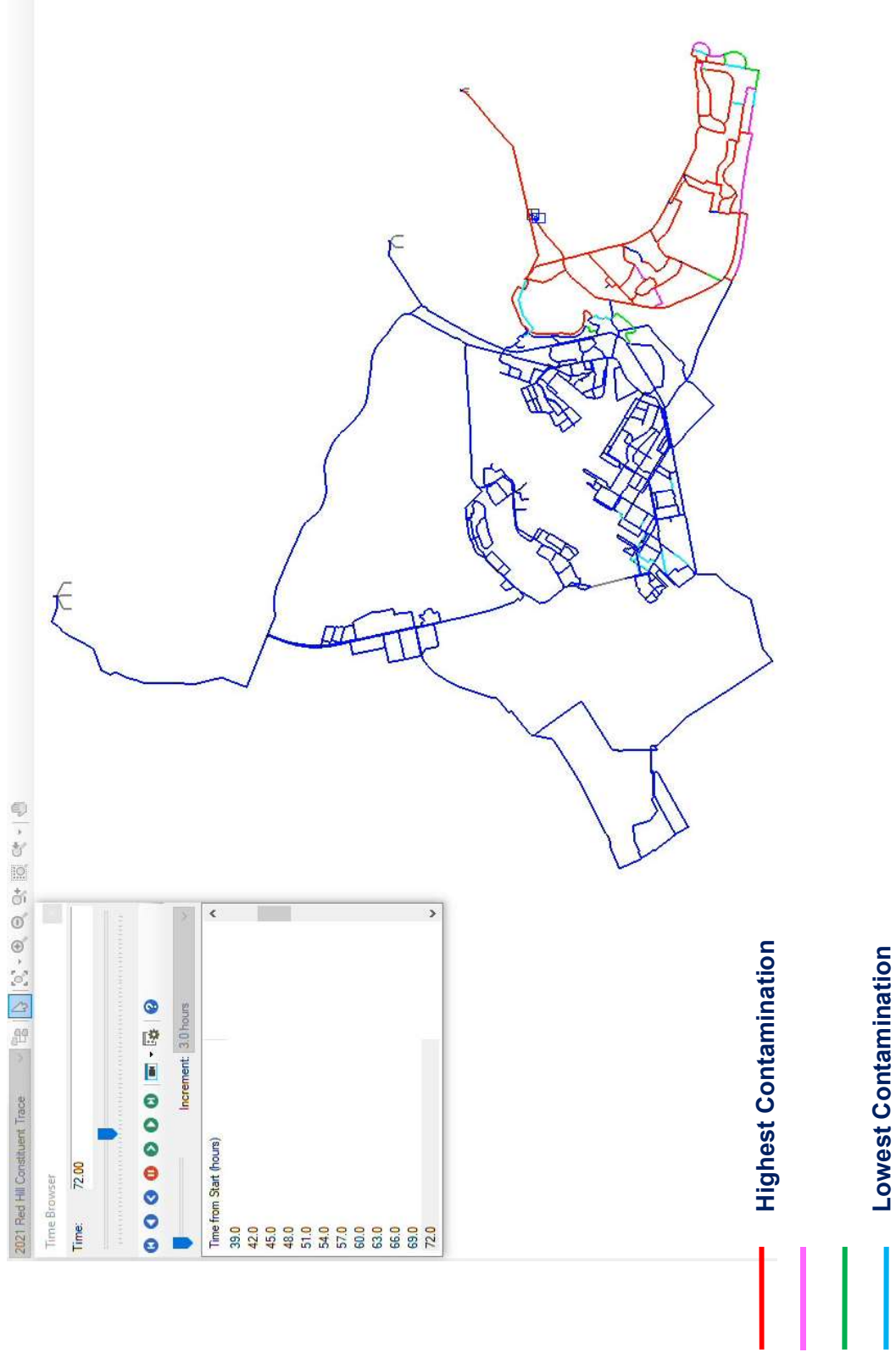




# JBP HH Hydraulic Model

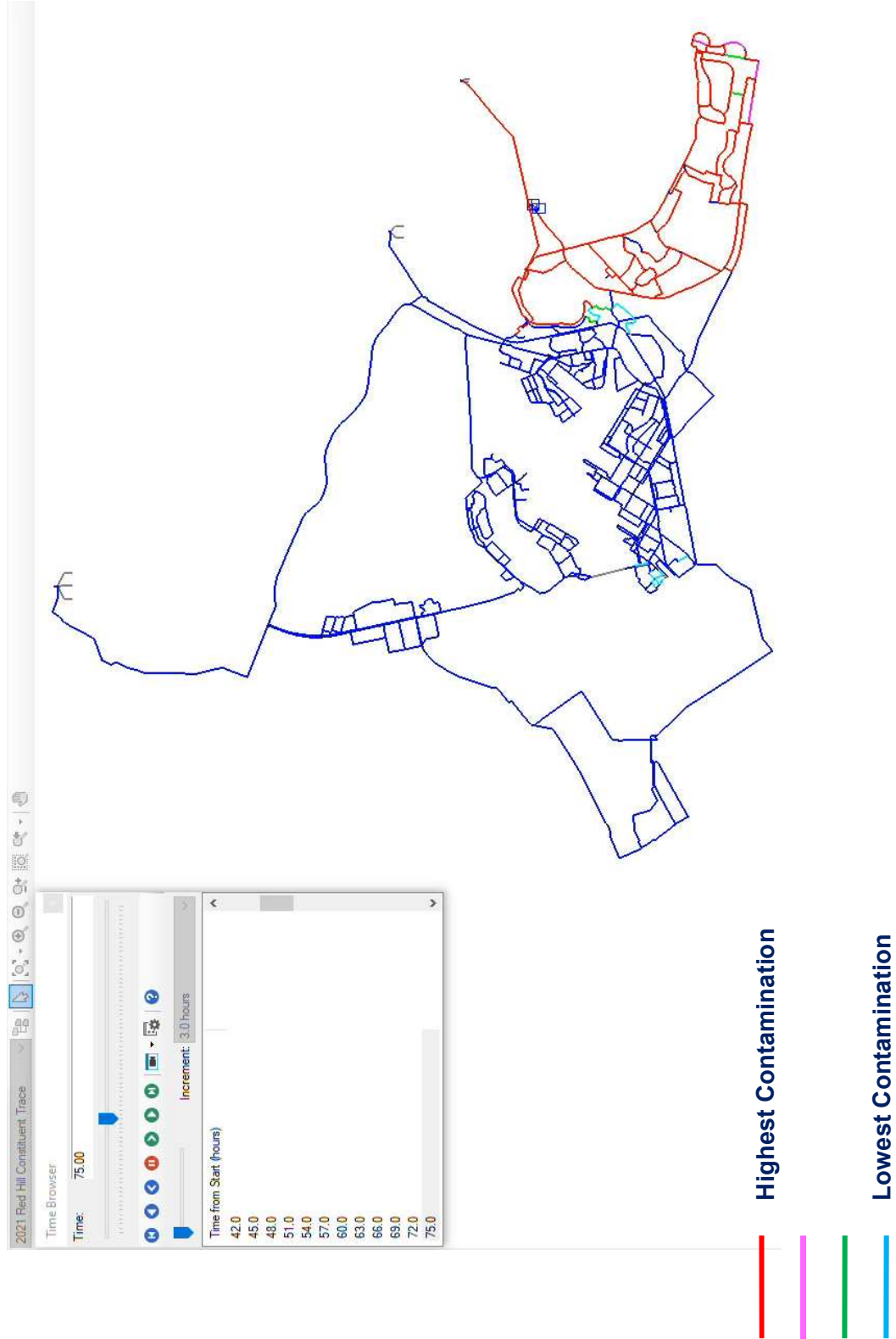


# JBP HH Hydraulic Model



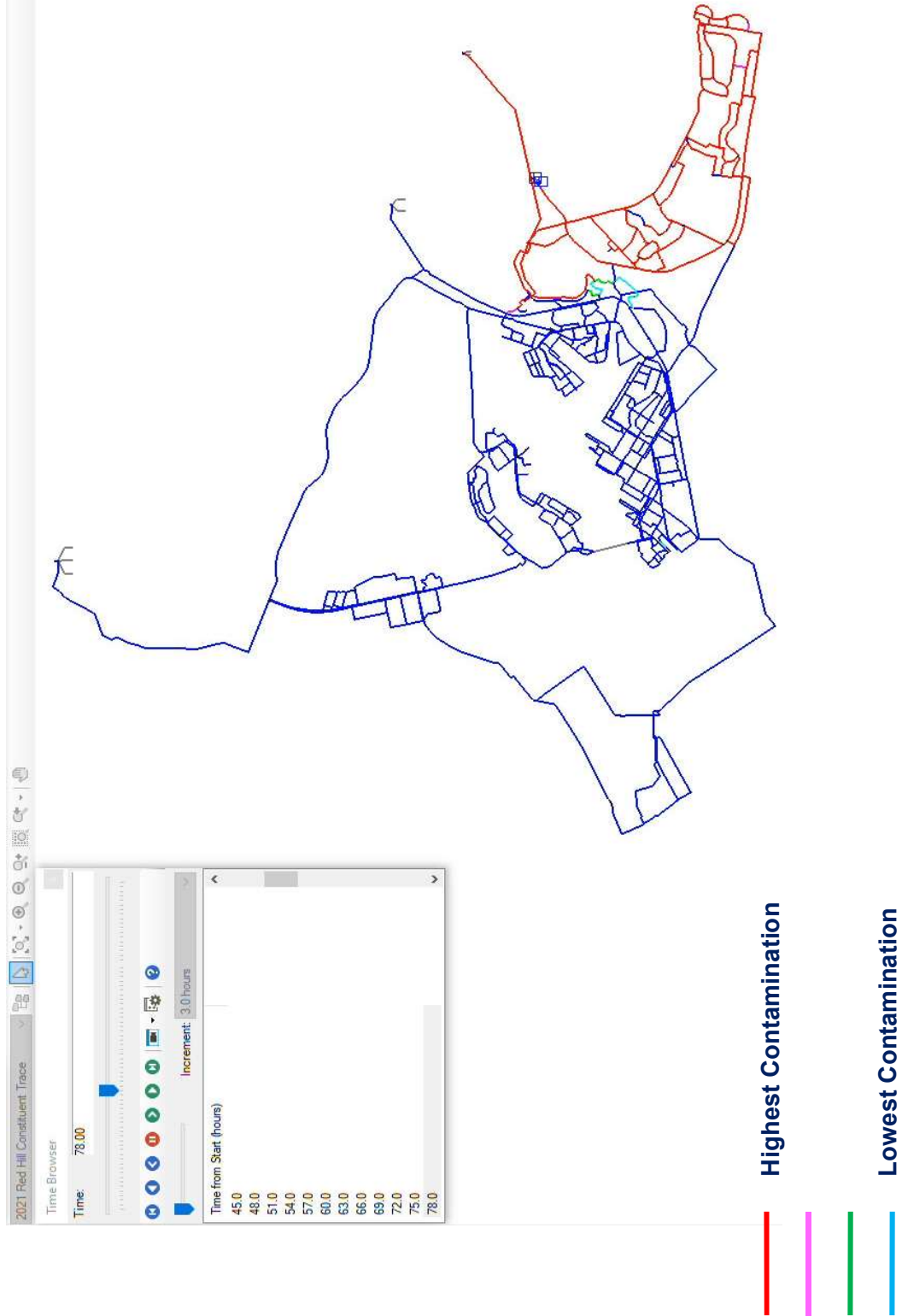


# JBP HH Hydraulic Model



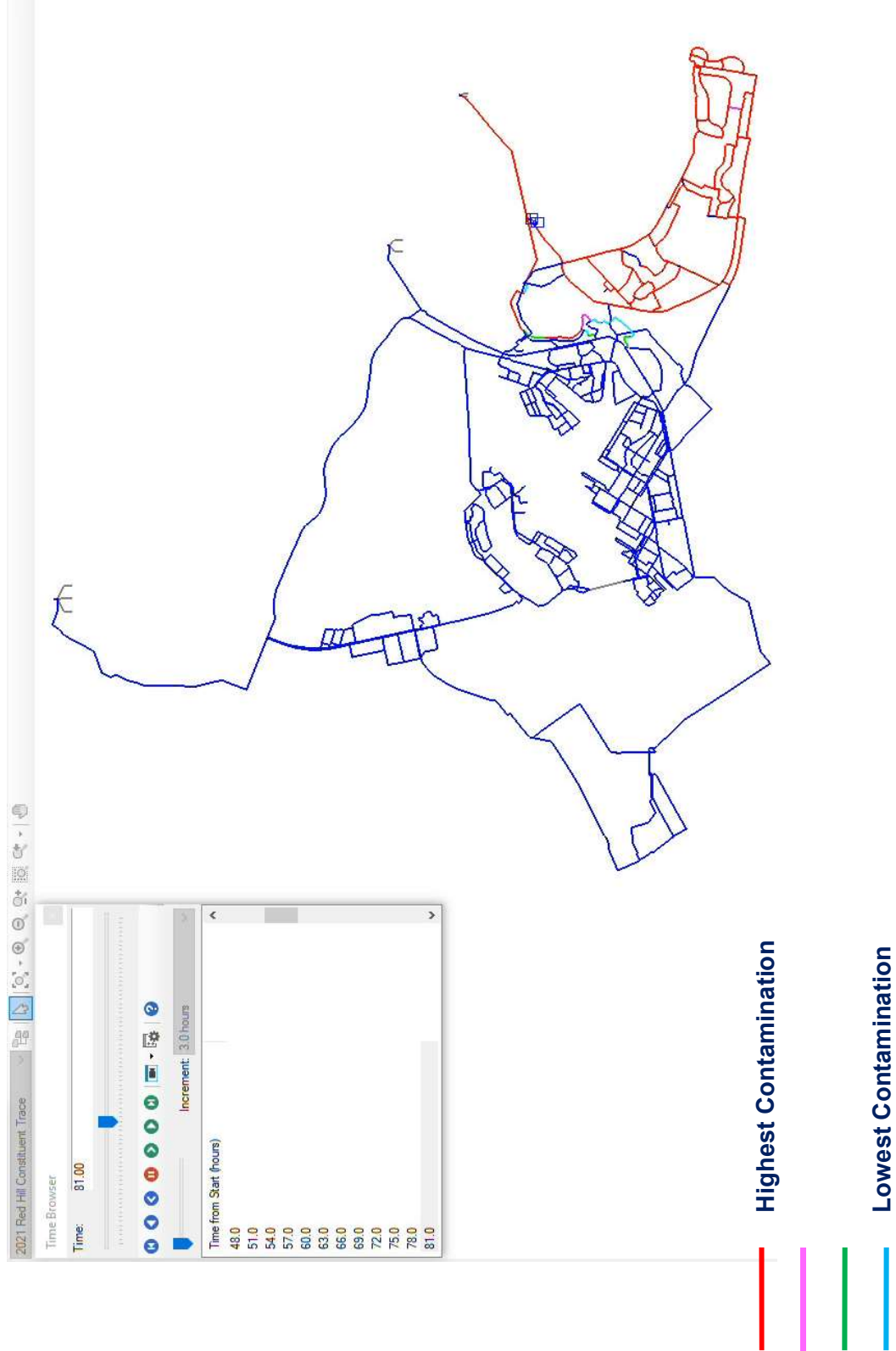


# JBP HH Hydraulic Model



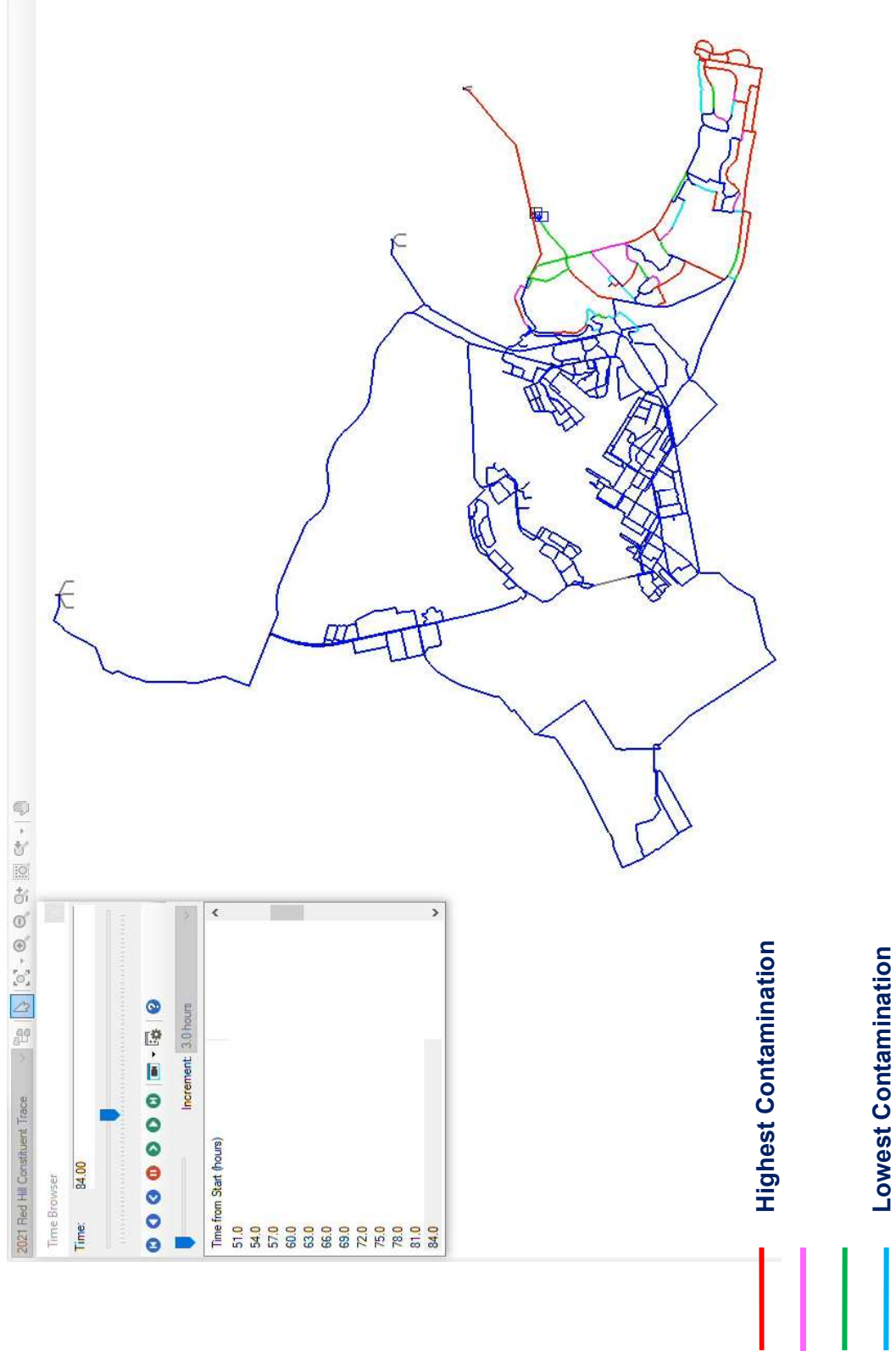


# JBP HH Hydraulic Model





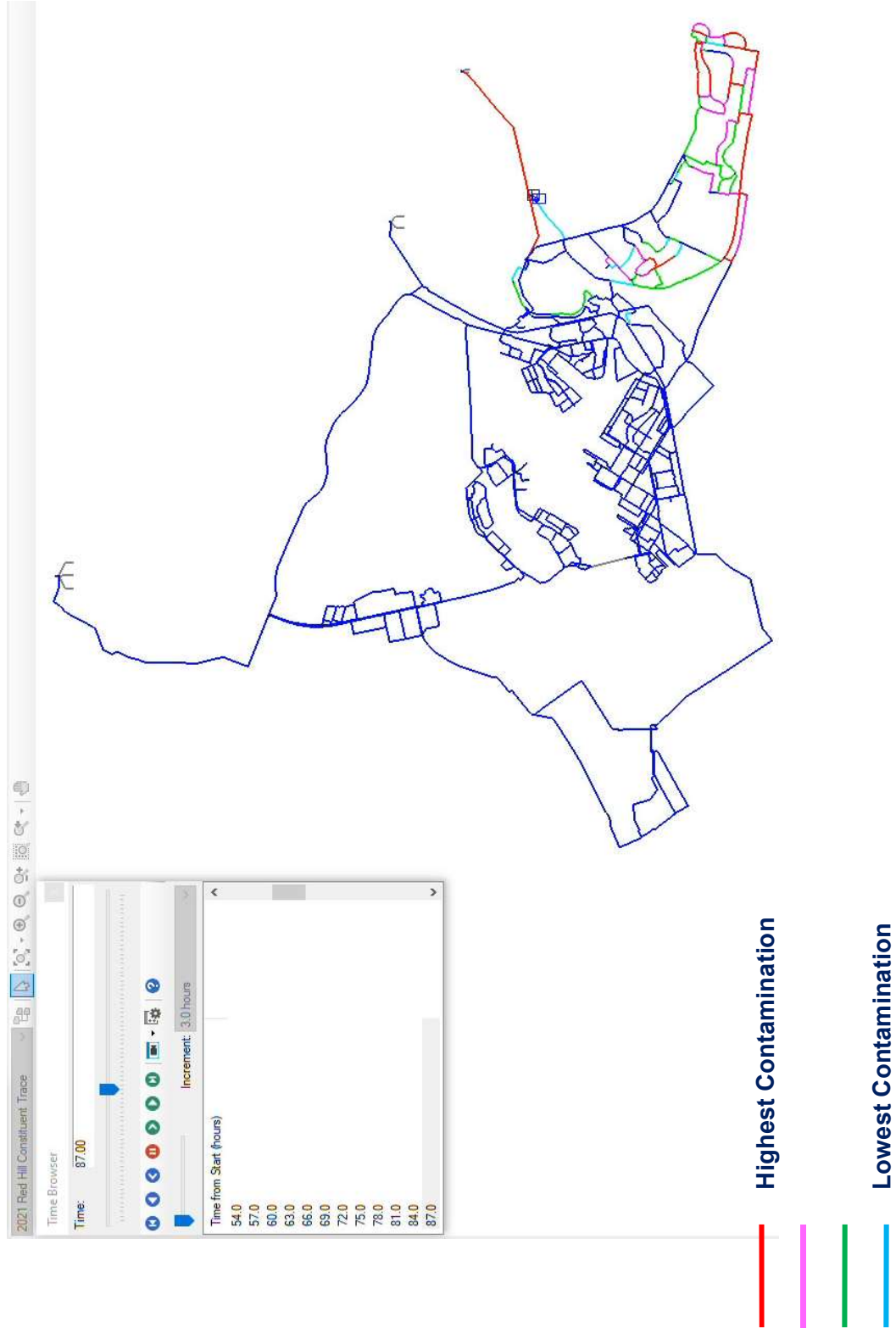
# JBP HH Hydraulic Model





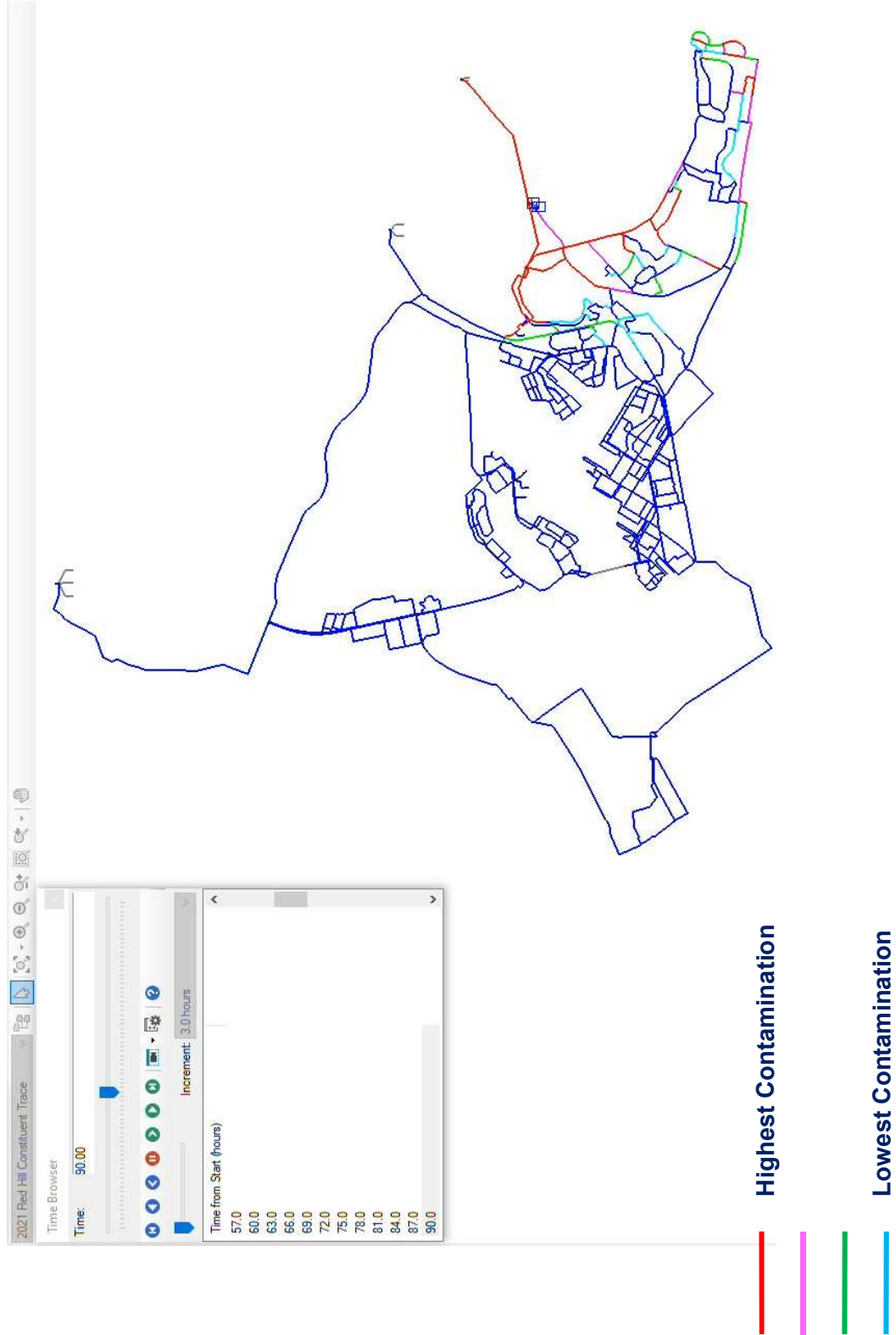


# JBP HH Hydraulic Model





# JBP HH Hydraulic Model

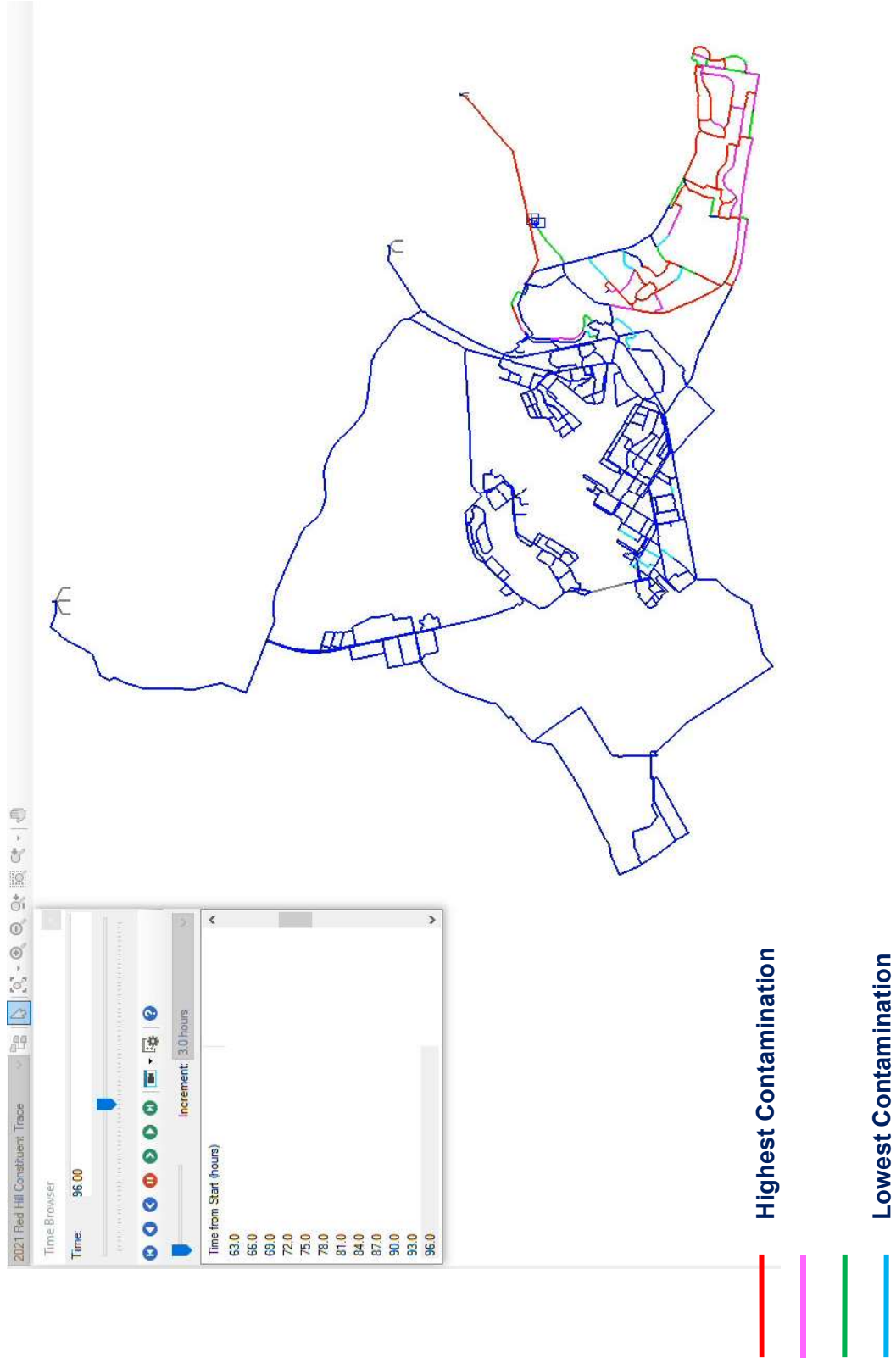




# JBP HH Hydraulic Model

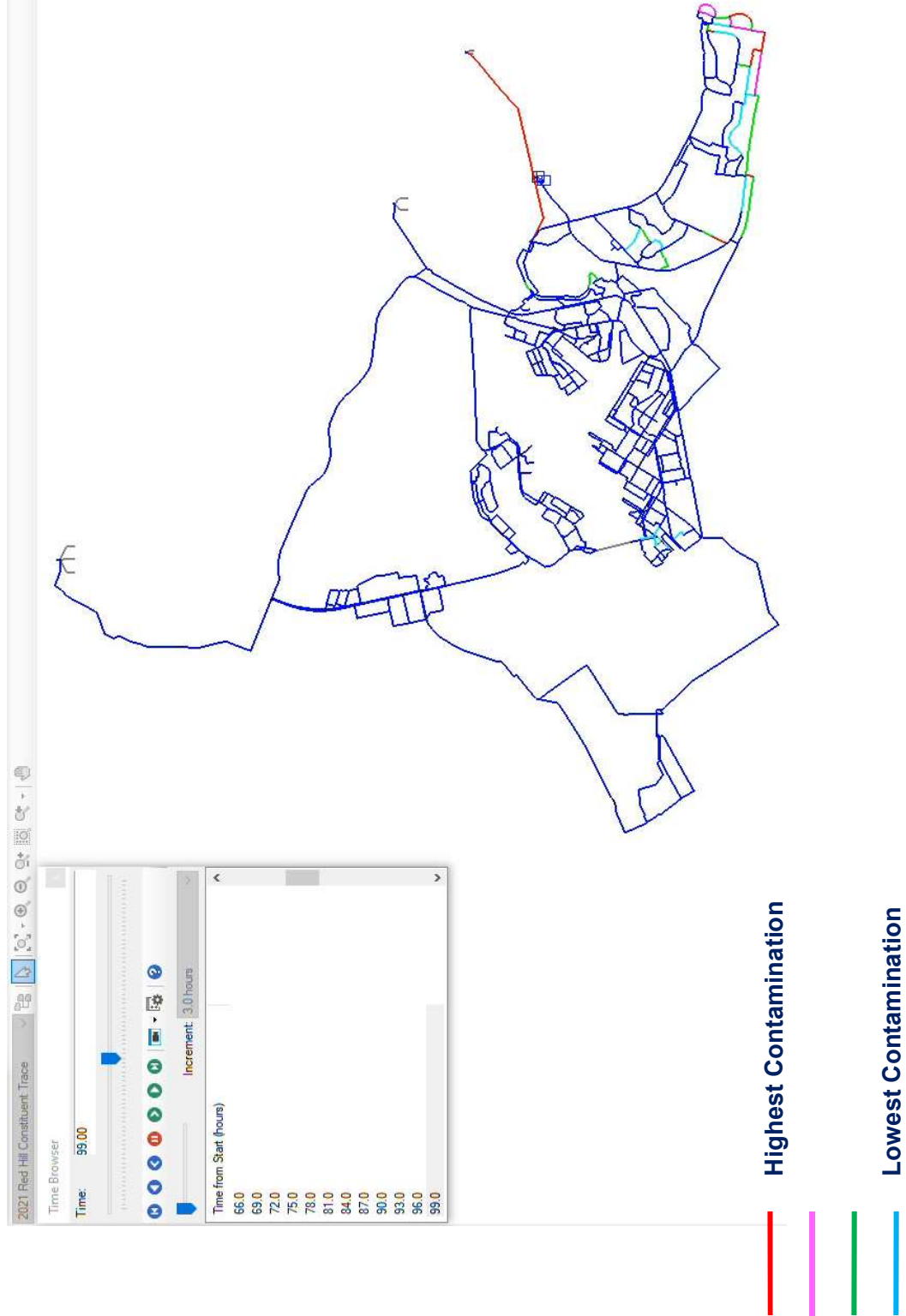


# JBP HH Hydraulic Model



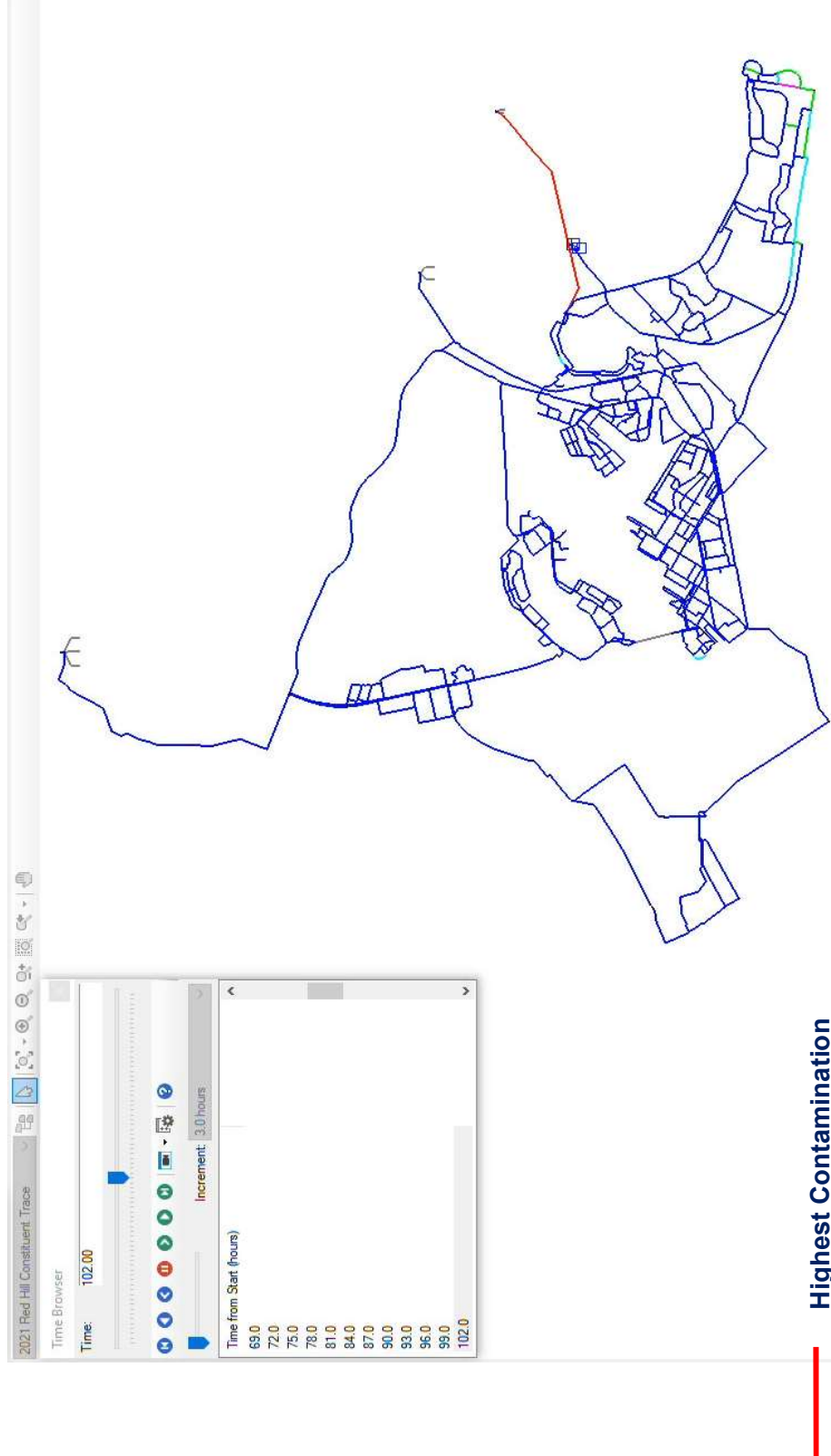


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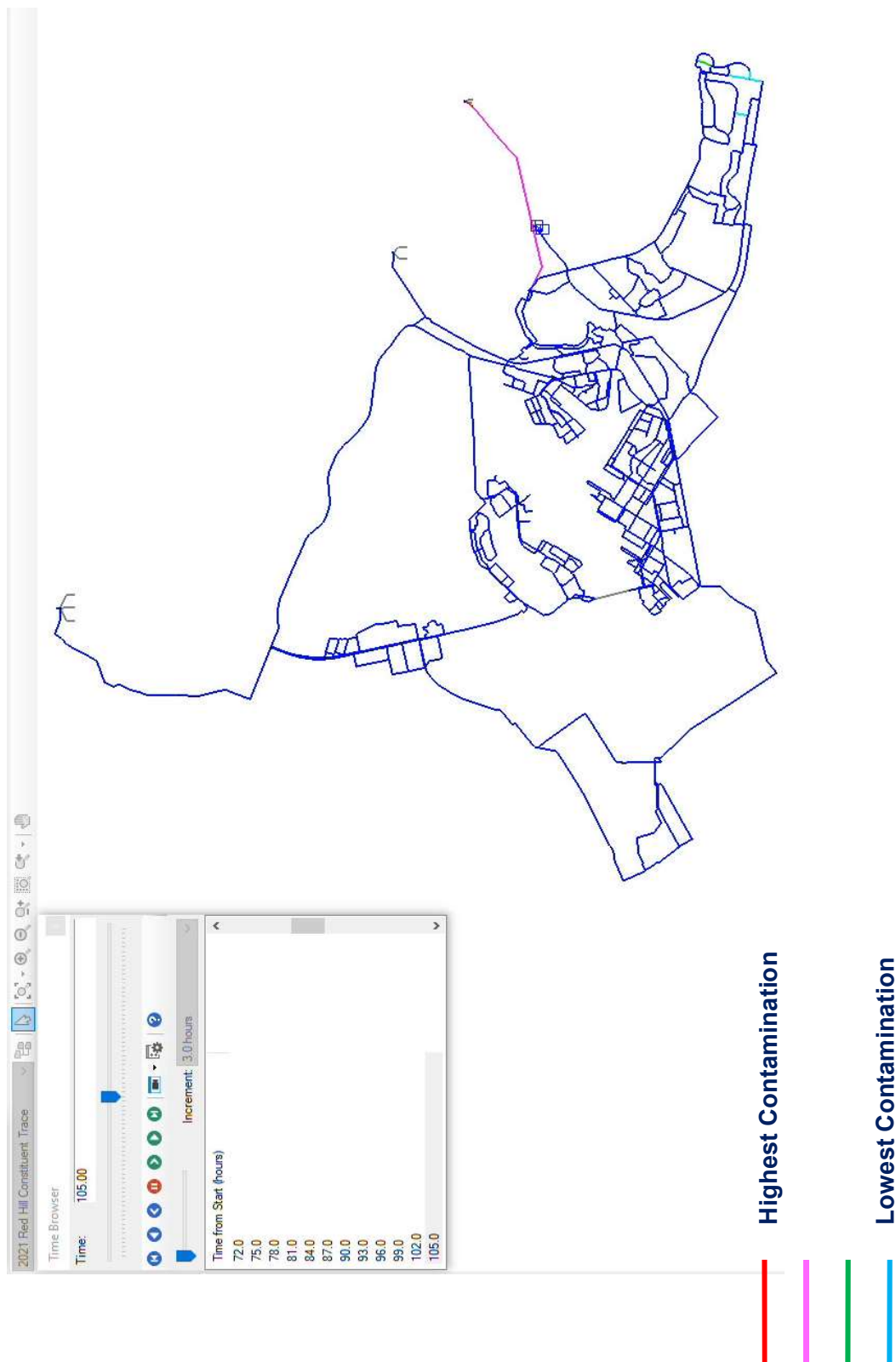
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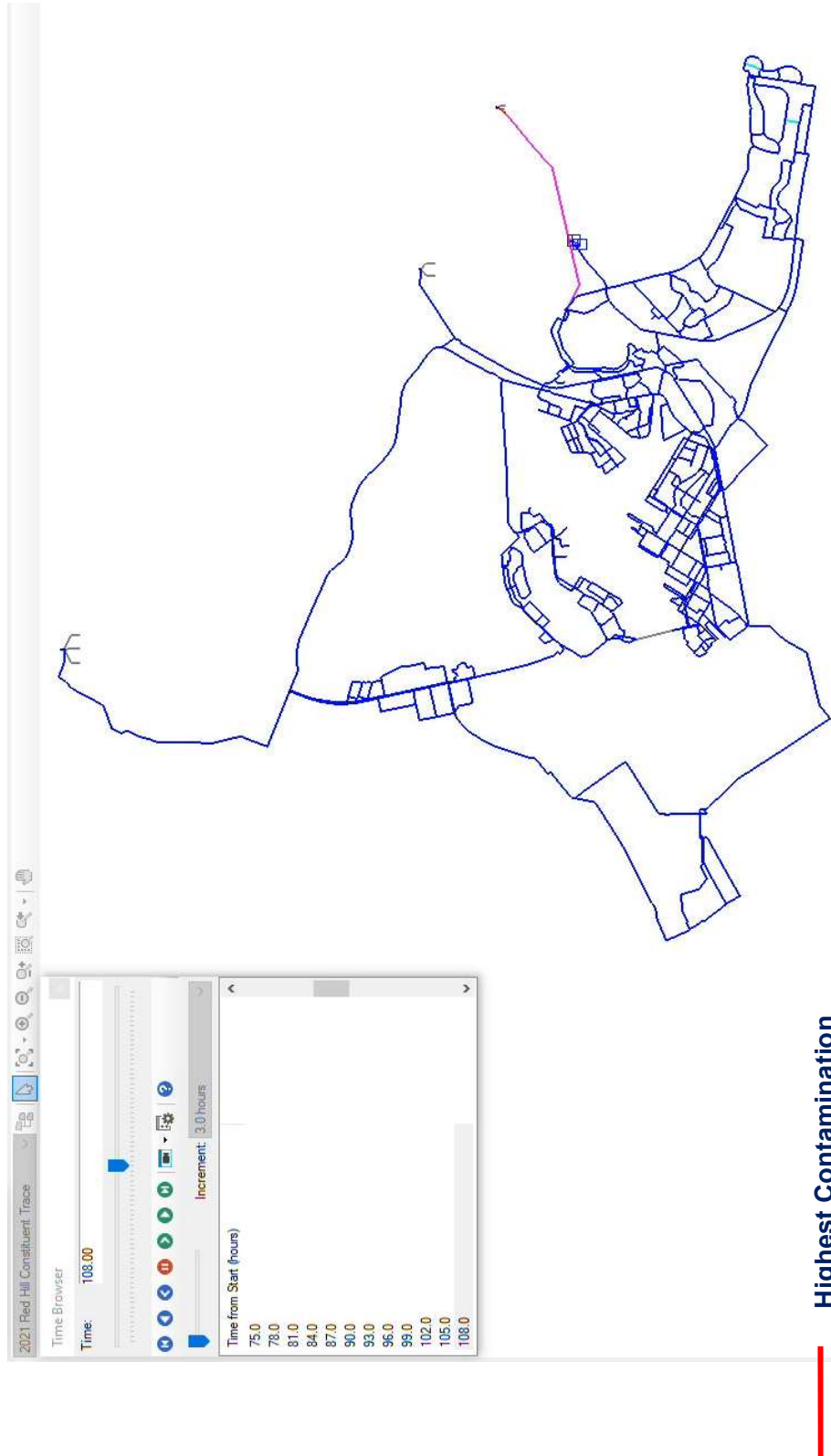


# JBP HH Hydraulic Model



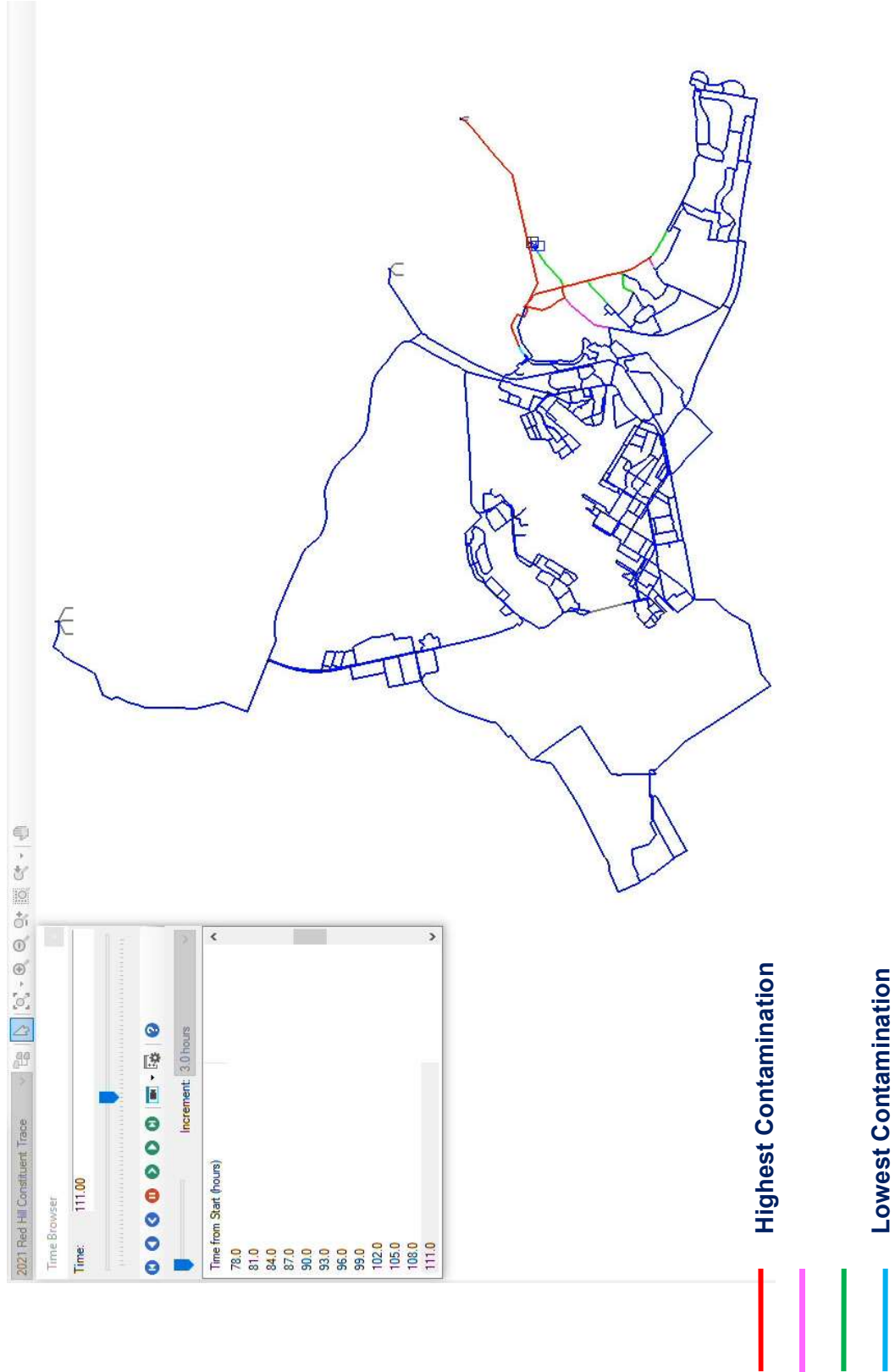


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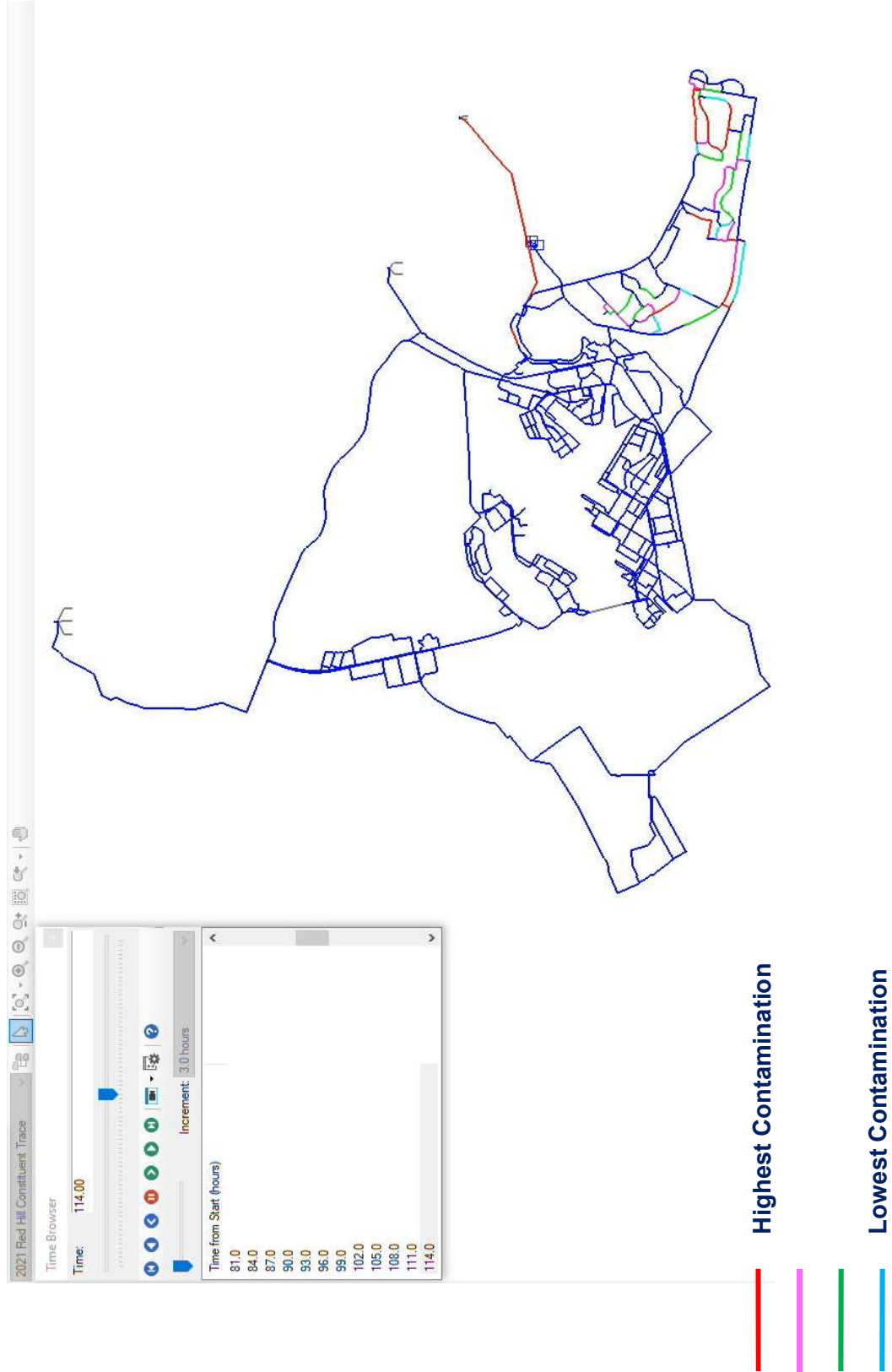




# JBP HH Hydraulic Model

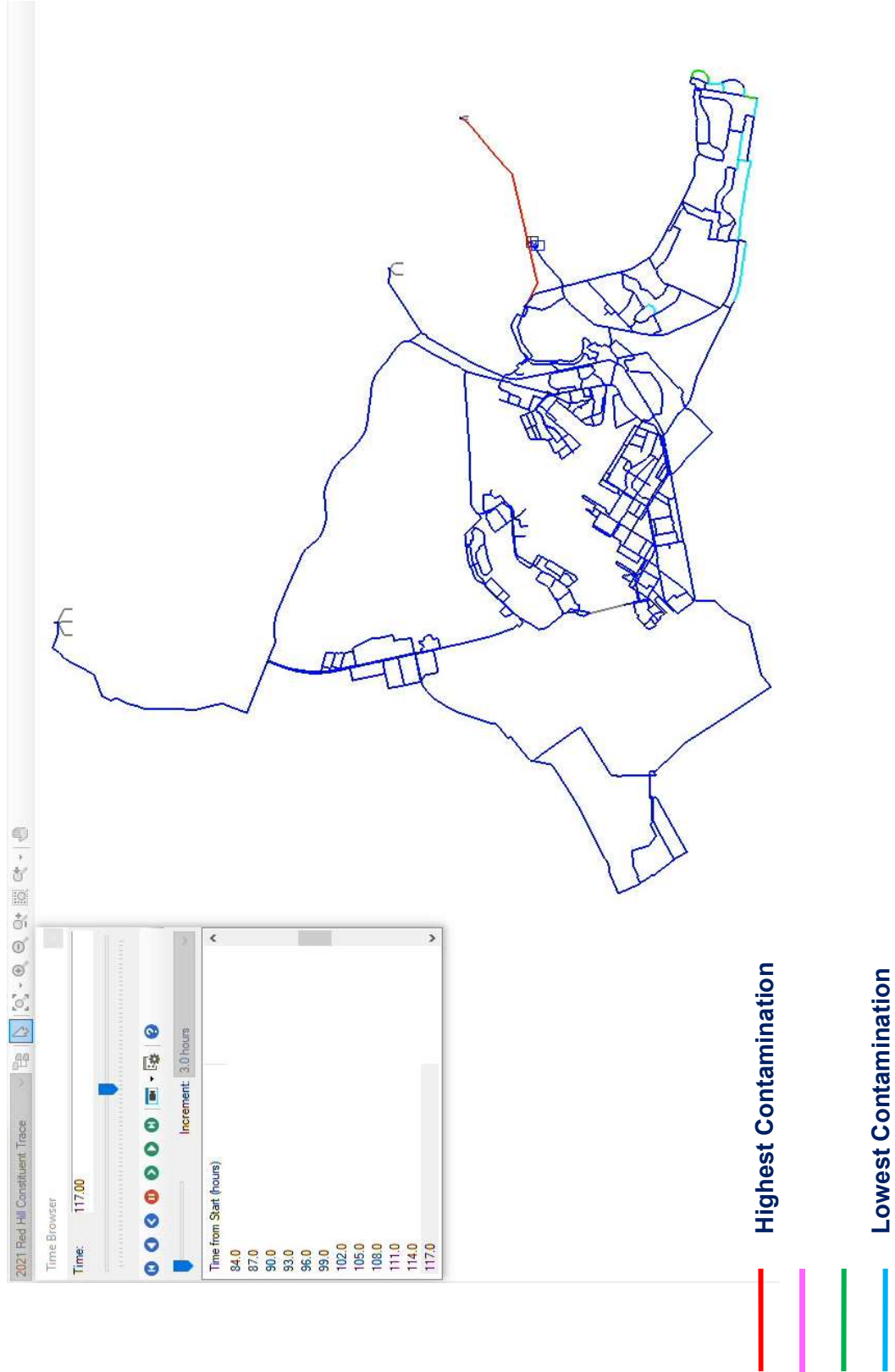


# JBP HH Hydraulic Model





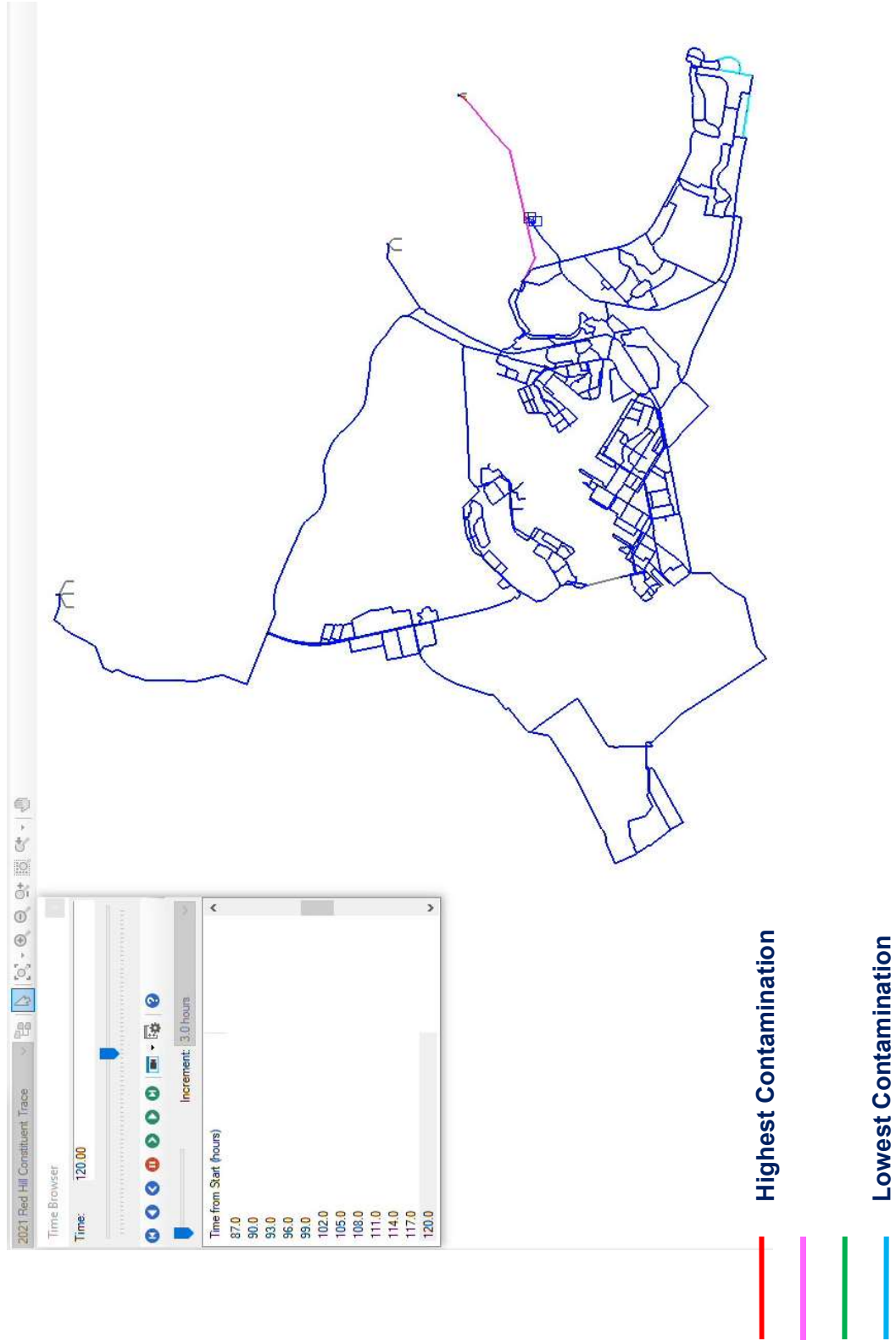
# JBP HH Hydraulic Model





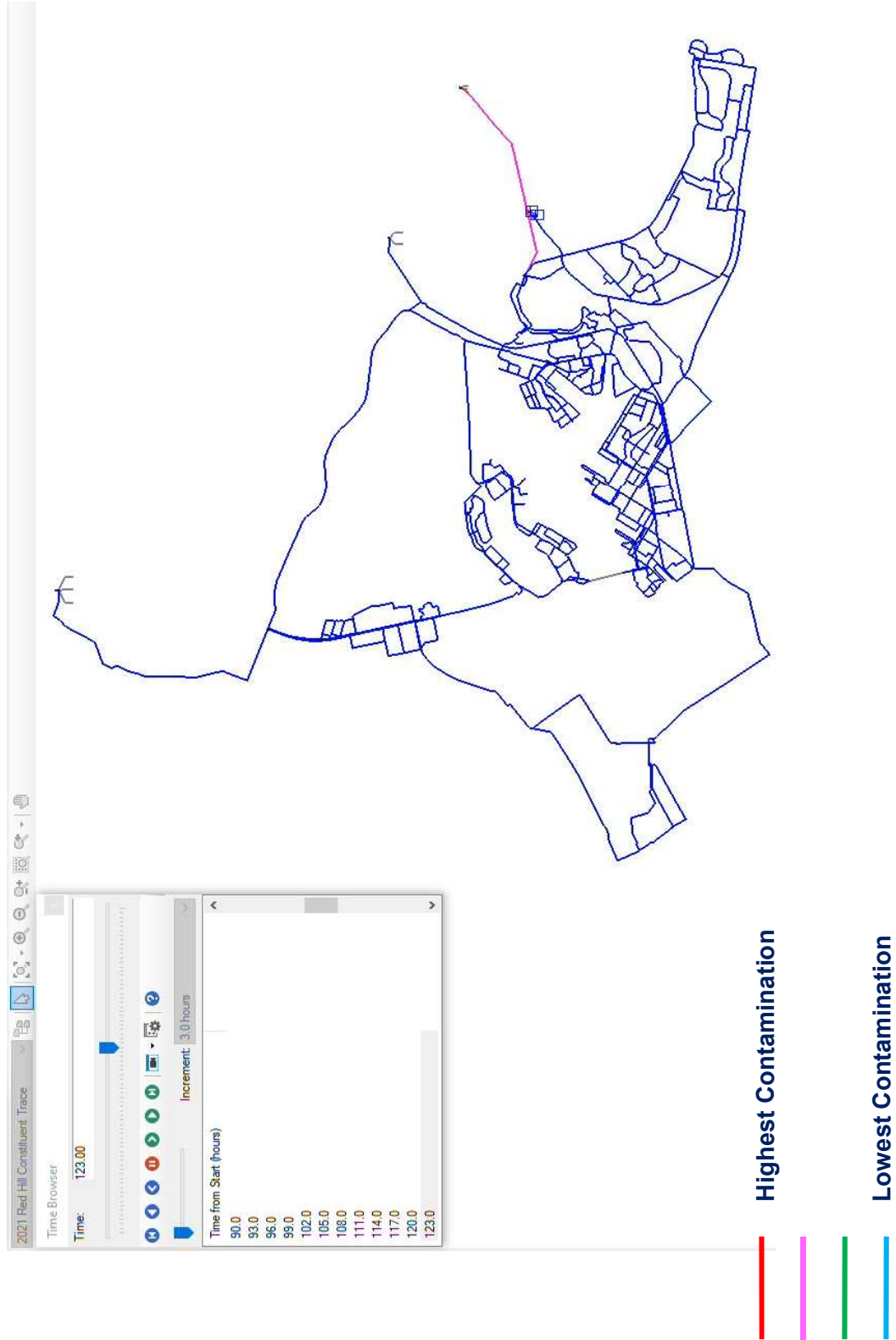


# JBP HH Hydraulic Model

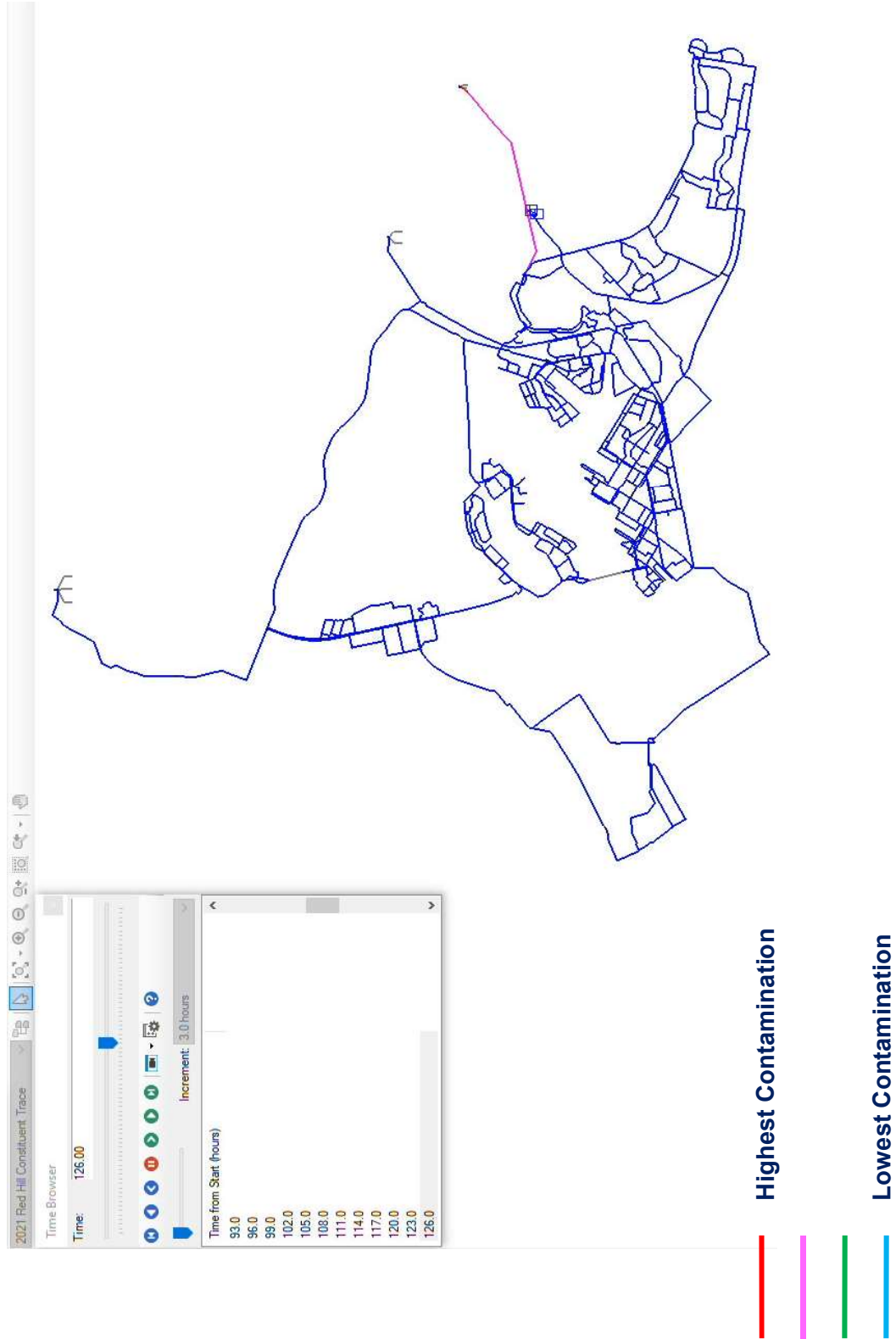




# JBP HH Hydraulic Model

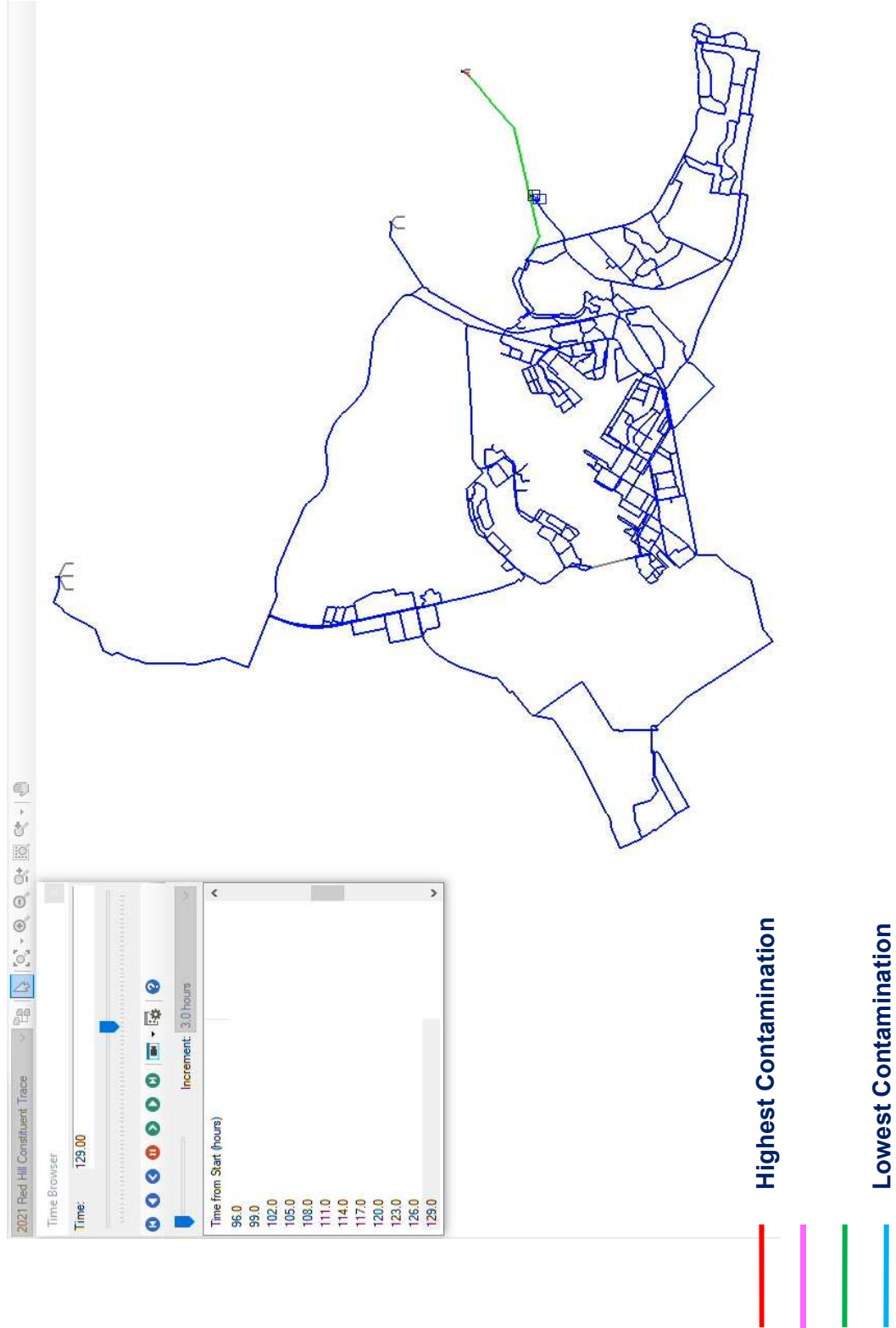


# JBP HH Hydraulic Model



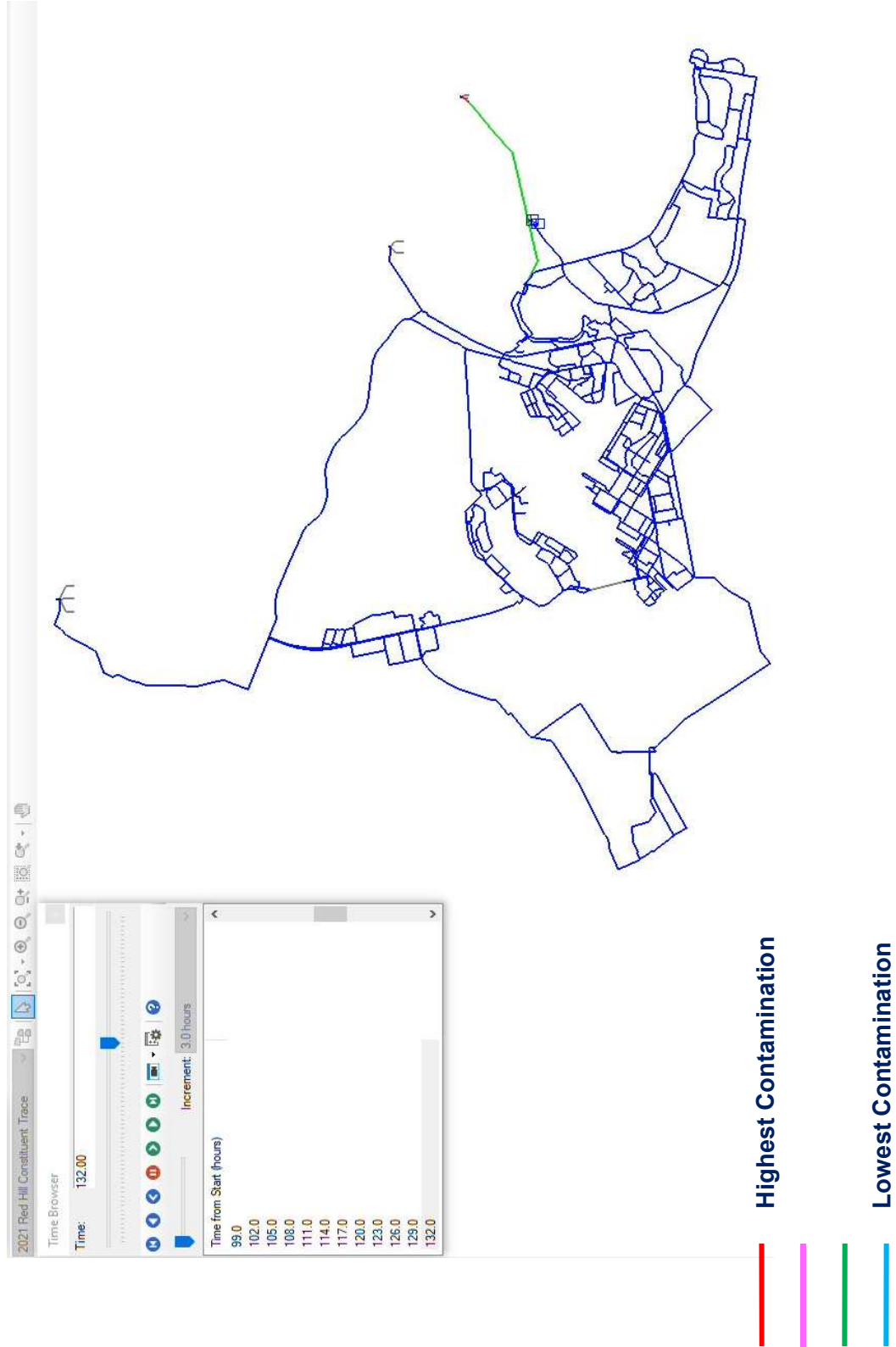


# JBP HH Hydraulic Model





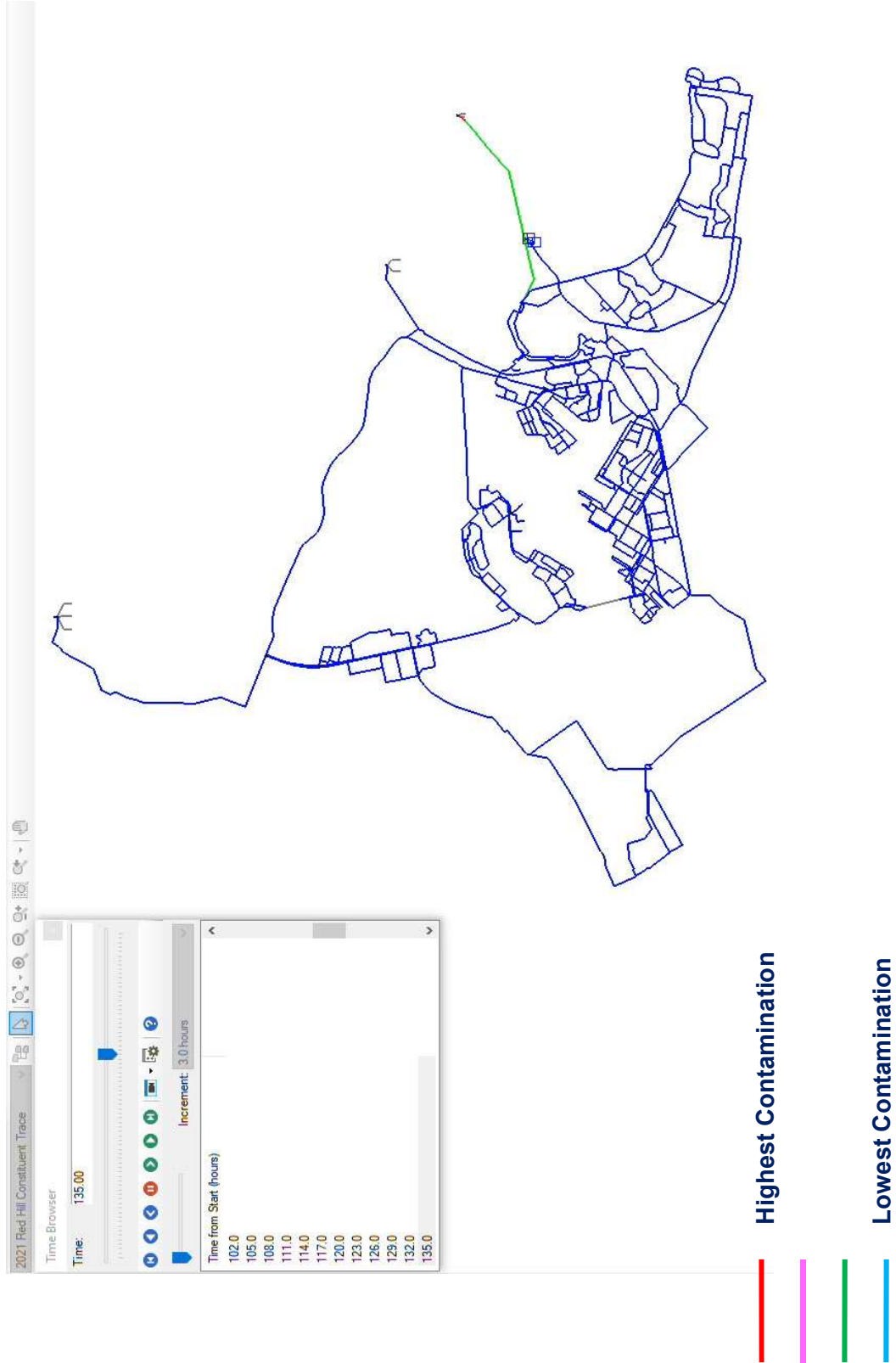
# JBP HH Hydraulic Model





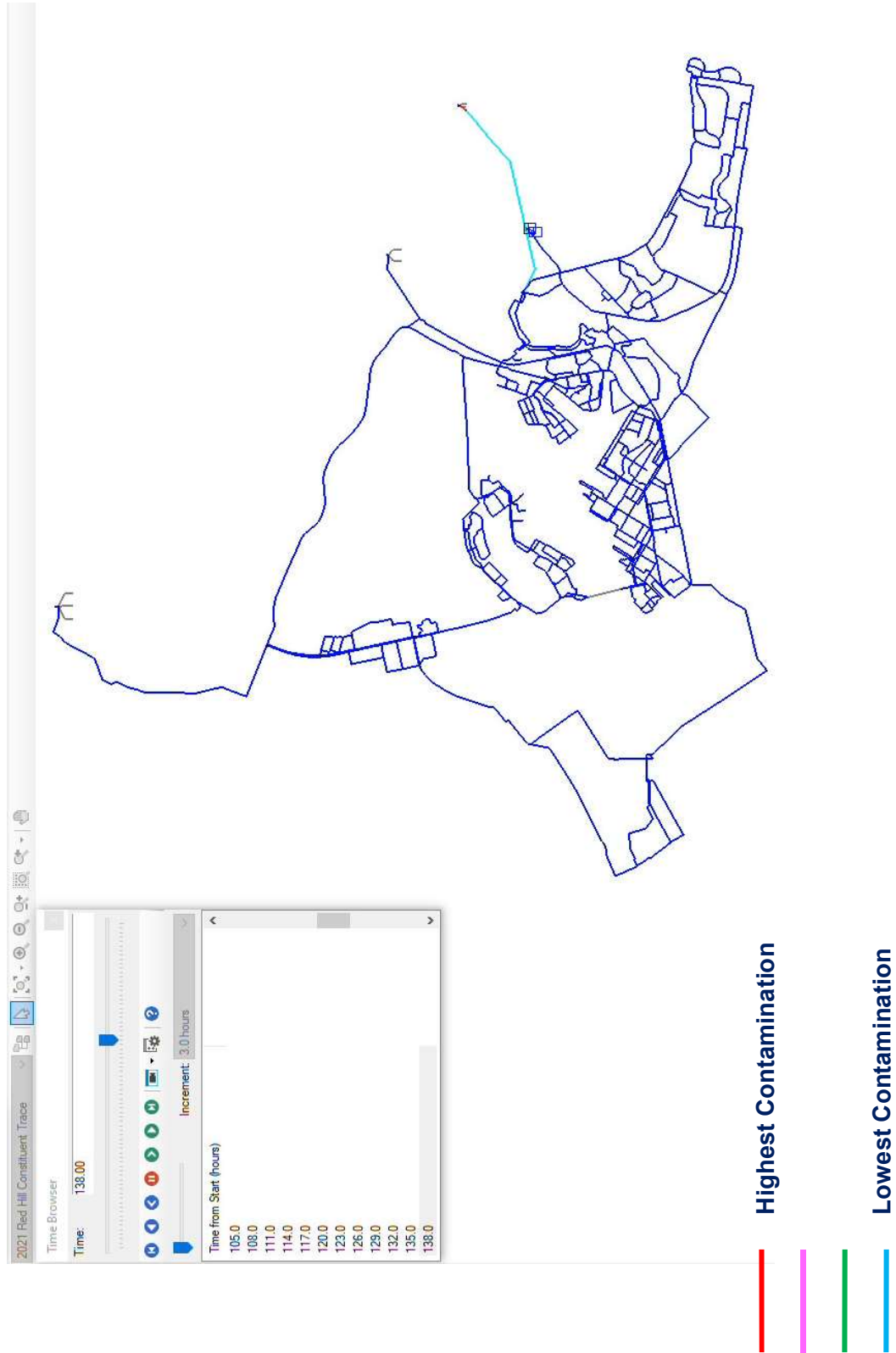


# JBP HH Hydraulic Model





# JBP HH Hydraulic Model



RESTORE DRINKING  
WATER  
AUGMENTED  
DISTRIBUTION SAMPLING

SCALE AND NORTH:  

0 250 500  
Feet  
N

SITE LOCATION:

LEGEND:  

★

HYDRANT SAMPLE  
LOCATION

LAND

STORM

WATER MAIN

ROAD

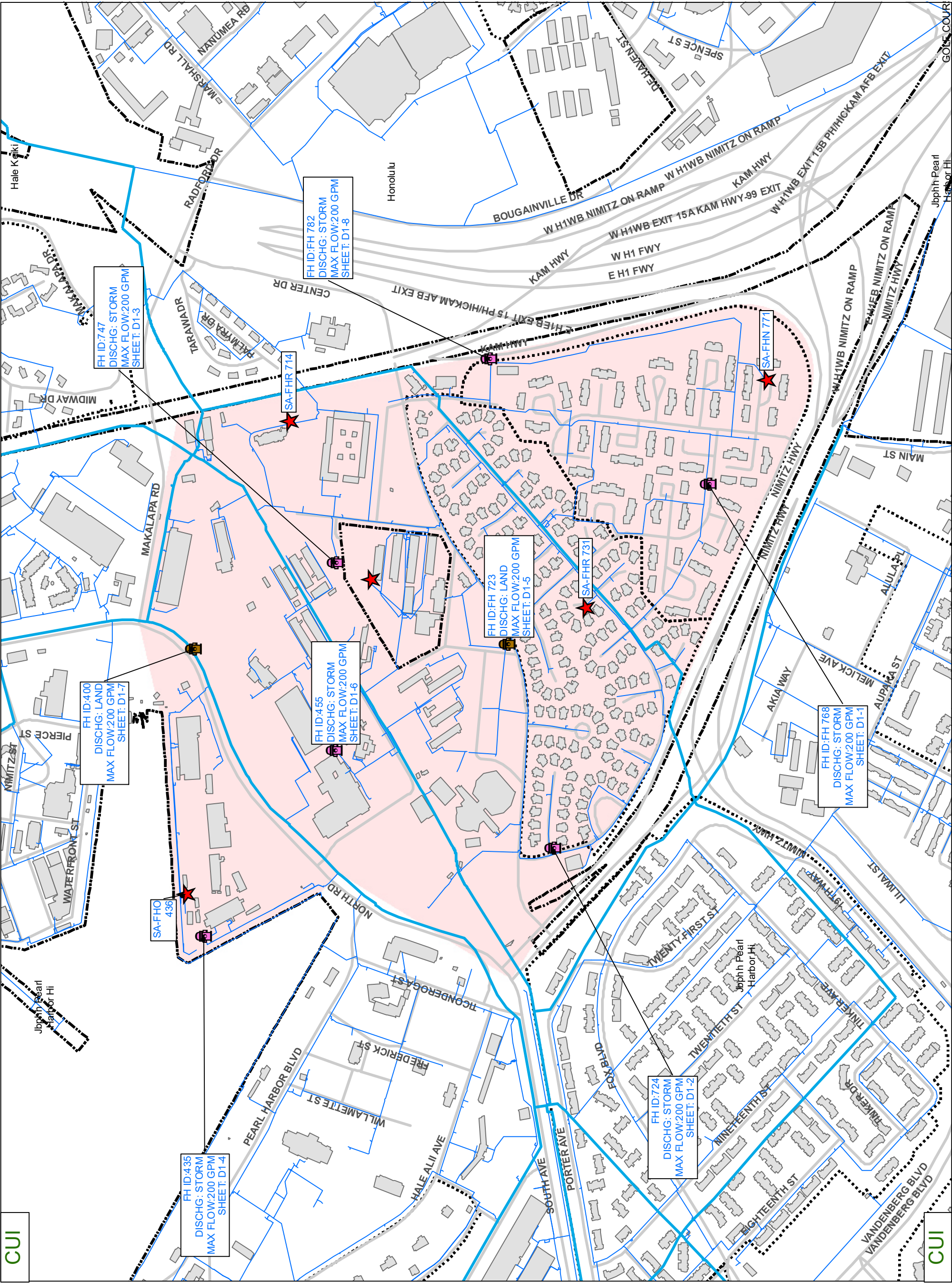
INSTALLATION  
BOUNDARY

FLUSH ZONE

REVISION DATE:  
07 JAN 22

PLAN VERSION:  
REV 0

AREA ID:  
D1



Section 2a.4 Records of Completed Volumetric Exchanges

400	Shift		Flush Time		Documentation	
Date	Begin	End	Start	Stop	RunTime	UT Log
27-Dec	20:00	8:00	1:28		6:32 20211227 2000-0800	N/A
28-Dec	8:00	20:00		9:51	1:51 20211227 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 8:23  VOLUME 100600 Gallons </div>						

435	Shift		Flush Time		Documentation	
Date	Begin	End	Start	Stop	RunTime	UT Log
22-Dec	14:00	22:00	17:07		2:53 20211222 1400-2200	N/A
22-Dec	22:00	6:00	2:50		3:10 20211222 2200-0600	N/A
23-Dec	6:00	14:00		9:08	3:08 20211223 0600 -1400	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 9:11  VOLUME 110200 Gallons </div>						

455	Shift		Flush Time		Documentation	
Date	Begin	End	Start	Stop	RunTime	UT Log
27-Dec	8:00	20:00	19:49		0:11 20211227 0800-2000	N/A
27-Dec	20:00	8:00			12:00 20211227 2000 -0800	N/A
28-Dec	8:00	20:00		9:39	1:39 20211228 0800-2000	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 13:50  VOLUME 166000 Gallons </div>						

723	Shift		Flush Time		Documentation	
Date	Begin	End	Start	Stop	RunTime	UT Log
24-Dec	6:00	14:00		9:57	4:03 20211224 0600-1400	N/A
24-Dec	14:00	22:00		14:35	7:25 20211224 1400-22:00	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 11:28  VOLUME 137600 Gallons </div>						

724	Shift		Flush Time		Documentation	
Date	Begin	End	Start	Stop	RunTime	UT Log
24-Dec	6:00	14:00		13:43	0:17 20211224 0600-1400	N/A
21-Dec	14:00	22:00		15:35	1:35 20211224 1400-2200	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 1:52  VOLUME 22400 Gallons </div>						

747	Shift		Flush Time		Documentation	
Date	Begin	End	Start	Stop	RunTime	UT Log
26-Dec	14:00	22:00		15:31	6:29 20211226 1400-2200	N/A
26-Dec	22:00	6:00			8:00 20211226 1400-2200	N/A
27-Dec	6:00	14:00		11:00	5:00 20211226 1400-2200	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 19:29  VOLUME 233800 Gallons </div>						

768	Shift		Flush Time		Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log
23-Dec	22:00	6:00	23:45		6:15	20211223 2200-0600	N/A
24-Dec	6:00	14:00		9:25	3:25	20211224 0600 -1400	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 9:40  VOLUME 116000 Gallons </div>							

Hydrant	Volume
400	100,600
435	110,200
455	166,000
723	137,600
724	22,400
747	233,800
768	116,000
782	79,600
<b>TOTAL</b>	<b>966,200</b>

782	Shift		Flush Time		Documentation		
Date	Begin	End	Start	Stop	RunTime	Email Summary	UT Log
25-Dec	14:00	22:00	18:51		3:09	20211225 1400-2200	N/A
25-Dec	22:00	6:00		0:15	2:15	20211225 2200 -0600	N/A
26-Dec	6:00	14:00	9:16		4:44	20211226 0600-1400	Y
26-Dec	14:00	22:00		14:40	0:40	20211226 1400-2200	N/A
26-Dec	22:00	6:00	3:03		2:57	20211226 2200-0600	N/A
27-Dec	6:00	14:00		7:14	1:14	20211227 0600-1400	N/A
<div> TOTAL RUN @ FLOW of 200  TIME 6:38  VOLUME 79600 Gallons </div>							



## **NOTE TO REVIEWER:**

FLUSH LOGS WERE COMPLETED BY WATCH STANDERS THAT MAY NOT HAVE HAD THE TECHNICAL OR OVERALL KNOWLEDGE OF THE DISTRIBUTION FLUSHING PLAN. **LT CRUZ** WAS THE OFFICER IN CHARGE OF THE FIELD OPERATIONS AND CROSS REFERENCED THE FLUSH LOGS WITH THE ROVING SEABEE UTILITIESMAN LOGS TO VALIDATE THE TIMES. THE NOTES YOU SEE IN RED ARE VALIDATED ZONES, HYDRANTS, AND TIMES AS NEEDED.

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Tuesday, December 28, 2021 11:35 AM  
**To:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN; Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); austin.a.kelly3; Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Lett, Julius J SMSgt USAF (USA)  
**Cc:** 15CES.UCC@us.af.mil  
**Subject:** INFO: 20211228 2000L - 0800L JBPHH DWDSRP Flush Report  
**Attachments:** 20211228 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

BLUF: The US Army has assumed the distribution flushing watch with 647 CES UCC over watch a/o 0800, 27 Dec 21. They will conduct 12-hour shifts changing at 0800L and 2000L over a 24-hour period.

Please see the attached flush report for Monday/Tuesday, 27/28 Dec 21, 2000L – 0600L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 400 – Started Flushing 0128L  
D1 FH ID 455 – Continuously Flushed This Period  
D2 FH ID 006 – Started Flushing 2007L  
D2 FH ID 030 – Started Flushing 1950L  
D2 FH ID 074 – Started Flushing 2022L  
D2 FH ID 293 – Started Flushing 0108L  
F1 FH ID FH-8 (No GAC) – Continuously Flushed This Period  
F1 FH ID 11A – Continuously Flushed This Period  
F1 FH ID 018 – Continuously Flushed This Period  
F1 FH ID 021 – Continuously Flushed This Period  
F1 FH ID 36A – Continuously Flushed This Period  
F1 FH ID 606 – Continuously Flushed This Period  
F1 FH ID 613 – Continuously Flushed This Period

r/

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3



## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 2021/2/28

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: A# D1

Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.



	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 20211228 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0131 Flushing End Time: 0845

Signed By

Hernandez Marco/SPC/ 2-14

Printed Name / Rank / Organization

20211221

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** AhLeong, Peter A MSgt USAF 647 ABG (USA) <peter.a.ahleong1@navy.mil>  
**Sent:** Tuesday, December 28, 2021 11:34 PM  
**To:** Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Wiley, Scottie R Capt USAF 647 ABG (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211228 0800L - 2000L JBPBH DWDSRP Flush Report  
**Attachments:** 20211228 0800L - 2000L JPBHH KDWDSRP Flush Report.pdf  
**Signed By:** peter.ahleong@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Tuesday, 28 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Flushing stopped 0939L  
D2 FH ID 30 – Flushing stopped 1030L  
F1 FH ID FH-8 (No GAC) – Flushing on  
F1 FH ID 606 – Flushing on  
F1 FH ID 613 – Flushing paused 1157L (field flooded)  
F1 FH ID 36A – Flushing on  
F1 FH ID 21 – Flushing on  
F1 FH ID 11A – Flushing on  
F1 FH ID 18 – Flushing on  
D1 FH ID 6 - Flushing on  
D2 FH ID 74 - Flushing stopped 1031L  
D2 FH ID 293 – Flushing stopped 0939L  
D1 FH ID 400 – Flushing stopped 0951L  
D2 FH ID 41 – Flushing started 1050L  
A2 FH ID 7-1 – Flushing started 1501L

A2 FH ID 2-7 – Flushing started 1647L

Respectfully,

MSgt Peter A. Ahleong  
Mechanical Services Element Superintendent  
Naval Facilities Engineering Systems Command, Hawaii  
647<sup>th</sup> Civil Engineer Squadron, JBPHH, HI  
808-471-0374

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Williams, Malcolm J Capt USAF 647 ABG (USA)  
**Sent:** Wednesday, December 22, 2021 11:06 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA)  
**Cc:** WILLIAMS, MALCOLM J Capt USAF PACAF 647 CES/CEN; Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA)  
**Subject:** RE: INFO: 20211222 1400L - 2200L JBPHH DWDSRP Flush Report  
**Attachments:** 20211222 1400 - 2200 JBPHHH DWDSRP Flush Report.pdf  
**Signed By:** malcolm.williams.4@us.af.mil

Ma'am & Gentlemen,

Please see the attached flush reports for period Wednesday, 22 Dec 21, **1400L – 2200L**. [See below for quick update on Hydrant Flushing.](#)

**D1 FH ID 435 – Flushed from 1707L – 2000L**  
**F1 FH ID 22 – Stopped Flushing at 2117L**  
**F1 FH ID FH-8 (No GAC) – Stopped Flush at 1610L**  
**F1 FH ID 11A – Stopped Flushing at 2126L**  
**F1 FH ID 613 – Stopped Flushing at 1517L**  
**F1 FH ID 36A – Stopped Flushing at 2108L**  
**F1 FH ID 18 – Stopped Flushing at 2051L**  
**F1 FH 606 – Stopped Flushing at 2058L**

Please let me know if you have any questions.

Mahalo  
Have a blessed day,

Malcolm Williams, Capt, USAF  
USAF Planner  
Facility Management Division  
Joint Base Pearl Harbor-Hickam, Hawaii  
DSN: 449-0006

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SrA Felix Chen Huang Agency: 647 CES  
 Zone ID (A1, etc.): A2D1 <sup>FCH 20211222</sup> Date: 22 December 2021 Time: 1500  
 Coordinates (latitude and longitude): (13A) 21.352182, -157.943446  
 Associated Flushing Report ID: I-13-A 435 <sup>FCH 20211222</sup>

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>65</u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

N/A

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Fish Dead <u>N/A</u>	Abnormal Animal Behavior Near Discharge? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Invertebrates Dead <u>N/A</u>	Invertebrates collected? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Dead <u>N/A</u>	Notes (describe any yes):



## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:

*Petix Chantong*

Date:

22 Dec 21

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1 (435) Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 22 Dec 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1700 Flushing End Time: 2000

Signed By

Felix Chen Huang / SrA / GATCES

22 Dec 21

Printed Name / Rank / Organization

Date

Felix Chen Huang

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Thursday, December 23, 2021 10:02 AM  
**To:** Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA)  
**Cc:** WILLIAMS, MALCOLM J Capt USAF PACAF 647 CES/CEN; Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Williams, Malcolm J Capt USAF 647 ABG (USA)  
**Subject:** INFO: 20211223 2200L - 0600L JBPHH DWDSRP Flush Report  
**Attachments:** 20211223 2200 - 0600 JBPHH DWDSRP Flush Report.pdf

Ma'am & Gentlemen,

Please see the attached flush reports for period Wednesday/Thursday, 22/23 Dec 21, 2200L – 0600L. A summary update on distribution flushing is listed below for this period.

D1 FH ID 435 – Flushing Resumed 0250L  
F1 FH ID 18 – Flushing Resumed 0251L  
F1 FH 606 – Flushing Resumed 0258L  
F1 FH ID 36A – Flushing Resumed 0308L  
F1 FH ID 22 – Flushing Resumed 0317L  
F1 FH ID 11A – Flushing Resumed 0324L  
F1 FH ID 613 – Flushing Paused (a/o 22 Dec 21 at 1517L)  
F1 FH ID FH-8 (No GAC) – Flushing Resumed 0350L

Please let me know if you have any questions.

r/

srw

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3  
Naval Facilities Engineering Systems Command, Hawaii  
400 Marshall Road JBPHH HI 96860-3139  
DSN (315) 471-4485  
Comm: (808) 471-4485  
Gov Cell: (808) 295-2106

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Hogan / Sambrauo Agency: NAVFAC HI  
 Zone ID (A1, etc.): D1 Date: 2/12/22 Time: 0545

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH-435

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>25</u> % cloud cover	<u>25</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>none</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Fish Dead <u>0</u>	Abnormal Animal Behavior Near Discharge? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Invertebrates Dead <u>0</u>	Invertebrates collected? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Dead <u>0</u>	Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols



## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: \_\_\_\_\_



Date: \_\_\_\_\_

12/23/21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: P1

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 12/23/21 Estimated Volume: \_\_\_\_\_  
 Flushing Start Time: 0530 Flushing End Time: N/A

Signed By

ROGER SAMBRANO / SM / NAVFAC 41

Printed Name / Rank / Organization

12/23/21

Date

  
 Signature

## Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)

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**From:** Williams, Malcolm J Capt USAF 647 ABG (USA)  
**Sent:** Thursday, December 23, 2021 3:30 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA)  
**Cc:** WILLIAMS, MALCOLM J Capt USAF PACAF 647 CES/CEN; Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA)  
**Subject:** RE: INFO: 20211223 0600L - 1400L JBPHH DWDSRP Flush Report  
**Attachments:** 20211223 0600 - 1400 JBPHH DWDSRP Flush Report.pdf  
**Signed By:** malcolm.williams.4@us.af.mil

Ma'am & Gentlemen,

Please see the attached flush reports for period Thursday, 23 Dec 21, **0600L – 1400L**. A summary update on distribution flushing is listed below for this period.

D1 FH ID 435 – Flushing **Stopped 0908L**  
F1 FH ID 18 – Flushing **Stopped 0823L**  
F1 FH 606 – Flushing **Stopped 0829L**  
F1 FH ID 36A – Flushing **Stopped 0841L**  
F1 FH ID 22 – Flushing **Stopped 0850L**  
F1 FH ID 11A – Flushing **Stopped 0856L**  
F1 FH ID 613 – Flushing Paused (a/o 22 Dec 21 at 1517L)  
F1 FH ID FH-8 (No GAC) – Flushing **Stopped 0819L**

Please let me know if you have any questions.

Mahalo  
Have a blessed day,

Malcolm Williams, Capt, USAF  
USAF Planner  
Facility Management Division  
Joint Base Pearl Harbor-Hickam, Hawaii  
DSN: 449-0006  
CE UCC: 808-789-5218

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SRA Santiago, Vares Agency: 647 CES

Zone ID (A1, etc.): D1 Date: 20211223 Time: 0600

Coordinates (latitude and longitude): 21.3520808, -157.9434134

Associated Flushing Report ID: FH FD-435

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>15</u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/> Don't know	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:


% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols



# Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 2021223

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System  
☒ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: D1 ~~455~~ FH ID-435 Map Attached: ☒ Yes ☒ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
	<input checked="" type="checkbox"/>		Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
		<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Storm Drain:
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
	<input checked="" type="checkbox"/>		Draining to Sanitary Sewer:
			Request Wastewater Treatment Plant consent
			Draining to Stream (Direct)
			Draining to Ocean (Direct)
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.

	X		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		X	Discharge water samples collected

Date of Flushing: 23 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0600 Flushing End Time: 1400

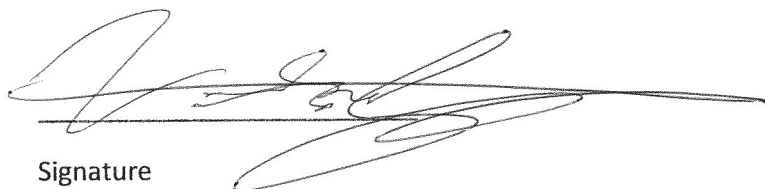
Signed By

Vanessa Santiago/SRA/64165

Printed Name / Rank / Organization

23 DEC 21

Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** KELLY, AUSTIN A 1st Lt USAF PACAF 647 CES/CEC <austin.kelly.2@us.af.mil>  
**Sent:** Monday, December 27, 2021 9:36 PM  
**To:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN; Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA; Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA; Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaría T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA; Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA; Lett, Julius J SMSgt USAF (USA)  
**Cc:** 647 CES/UCC  
**Subject:** 20211227 0800-2000 JBPHH DWDSRP Flush Report  
**Attachments:** 20211227 0800-2000 JBPHHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Monday, 27 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Flushing resumed 1949L  
D2 FH ID 30 – Flushing resumed 1950L  
F1 FH ID FH-8 (No GAC) – Flushing resumed 1828L  
F1 FH 606 – Flushing resumed 1838L  
F1 FH ID 613 – Flushing resumed 1845L  
F1 FH ID 36A – Flushing resumed 1852L  
F1 FH ID 21 – Flushing resumed 1900L  
F1 FH ID 11A – Flushing resumed 1910L  
F1 FH ID 18 – Flushing resumed 1823L  
D1 FH ID 6 - Flushing started 2007L  
D2 FH ID 74 - Flushing started 2022L

Very Respectfully,

Austin A. Kelly, 1st Lt, USAF  
Airfield Deputy Assistant Public Works Officer  
Naval Facilities Engineering Systems Command HI

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SPC Nelson, Petrick Agency: \_\_\_\_\_

Zone ID (A1, etc.): D1 Date: 20211227 Time: 1820

Coordinates (latitude and longitude): 21.35000°N, 157.94060

Associated Flushing Report ID: ~~21.35000°N, 157.94060~~ (FH 455)

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>30</u> % cloud cover	<u>30</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input type="checkbox"/> Normal/none	<input type="checkbox"/> None	<input type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead <u>0</u>	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead <u>0</u>	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: [Signature] Date: 20211227

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols



## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: DA

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 20211227 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1946 Flushing End Time: \_\_\_\_\_

Signed By

Patrick Nelson / SPC / 2-14CAV, B-Troop 20211227

Printed Name / Rank / Organization

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Tuesday, December 28, 2021 11:35 AM  
**To:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN; Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); austin.a.kelly3; Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Lett, Julius J SMSgt USAF (USA)  
**Cc:** 15CES.UCC@us.af.mil  
**Subject:** INFO: 20211228 2000L - 0800L JBPHH DWDSRP Flush Report  
**Attachments:** 20211228 2000L - 0800L JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

BLUF: The US Army has assumed the distribution flushing watch with 647 CES UCC over watch a/o 0800, 27 Dec 21. They will conduct 12-hour shifts changing at 0800L and 2000L over a 24-hour period.

Please see the attached flush report for Monday/Tuesday, 27/28 Dec 21, 2000L – 0600L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 400 – Started Flushing 0128L  
D1 FH ID 455 – Continuously Flushed This Period  
D2 FH ID 006 – Started Flushing 2007L  
D2 FH ID 030 – Started Flushing 1950L  
D2 FH ID 074 – Started Flushing 2022L  
D2 FH ID 293 – Started Flushing 0108L  
F1 FH ID FH-8 (No GAC) – Continuously Flushed This Period  
F1 FH ID 11A – Continuously Flushed This Period  
F1 FH ID 018 – Continuously Flushed This Period  
F1 FH ID 021 – Continuously Flushed This Period  
F1 FH ID 36A – Continuously Flushed This Period  
F1 FH ID 606 – Continuously Flushed This Period  
F1 FH ID 613 – Continuously Flushed This Period

r/

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SGT Gabriel Duncan Agency: 2-14 CAV

Zone ID (A1, etc.): D1 Date: 20211227 Time: 2000 0846 L

Coordinates (latitude and longitude): 21.3500935, -157.9404422

Associated Flushing Report ID: FH 455

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F) <u>75</u>
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>60</u> % cloud cover	<u>    </u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: Duncan Date: 20211228

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: 01 FH 455

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
✓			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		✓	DOH Incident Command notified
		✓	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		✓	Notified affected population
✓			Signs posted and affected area roped (Cordon off and mark the affected area)
✓	✗		Navy Personnel present for entire discharge
✓			Treatment using diffusers & granulated activated carbon prior to discharge
	✓		Draining to Ground:
		✓	Soil samples collected before discharging onto ground
		✓	Soil samples collected after discharge is completed
	✓		Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
✓			Draining to Storm Drain:
		✓	Identify on a map where the storm drain enters State waters
	✓		Draining to Sanitary Sewer:
		✓	Request Wastewater Treatment Plant consent
			Draining to Stream (Direct)
			Draining to Ocean (Direct)
✓			Discharge does/did not contact persons, pets, wildlife, etc.



	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 20211227 - 20211228 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 2000 Flushing End Time: 0800

Signed By

SGT Gabriel Duncan, 2-14 CAV

Printed Name / Rank / Organization

20211228

Date

G Duncan

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** AhLeong, Peter A MSgt USAF 647 ABG (USA) <peter.a.ahleong1@navy.mil>  
**Sent:** Tuesday, December 28, 2021 11:34 PM  
**To:** Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Wiley, Scottie R Capt USAF 647 ABG (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Kelly, Austin A 1st Lt USAF 647 ABG (USA); nicholas.d.cruz@navy.mil; Huang, Andy D CIV USN NAVFAC HAWAII PEARL (USA); Spencer, Matthew A CIV USN COMNAVREG SW SAN CA (USA); Poche, Brennan W LT USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); john.parada@navy.mil; Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Lett, Julius J SMSgt USAF (USA); nicholas.d.cruz@navy.mil; kevin.lachat@navy.mil  
**Cc:** EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Pendleton, Cole R SrA USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211228 0800L - 2000L JPBHH DWDSRP Flush Report  
**Attachments:** 20211228 0800L - 2000L JPBHH KDWDSRP Flush Report.pdf  
**Signed By:** peter.ahleong@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Tuesday, 28 Dec 21, 0800L – 2000L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Flushing stopped 0939L  
D2 FH ID 30 – Flushing stopped 1030L  
F1 FH ID FH-8 (No GAC) – Flushing on  
F1 FH ID 606 – Flushing on  
F1 FH ID 613 – Flushing paused 1157L (field flooded)  
F1 FH ID 36A – Flushing on  
F1 FH ID 21 – Flushing on  
F1 FH ID 11A – Flushing on  
F1 FH ID 18 – Flushing on  
D1 FH ID 6 - Flushing on  
D2 FH ID 74 - Flushing stopped 1031L  
D2 FH ID 293 – Flushing stopped 0939L  
D1 FH ID 400 – Flushing stopped 0951L  
D2 FH ID 41 – Flushing started 1050L  
A2 FH ID 7-1 – Flushing started 1501L

A2 FH ID 2-7 – Flushing started 1647L

Respectfully,

MSgt Peter A. Ahleong  
Mechanical Services Element Superintendent  
Naval Facilities Engineering Systems Command, Hawaii  
647<sup>th</sup> Civil Engineer Squadron, JBPHH, HI  
808-471-0374

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Friday, December 24, 2021 3:56 PM  
**To:** Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Cc: WILLIAMS, MALCOLM J Capt USAF PACAF 647 CES/CEN; Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); michael.corum@us.af.mil  
**Cc:** Wiley, Scottie R Capt USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA)  
**Subject:** INFO: 20211224 0600L - 1400L JBPHH DWDSRP Flush Report  
**Attachments:** SKM\_C36821122415350.pdf  
**Signed By:** israel.duarte@us.af.mil

Ma'am & Gentlemen,

Please see the attached flush reports for period Friday, 24 Dec 21, 0600L – 1400L. A summary update on distribution flushing is listed below for this period. FYSA, All sites stopped ~1420L, except for D1 FH ID 724, which is still flushing...time stamp 1517L.

D1 FH ID 768 – Flushing Paused 0925L  
F1 FH ID 18 – Flushing Resumed 1146L, Paused 1359L  
F1 FH 606 – Flushing Resumed 0923L  
F1 FH ID 36A – Flushing Resumed 1100L  
F1 FH ID 21 – Flushing Resumed 1108L  
F1 FH ID 11A – Flushing Resumed 1116L  
F1 FH ID 613 – Flushing Resumed 1018L  
F1 FH ID FH-8 (No GAC) – Flushing Resumed 1127L  
D1 FH ID 723 – Flushing Started 0957L  
D1 FH ID 724 – Flushing Started 1343

Please let me know if you have any questions.

r/

srw

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SrA Rodney Cole Agency: 047 CES

Zone ID (A1, etc.): D1/223 Date: 20211224 Time: 1005

Coordinates (latitude and longitude): 21.348076 -157.939986

Associated Flushing Report ID: FH-723

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
<u>40</u> % cloud cover	<u>30</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: [Signature] Date: 24 DEC 21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols



## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1 / 723

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
/			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
			DOH Incident Command notified
			DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
-			Notified affected population
			Signs posted and affected area roped (Cordon off and mark the affected area)
			Navy Personnel present for entire discharge
/			Treatment using diffusers & granulated activated carbon prior to discharge
/			Draining to Ground:
/			Soil samples collected before discharging onto ground
			Soil samples collected after discharge is completed
	/		Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
	/		Draining to Storm Drain:
			Identify on a map where the storm drain enters State waters
	/		Draining to Sanitary Sewer:
			Request Wastewater Treatment Plant consent
			Draining to Stream (Direct)
			Draining to Ocean (Direct)
	/		Discharge does/did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
✓			Discharge water samples collected

Date of Flushing: 29 Dec 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1005 Flushing End Time: \_\_\_\_\_

Signed By

Rodney Cole Srt 647CES

Printed Name / Rank / Organization

29 Dec 21

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** AhLeong, Peter A MSgt USAF 647 ABG (USA) <peter.a.ahleong1@navy.mil>  
**Sent:** Friday, December 24, 2021 11:46 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); john.f.daly2@navy.mil; carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA)  
**Cc:** Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Edwards, Phyllysha C SSgt USAF USN NAVFAC PAC PEARL HI (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); 15CES.UCC@us.af.mil; Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Credle, Gregory E III PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Johnson, Jamaría T PO2 USN (USA); Barr, Justin A PO2 USN (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Harris, Jamel W PO2 USN (USA); israel.duarte@navy.mil; Williams, Malcolm J Capt USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA)  
**Subject:** Flushing Ops Report  
**Attachments:** Flushing Report.pdf  
**Signed By:** peter.ahleong@us.af.mil

Ma'am & Gentlemen,

Please see the attached flush reports for period Friday, 24 Dec 21, 1400L – 2200L. A summary update on distribution flushing is listed below for this period. FYSA, area ID D1 will resume flushing at around 0700hrs, 25 December and area ID D2 will resume flushing on 26 December...time stamp 1517L.

D1 FH ID 768 – Flushing Paused 0925L  
F1 FH ID 18 – Paused 1359L  
F1 FH 606 – Paused 1413L  
F1 FH ID 36A – Pause 1421L  
F1 FH ID 21 – Flushing Resumed 1425L  
F1 FH ID 11A – Flushing Resumed 1433L  
F1 FH ID 613 – Flushing Resumed 1410L  
F1 FH ID FH-8 (No GAC) – Paused 1403L  
D1 FH ID 723 – Paused 1435L, GAC relocated to D2 FH ID 019  
D1 FH ID 724 – Paused 1535, GAC relocated to D2 FH ID 74

Please let me know if you have any questions.

Respectfully,

MSgt Peter A. Ahleong  
Mechanical Services Element Superintendent  
Naval Facilities Engineering Systems Command, Hawaii  
647<sup>th</sup> Civil Engineer Squadron, JBPHH, HI  
808-471-0374

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Sgt Felix ChenHuang Agency: 647 CES

Zone ID (A1, etc.): D1 Date: 20211224 Time: 1400

Coordinates (latitude and longitude): 21.3477069, -157.9390173

Associated Flushing Report ID: 723

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<input checked="" type="checkbox"/> % cloud cover	<input checked="" type="checkbox"/> % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/> clear	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☒ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>N/A</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>N/A</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: Felix ChenHuang

Date: 24 Dec 2021

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: D1(723) Map Attached: ☐ Yes ☒ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
		<input checked="" type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
		<input checked="" type="checkbox"/>	Navy Personnel present for entire discharge
		<input checked="" type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
		<input checked="" type="checkbox"/>	Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
		<input checked="" type="checkbox"/>	Draining to Storm Drain:
		<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
		<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
			Draining to Stream (Direct)
			Draining to Ocean (Direct)
<input checked="" type="checkbox"/>			Discharge <del>does</del> /did not contact persons, pets, wildlife, etc.

FCH  
2021/12/24

	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 24 December 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1400 Flushing End Time: 1430

Signed By

Felix ChenHwang / SrA / G47 CES

Printed Name / Rank / Organization

24 Dec 21

Date

Felix ChenHwang

Signature



## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Friday, December 24, 2021 3:56 PM  
**To:** Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Cc: WILLIAMS, MALCOLM J Capt USAF PACAF 647 CES/CEN; Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); michael.corum@us.af.mil  
**Cc:** Wiley, Scottie R Capt USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA)  
**Subject:** INFO: 20211224 0600L - 1400L JBPHH DWDSRP Flush Report  
**Attachments:** SKM\_C36821122415350.pdf  
**Signed By:** israel.duarte@us.af.mil

Ma'am & Gentlemen,

Please see the attached flush reports for period Friday, 24 Dec 21, 0600L – 1400L. A summary update on distribution flushing is listed below for this period. FYSA, All sites stopped ~1420L, except for D1 FH ID 724, which is still flushing...time stamp 1517L.

D1 FH ID 768 – Flushing Paused 0925L  
F1 FH ID 18 – Flushing Resumed 1146L, Paused 1359L  
F1 FH 606 – Flushing Resumed 0923L  
F1 FH ID 36A – Flushing Resumed 1100L  
F1 FH ID 21 – Flushing Resumed 1108L  
F1 FH ID 11A – Flushing Resumed 1116L  
F1 FH ID 613 – Flushing Resumed 1018L  
F1 FH ID FH-8 (No GAC) – Flushing Resumed 1127L  
D1 FH ID 723 – Flushing Started 0957L  
D1 FH ID 724 – Flushing Started 1343

Please let me know if you have any questions.

r/

srw

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SRA. TOPBERG Agency: 647CES

Zone ID (A1, etc.): D1 Date: 24 DEC 21 Time: 1350

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: D1 FH 724

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
____% cloud cover	____% cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge? <input type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input type="checkbox"/> no		
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected? <input type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input type="checkbox"/> no		

Observer Signature: [Signature] Date: 24 DEC 21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1 FH724

Map Attached: ☐ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

	✓		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 24 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1340 Flushing End Time: 1430

Signed By

TOPBERG, NICHOLAS / SRA / 647 CES

Printed Name / Rank / Organization

24 DEC 21

Date



Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** AhLeong, Peter A MSgt USAF 647 ABG (USA) <peter.a.ahleong1@navy.mil>  
**Sent:** Friday, December 24, 2021 11:46 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); john.f.daly2@navy.mil; carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA)  
**Cc:** Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); Edwards, Phyllysha C SSgt USAF USN NAVFAC PAC PEARL HI (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); 15CES.UCC@us.af.mil; Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Credle, Gregory E III PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Johnson, Jamaría T PO2 USN (USA); Barr, Justin A PO2 USN (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Harris, Jamel W PO2 USN (USA); israel.duarte@navy.mil; Williams, Malcolm J Capt USAF 647 ABG (USA); Mchenry, Kevin G MSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA)  
**Subject:** Flushing Ops Report  
**Attachments:** Flushing Report.pdf  
**Signed By:** peter.ahleong@us.af.mil

Ma'am & Gentlemen,

Please see the attached flush reports for period Friday, 24 Dec 21, 1400L – 2200L. A summary update on distribution flushing is listed below for this period. FYSA, area ID D1 will resume flushing at around 0700hrs, 25 December and area ID D2 will resume flushing on 26 December...time stamp 1517L.

D1 FH ID 768 – Flushing Paused 0925L  
F1 FH ID 18 – Paused 1359L  
F1 FH 606 – Paused 1413L  
F1 FH ID 36A – Pause 1421L  
F1 FH ID 21 – Flushing Resumed 1425L  
F1 FH ID 11A – Flushing Resumed 1433L  
F1 FH ID 613 – Flushing Resumed 1410L  
F1 FH ID FH-8 (No GAC) – Paused 1403L  
D1 FH ID 723 – Paused 1435L, GAC relocated to D2 FH ID 019  
D1 FH ID 724 – Paused 1535, GAC relocated to D2 FH ID 74

Please let me know if you have any questions.

Respectfully,

MSgt Peter A. Ahleong  
Mechanical Services Element Superintendent  
Naval Facilities Engineering Systems Command, Hawaii  
647<sup>th</sup> Civil Engineer Squadron, JBPHH, HI  
808-471-0374

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: BACCARO/DESTRAFF Agency: 303

Zone ID (A1, etc.): D1 Date: 24 Dec 2021 Time: 1428

Coordinates (latitude and longitude): 21.3467288, -157.9421169

Associated Flushing Report ID: FH 724

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>25</u> % cloud cover	<u>      </u> % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>NONE</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill?	# Fish Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge?
Dead Invertebrates?	# Invertebrates Dead <u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Invertebrates collected?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: [Signature] Date: 24 DEC 21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols



## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: D1 FH 724Map Attached: ☒ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
		<input checked="" type="checkbox"/>	Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
		<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>			Draining to Storm Drain:
		<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
		<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
		<input checked="" type="checkbox"/>	<del>Draining to Stream (Direct)</del>
		<input checked="" type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>			Discharge <del>does</del> /did not contact persons, pets, wildlife, etc.

	X		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		7	Discharge water samples collected

Date of Flushing: 24 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1400 Flushing End Time: 1535

Signed By

BO2 DEGRASS CBMU 303

Printed Name / Rank / Organization

24 DEC 21

Date

[Signature]

Signature

Set up: 10

Sunday  
December 26, 2021

0630 - Depart hotel

0700 - Tailgate safety meeting at NAVFAC Raydown yard

0800 - Begin flushing hydrant **019** @ 0900

- Complete system setup all hose needed assembled

0900 - Turned **019** @ 0900

0945 - Turned on hyd. **455** w/ AECOM to check PH Levels again. ~11 at discharge point ~7 from hydrant to system.

1000 - 455 hydrant system out of commission due to high PH on effluent. Needs blown down and demobed. Vac truck?

1045 - Check PH @ **455** all is good

Arrive @ **400** to begin setting up for discharge

- Discharge started @ 1130.

1130 - **400** PH Levels high at effluent

1230 - Preparing **030** and **747** for discharge

**030** discharged @ 1433

**747** discharged @ 1531

1300 - **030** 4" hydrant cap won't come off, chasing a 2" cap insted.....

1400 - Leaving **030** @ 1455

1500 - Begin setting up **041**

Monday  
December 27, 2021

~~0530 - Meet / demobe to site~~

0620 - Daily safety meeting

0700 - COVID tests

- Ed to airport to fill carbon
- Eric crew demobe team
- Mike crew system start ups team

0800 - Hydrant **105** system arrives @ 0820.

**105** ready to run @ 0845.

- Where discharge??
- Where is 2 watch guys??
- We are waiting still @ 0900...

0900 - **400** blow down and ready for demobe @ 0945.

1000 - **455** demobed and ready for transport.  
@ 1010.

**105** filling tanks @ 1010.

Discharge **105** begins @ 1020

**105** AECOM samples done, system off.

1100 - **747** blown down and ready for demobe @ 1120.

1200 - Waiting on transportation to move GAC's to new locations...

1245 - **782** starting blowdown/demobe process.

**782** blowdown complete @ 1337.

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Friday, December 24, 2021 7:49 AM  
**To:** Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA)  
**Cc:** WILLIAMS, MALCOLM J Capt USAF PACAF 647 CES/CEN; Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA)  
**Subject:** INFO: 20211224 2200L - 0600L JBPHH DWDSRP Flush Report  
**Attachments:** 20211224 2200 - 0600 JBPHHH DWDSRP Flush Report.pdf

Ma'am & Gentlemen,

Please see the attached flush reports for period Thursday/Friday, 23/24 Dec 21, 2200L – 0600L. A summary update on distribution flushing is listed below for this period.

D1 FH ID 768 – Flushing Started 2345L  
F1 FH ID 18 – Flushing Paused 0057L  
F1 FH 606 – Flushing Resumed 2223L / Flushing Paused 0144L  
F1 FH ID 36A – Flushing Paused 0131L  
F1 FH ID 21 – Flushing Paused 0125L  
F1 FH ID 11A – Flushing Resumed 2230L / Flushing Paused 0119L  
F1 FH ID 613 – Flushing Started 2313L / Flushing Paused 0211L  
F1 FH ID FH-8 (No GAC) – Flushing Resumed 2215L / Flushing Paused 0111L

Please let me know if you have any questions.

r/

srw

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3  
Naval Facilities Engineering Systems Command, Hawaii  
400 Marshall Road JBPHH HI 96860-3139  
DSN (315) 471-4485  
Comm: (808) 471-4485  
Gov Cell: (808) 295-2106



# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Bolden/Trias Agency: NAV PAC

Zone ID (A1, etc.): D1 Date: 12/23/21 Time: 2200

Coordinates (latitude and longitude): 21° 20' 39.7"N 157° 56' 11.5"W

Associated Flushing Report ID: FH-768

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<input type="checkbox"/> % cloud cover	<input type="checkbox"/> % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: W. Bolden / W. Trias

Date: 12/23/21

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols



## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: D1 FH 768 Map Attached: ☐ Yes ☐ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 12/23/21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 2200 Flushing End Time: 0636

Signed By

*Walter Trias* **Weston Trias NAVFAC**

WILLIAM ROSS NAVFAC

12/23/21

Printed Name / Rank / Organization

Date

*W* *Walter Trias*

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Friday, December 24, 2021 3:56 PM  
**To:** Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Cc: WILLIAMS, MALCOLM J Capt USAF PACAF 647 CES/CEN; Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); michael.corum@us.af.mil  
**Cc:** Wiley, Scottie R Capt USAF 647 ABG (USA); Duarte, Israel A MSgt USAF (USA)  
**Subject:** INFO: 20211224 0600L - 1400L JBPHH DWDSRP Flush Report  
**Attachments:** SKM\_C36821122415350.pdf  
**Signed By:** israel.duarte@us.af.mil

Ma'am & Gentlemen,

Please see the attached flush reports for period Friday, 24 Dec 21, 0600L – 1400L. A summary update on distribution flushing is listed below for this period. FYSA, All sites stopped ~1420L, except for D1 FH ID 724, which is still flushing...time stamp 1517L.

D1 FH ID 768 – Flushing Paused 0925L  
F1 FH ID 18 – Flushing Resumed 1146L, Paused 1359L  
F1 FH 606 – Flushing Resumed 0923L  
F1 FH ID 36A – Flushing Resumed 1100L  
F1 FH ID 21 – Flushing Resumed 1108L  
F1 FH ID 11A – Flushing Resumed 1116L  
F1 FH ID 613 – Flushing Resumed 1018L  
F1 FH ID FH-8 (No GAC) – Flushing Resumed 1127L  
D1 FH ID 723 – Flushing Started 0957L  
D1 FH ID 724 – Flushing Started 1343

Please let me know if you have any questions.

r/

srw

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SA Emonii Green Agency: 647 CES

Zone ID (A1, etc.): D1 Date: 2021 12 24 Time: 0600

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH - 768

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
_____% cloud cover	_____% cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:


### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>None</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?  <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Fish Dead  <u>0</u>	Abnormal Animal Behavior Near Discharge?  <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Invertebrates Dead  <u>0</u>	Invertebrates collected?  <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Dead  <u>0</u>	Notes (describe any yes):

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 29 Dec 21

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1

Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
✓			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		✓	DOH Incident Command notified
		✓	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
✓		✓	Notified affected population
✓			Signs posted and affected area roped (Cordon off and mark the affected area)
✓			Navy Personnel present for entire discharge
✓			Treatment using diffusers & granulated activated carbon prior to discharge
			Draining to Ground:
		✓	Soil samples collected before discharging onto ground
		✓	Soil samples collected after discharge is completed
✓			Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
✓			Draining to Storm Drain:
✓		✓	Identify on a map where the storm drain enters State waters
✓			Draining to Sanitary Sewer:
		✓	Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
✓			<del>Draining to Ocean (Direct)</del>
			Discharge does/did not contact persons, pets, wildlife, etc.



			Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
			Discharge water samples collected

Date of Flushing: 24 Dec 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0600 Flushing End Time: 0925

Signed By

Emonii Green SrA 647/ves

Printed Name / Rank / Organization

24 Dec 21

Date

Emonii Green

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Corum, Michael L II MSgt USAF 647 ABG (USA)  
**Sent:** Sunday, December 26, 2021 2:22 AM  
**To:** Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); michael.corum@us.af.mil  
**Cc:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN; Wiley, Scottie R Capt USAF 647 ABG (USA)  
**Subject:** Water Observation Sheets 25 Dec (1400-2200L)  
**Attachments:** WaterFlushingObservations\_25Dec21.pdf  
**Signed By:** michael.corum@us.af.mil  
**Importance:** High

ALCON,

Please see attached Water Flushing Observation Sheets/reports for 25 Dec 21, 1400L – 2200L. A summary update on distribution for this period is listed below.

D1 FH ID 455 – Turned on at 1826L / Turned off at 2100L  
D1 FH ID 782 – Turned on at 1851L  
F1 FH ID FH-8 (No GAC) – Turned on at 1915L  
F1 FH 606 – Turned on at 1929L  
F1 FH ID 613 – Turned on at 1952L  
F1 FH ID 36A – Turned on at 1959L  
F1 FH ID 21 – Turned on 2015L  
F1 FH ID 11A – Turned on at 2030L  
F1 FH ID 18 – Turned on at 2050L

### Water levels

31.2 feet at 2110L  
30 feet at 2159L

V/r  
Michael Corum, MSgt, USAF  
SABER, NCOIC  
647<sup>th</sup> Civil Engineer Squadron

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: LS KEVIN SMITH Agency: CBMU 303

Zone ID (A1, etc.): D1 Date: 25 DEC 2021 Time: 1845

Coordinates (latitude and longitude): 21.3480794, - 157.9352842

Associated Flushing Report ID: FH-782

## WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	<u>71°</u>
<u>    </u> % cloud cover	<u>    </u> % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

## WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

## PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>0%</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
Fish Kill? <u>NO</u>	# Fish Dead <u>N/A</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		Abnormal Animal Behavior Near Discharge? <u>NO</u>
Dead Invertebrates?	# Invertebrates Dead	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>N/A</u>	Invertebrates collected?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes

Observer Signature: [Signature] Date: 25 DEC 2021

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1-FH782

Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input checked="" type="checkbox"/>			DOH Incident Command notified
<input checked="" type="checkbox"/>			DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>			Notified affected population
<input checked="" type="checkbox"/>			Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
		<input checked="" type="checkbox"/>	Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
		<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>			Draining to Storm Drain:
<input checked="" type="checkbox"/>			Identify on a map where the storm drain enters State waters
		<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
			Draining to Stream (Direct)
			Draining to Ocean (Direct)
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.

		X	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
	X		Discharge water samples collected

Date of Flushing: 25 DEC 2021 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 1845 Flushing End Time: \_\_\_\_\_


Signed By

KEVIN P. SMITH, US<sup>C</sup> CBMU 303

Printed Name / Rank / Organization

25 DEC 2021

Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Sunday, December 26, 2021 7:03 AM  
**To:** Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); michael.corum@us.af.mil  
**Cc:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN  
**Subject:** INFO: 20211226 2200 - 0600 JBPHH DWDSRP Flush Report  
**Attachments:** 20211226 2200 - 0600 JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush reports for period Saturday/Sunday, 25/26 Dec 21, 2200L – 0600L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Paused this period  
D1 FH ID 782 – Paused 0015L  
F1 FH ID FH-8 (No GAC) – Paused 0023L  
F1 FH 606 – Paused 2341L  
F1 FH ID 613 – Paused 2337L  
F1 FH ID 36A – Paused 2350L  
F1 FH ID 21 – Paused 2356L  
F1 FH ID 11A – Paused 0005L  
F1 FH ID 18 – Paused 0027L

r/

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3  
Naval Facilities Engineering Systems Command, Hawaii  
400 Marshall Road JBPHH HI 96860-3139  
DSN (315) 471-4485  
Comm: (808) 471-4485  
Gov Cell: (808) 295-2106



# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SAMBRIANO/FELICIANO Agency: \_\_\_\_\_

Zone ID (A1, etc.): D1 Date: 12/25/2021 Time: 10:43

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH 782

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
____ % cloud cover	<u>10</u> % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☒ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Fish Dead <u>0</u>	Abnormal Animal Behavior Near Discharge? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Invertebrates Dead <u>0</u>	Invertebrates collected? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# Dead <u>0</u>	Notes (describe any yes): <u>*Pin hole leak in blue hose at 100ft from storm drain discharge.</u> <u>*Leak at blue hose connection.</u>

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1 FH-782 Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

missing sign

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Incident Command notified
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ocean (Direct)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

## Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)

---

**From:** Duarte, Israel A MSgt USAF (USA)  
**Sent:** Sunday, December 26, 2021 5:55 PM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); phylysha.edwards@us.af.mil; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); michael.corum@us.af.mil; Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 15CES.UCC@us.af.mil; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaría T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); michael.corum@us.af.mil  
**Subject:** INFO: 20211226 0600 - 1400 JBPHH DWDSRP Flush Report  
**Attachments:** SKM\_C36821122615050.pdf  
**Signed By:** israel.duarte@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Sunday, 26 Dec 21, 0600L – 1400L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Paused this period  
D1 FH ID 782 – ~~Paused 0913L~~ **Resumed @ 0916 per UT Log**  
F1 FH ID FH-8 (No GAC) – Flushing Resumed 1000L  
F1 FH 606 – Flushing Resumed 0932L  
F1 FH ID 613 – Flushing Resumed 0932L  
F1 FH ID 36A – Flushing Resumed 0941L  
F1 FH ID 21 – Flushing Resumed 2356L  
F1 FH ID 11A – Flushing Resumed 0953L  
F1 FH ID 18 – Flushing Resumed 1005L  
F1 FH ID 19 – Flushing Started 0937L

Respectfully,

//SIGNED//

ISRAEL A. DUARTE, MSgt, USAF  
Superintendent, Structural Branch  
Naval Facilities Engineering Systems Command Hawaii  
Public Works Department, JBPHH  
JBPHH, HI  
DSN (315) 471-0356

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: SRA. TOPBJERL / CM KING Agency: 647 CES / CBMU 303

Zone ID (A1, etc.): D-1 Date: 20211226 Time: 0900

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH-782

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
____ % cloud cover	____ % cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>NONE</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:



Date: 26DEC21

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1

Map Attached: ☒ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
		<input checked="" type="checkbox"/>	DOH Incident Command notified
		<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
		<input checked="" type="checkbox"/>	Notified affected population
	<input checked="" type="checkbox"/>		Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>			Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>			Treatment using diffusers & granulated activated carbon prior to discharge
		<input checked="" type="checkbox"/>	Draining to Ground:
		<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
		<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
	<input checked="" type="checkbox"/>		Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>			Draining to Storm Drain:
		<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<del>XXXX</del>	<input checked="" type="checkbox"/>		Draining to Sanitary Sewer:
		<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>			Discharge does/did not contact persons, pets, wildlife, etc.



	X		Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		X	Discharge water samples collected

Date of Flushing: 26 DEC 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0900 Flushing End Time: 1430

Signed By

TOPBERG, NICHOLAS / SRA / 647CES

Printed Name / Rank / Organization

26 DEC 21

Date

  
Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN <michael.corum@us.af.mil>  
**Sent:** Monday, December 27, 2021 12:04 AM  
**To:** Wiley, Scottie R Capt USAF 647 ABG (USA); Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA)  
**Cc:** Wiley, Scottie R Capt USAF AFPC (USA)  
**Subject:** INFO: 20211226 0600 - 1400 JBPHH DWDSRP Flush Report  
**Attachments:** SKM\_C36821122622380.pdf  
**Signed By:** michael.corum@us.af.mil

Ladies & Gentlemen,

Please see the attached flush report for Sunday, 26 Dec 21, 1400L – 2200L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Paused this period (until 27 Dec)  
D1 FH ID 782 – Flushing Paused 1437L  
F1 FH ID FH-8 (No GAC) – Flushing paused 1505L  
F1 FH 606 – Flushing paused 1445L  
F1 FH ID 613 – Flushing paused 1442L  
F1 FH ID 36A – Flushing paused 1451L  
F1 FH ID 21 – Flushing paused 1455L  
F1 FH ID 11A – Flushing paused 1457L  
F1 FH ID 18 – Flushing paused 1505L  
D2 FH ID 19 – Flushing paused 1901L (GAC disconnected)

V/r  
Michael Corum, MSgt, USAF  
NCOIC, SABER  
Joint Base Pearl Harbor-Hickam  
Comm: 808-448-2877  
DSN: 448-2877  
NMCI: [michael.l.corum.mil@us.navy.mil](mailto:michael.l.corum.mil@us.navy.mil)

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: AIC McKinley Kamara Agency: 647H CES

Zone ID (A1, etc.): FL F1082 Date: 12/26/21 Time: 0234

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: PH 782

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
_____% cloud cover	_____% cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input checked="" type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:



Date: 12/26/21

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☒ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1 FH 782

Map Attached: ☐ Yes ☒ No

#### Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Stream (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Draining to Ocean (Direct)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

		✓	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		✓	Discharge water samples collected

Date of Flushing: 12/26/21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: \_\_\_\_\_ Flushing End Time: 0234

Signed By

Kameron McKinley AIC 647H-CES

Printed Name / Rank / Organization

12/26/21

Date

  
Signature



## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

---

**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Monday, December 27, 2021 8:44 AM  
**To:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN; Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Lett, Julius J SMSgt USAF (USA)  
**Cc:** 15CES.UCC@us.af.mil  
**Subject:** INFO: 20211227 2200 - 0600 JBPHH DWDSRP Flush Report  
**Attachments:** 20211227 2200 - 0600 JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Sunday/Monday, 26/27 Dec 21, 2200L - 0600L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Paused this period  
D1 FH ID 782 – Resumed Flushing 0303L  
F1 FH ID FH-8 (No GAC) – Resumed Flushing 0310L  
F1 FH 606 – Resumed Flushing 0251L  
F1 FH ID 613 – Resumed Flushing 0246L  
F1 FH ID 36A – Resumed Flushing 0235L  
F1 FH ID 21 – Resumed Flushing 0226L  
F1 FH ID 11A – Resumed Flushing 0222L  
F1 FH ID 18 – Resumed Flushing 0315L  
D2 FH ID 19 – Flushing Complete / GAC relocating

r/

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3  
Naval Facilities Engineering Systems Command, Hawaii  
400 Marshall Road JBPHH HI 96860-3139  
DSN (315) 471-4485  
Comm: (808) 471-4485  
Gov Cell: (808) 295-2106

# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: CORPUS/KIPAPA Agency: \_\_\_\_\_

Zone ID (A1, etc.): D 1 Date: 26 DEC 21 Time: 2200

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: FH-782

### WEATHER CONDITIONS




NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input type="checkbox"/> showers (intermittent)	
<u>25</u> % cloud cover	<u>35</u> % cloud cover	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping?
		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature:  Date: 12/26/21

## JBPHH Drinking Water Transmission System

### Flushing Report

#### Section I: Asset Type to be Flushed

- ☐ Flushing of Drinking Water Distribution System
- ☐ Flushing Water Storage Tanks
- ☐ Flushing Drinking Water Well

#### Section II: Asset Flushed

Map ID: D1 / FH 782

Map Attached: ☐ Yes ☐ No

#### Section III: Protocols

Yes	No	N/A	
/			Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
/			DOH Incident Command notified
/			DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
/			Notified affected population
/			Signs posted and affected area roped (Cordon off and mark the affected area)
/			Navy Personnel present for entire discharge
/			Treatment using diffusers & granulated activated carbon prior to discharge
		/	Draining to Ground:
		/	Soil samples collected before discharging onto ground
		/	Soil samples collected after discharge is completed
		/	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
/			Draining to Storm Drain:
/		/	Identify on a map where the storm drain enters State waters
/		/	Draining to Sanitary Sewer:
		/	Request Wastewater Treatment Plant consent
			<del>Draining to Stream (Direct)</del>
			<del>Draining to Ocean (Direct)</del>
/			Discharge does/did not contact persons, pets, wildlife, etc.

		<input checked="" type="checkbox"/>	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
		<input checked="" type="checkbox"/>	Discharge water samples collected

Date of Flushing: 12/26/21 Estimated Volume: 200 GPM

Flushing Start Time: 0230 Flushing End Time: 0630

Signed By

VINCENT CORPUS NAVFAC

Printed Name / Rank / Organization

12/26/21

Date

[Signature]

Signature

## **Cruz, Nicholas D LT USN NAVFAC SE JAX FL (USA)**

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**From:** Wiley, Scottie R Capt USAF 647 ABG (USA) <scottie.wiley@navy.mil>  
**Sent:** Monday, December 27, 2021 7:36 PM  
**To:** CORUM, MICHAEL L II MSgt USAF PACAF 647 CES/CEN; Corum, Michael L II MSgt USAF 647 ABG (USA); Collins, Jason A SMSgt USAF USN NAVFAC HAWAII PEARL (USA); Williams, Malcolm J Capt USAF 647 ABG (USA); Daly, John F III LCDR USN NAVFAC HAWAII PEARL (USA); carl.chase@navy.mil; nicholas.d.cruz@navy.mil; scott.d.wieser; john.parada@navy.mil; Gruber, Marjorie J LCDR USN CBMU 303 (USA); austin.a.kelly3; Williams, Malcolm J Capt USAF 647 ABG (USA); Donovan, Luke T Lt Col USAF 49 MSG (USA); EDWARDS, PHYLYSHA C SSgt USAF PACAF 647 CES/CEOER; Mchenry, Kevin G MSgt USAF 647 ABG (USA); Gallagher, Austin C SSgt USAF 647 ABG (USA); Beattie, Aaron J MAJ USARMY USARPAC (USA); Pendleton, Cole R SrA USAF 647 ABG (USA); 647 CES/UCC; Howard, Spencer L LT USN CBMU 303 (USA); kevin.lachat@navy.mil; Natsuhara, Brent T LT USN NAVFAC MARIANAS GU (USA); Cope, Jimmy Lee CPO USN COMEXSTRKGRU TWO (USA); Baranowski, Phillip J CPO USN NAVFAC SE JAX FL (USA); Hawkins, Brian A PO1 USN NAS KEY WEST FL (USA); Barr, Justin A PO2 USN (USA); Harris, Jamel W PO2 USN (USA); Johnson, Jamaria T PO2 USN (USA); Credle, Gregory E III PO2 USN (USA); Duarte, Israel A MSgt USAF (USA); AhLeong, Peter A MSgt USAF 647 ABG (USA); Lett, Julius J SMSgt USAF (USA)  
**Cc:** 15CES.UCC@us.af.mil  
**Subject:** INFO: 20211227 0600 - 1400 JBPHH DWDSRP Flush Report  
**Attachments:** 20211227 0600 - 1400 JBPHH DWDSRP Flush Report.pdf

Ladies & Gentlemen,

Please see the attached flush report for Monday, 27 Dec 21, 0600L – 1400L. A summary update on distribution flushing is listed below for this period.

### Current Location Summary:

D1 FH ID 455 – Paused this period  
D1 FH ID 782 – Flushing Complete 0714L  
F1 FH ID FH-8 (No GAC) – Flushing Paused 0745L  
F1 FH 606 – Flushing Paused 0724L  
F1 FH ID 613 – Flushing Paused 0725L  
F1 FH ID 36A – Flushing Paused 0733L  
F1 FH ID 21 – Flushing Paused 0735L  
F1 FH ID 11A – Flushing Paused 0738L  
F1 FH ID 18 – Flushing Paused 0745L

r/

SCOTT R. WILEY, Capt, USAF  
Facilities Sustainment Division Deputy Director – PRJ3  
Naval Facilities Engineering Systems Command, Hawaii  
400 Marshall Road JBPHH HI 96860-3139  
DSN (315) 471-4485  
Comm: (808) 471-4485  
Gov Cell: (808) 295-2106



# Drinking Water Distribution System Recovery Plan JPBHH

## Receiving Water Monitoring Observation Sheet

Observer Name: Alc Michael Davis Agency: G47CES

Zone ID (A1, etc.): D1 Date: 27 Dec 21 Time: 2100 L

Coordinates (latitude and longitude): \_\_\_\_\_

Associated Flushing Report ID: D1-FH 782

### WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Ambient Air Temperature (°F)
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	
_____% cloud cover	_____% cloud cover	
<input checked="" type="checkbox"/> clear/sunny	<input type="checkbox"/>	

### WATER QUALITY:

Overland Discharge Excess: ☐ Flooding ☐ Flowing ☐ Soaking

Water Odors	Water Surface Oils	Water Appearance
<input checked="" type="checkbox"/> Normal/none	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Clear
<input type="checkbox"/> Petroleum	<input type="checkbox"/> Slick	<input type="checkbox"/> Opaque
<input type="checkbox"/> Fishy	<input type="checkbox"/> Sheen	<input type="checkbox"/> Slightly Cloudy
<input type="checkbox"/> Sewage	<input type="checkbox"/> Globbs	<input type="checkbox"/> Cloudy
<input type="checkbox"/> Chemical	<input type="checkbox"/> Flecks	<input type="checkbox"/> Other
<input type="checkbox"/> Other	<input type="checkbox"/> Other	Color:

### PLANT & ANIMAL MONITORING:

% Stream Covered in Plants	Is there any whitening or other discoloration of aquatic botanical species (algae and other water plants)	Observation of Stress on Animal or Aquatic Life
<u>none</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes	Fish Breathing Distress/Gulping? <input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Fish Kill?	# Fish Dead	Abnormal Animal Behavior Near Discharge?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Dead Invertebrates?	# Invertebrates Dead	Invertebrates collected?
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes
Other Dead Animals?	# Dead	Notes (describe any yes):
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<u>0</u>	

Adapted from USEPA. Rapid Bioassessment Protocols and NPS Pacific Island Network Inventory & Monitoring Protocols

## Drinking Water Distribution System Recovery Plan JPBHH

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Observer Signature: \_\_\_\_\_

*[Handwritten Signature]*

Date: 27 Dec 21

## JBPHH Drinking Water Transmission System

## Flushing Report

## Section I: Asset Type to be Flushed

- ☒ Flushing of Drinking Water Distribution System  
☐ Flushing Water Storage Tanks  
☐ Flushing Drinking Water Well

## Section II: Asset Flushed

Map ID: D1Map Attached: ☐ Yes ☒ No

## Section III: Protocols

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather is suitable for flushing (i.e. no rain greater than 0.1" in past 24 hours, no significant rain event forecasted for greater than 24 hours)? NOTE: The Navy must not flush during inclement weather or in the event of rain (to avoid erosion and potential runoff)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Incident Command notified
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DOH Clean Water Branch notified by email ( <a href="mailto:cleanwaterbranch@doh.hawaii.gov">cleanwaterbranch@doh.hawaii.gov</a> ) in advance
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Notified affected population
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Signs posted and affected area roped (Cordon off and mark the affected area)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navy Personnel present for entire discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Treatment using diffusers & granulated activated carbon prior to discharge
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Ground:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected before discharging onto ground
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil samples collected after discharge is completed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharges only to soil and not to asphalt, concrete, or roadways (i.e., impervious surfaces that will result in immediate runoff)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Storm Drain:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Identify on a map where the storm drain enters State waters
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Draining to Sanitary Sewer:
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Request Wastewater Treatment Plant consent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Stream (Direct)</del>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Draining to Ocean (Direct)</del>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discharge does/did not contact persons, pets, wildlife, etc.

	<input checked="" type="checkbox"/>	Adverse effects at the discharge point – STOP DISCHARGE IMMEDIATELY! Fuel smells, flooding, injury to wildlife, presence of endangered species in area, erosion, etc.
	<input checked="" type="checkbox"/>	Discharge water samples collected

Date of Flushing: 27 Dec 21 Estimated Volume: \_\_\_\_\_

Flushing Start Time: 0630 Flushing End Time: 0730

Signed By

Michael ALC 647 CES

Printed Name / Rank / Organization

27 Dec 21

Date

WHL

Signature

February 26, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: WATER STORAGE FACILITIES AND WATER SOURCE FOR ZONES A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, F2, H1, H2, H3, AND I1

Ref: (a) Drinking Water Sampling Plan, December 2021  
(b) Drinking Water Distribution System Recovery Plan, December 2021

Encl: (1) Joint Base Pearl Harbor Hickam Potable Water System Description  
(2) S1 and S2 Water Storage Tank Flushing Report Memo  
(3) Inspection, Maintenance, and Cleaning of Potable Water Tanks Memo  
(4) Ford Island/Shipyard Water Transmission Line Status  
(5) JBPHH/Iroquois Point Water Transmission Line Status  
(6) Board of Water Supply Interconnection Status

1. This letter and associated enclosures describes and documents the flushing of the water storage facilities that serve the Joint Base Pearl Harbor Hickam (JBPHH) public water system (PWS No. 360). The flushing of the JBPHH water storage facilities and distribution system was completed in accordance with reference (a) and (b). Enclosure (1) describes the JBPHH public water system and storage tanks associated with the system. Page 8 of reference (a) has the flushing zones and water storage facilities located in each zone. The flushing of each zone identified in phase 1 of reference (a) included five volumetric turnovers. The volumetric turnover requirement included the water tank storage and distribution system volume for each zone. The water testing of the distribution system after flushing a zone's water storage tank and distribution system was the confirmation that contamination was removed from the system and that the water tanks was not a source of contamination. Enclosure (2) documents the Hawaii Department of Health's approved change from reference (a) for the flushing of Halawa S-1 and Halawa S-2.

2. Zones A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, F2, H1, H2, H3 and I1 are currently fed by the Waiawa Shaft water supply source. The pumps from the shafts generally run continuous and range from 6,000 to 14,000 gallons per minute based on the demand of the JBPHH potable water system. The pressure throughout the JBPHH distribution system is aided by the two Halawa water storage tanks. The Halawa S-1 tank is currently in service and the Halawa S-2 tank has been taken offline for maintenance as documented in enclosure (2). Enclosure (3) documents the planned timeline associated with the inspection, maintenance and cleaning of the Navy owned water storage tanks. The planned work is scheduled to be completed before the end of this calendar year. The inspection of the water storage tanks will be conducted in accordance with American Water Works Association (AWWA) Standard for Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks by personnel with the requisite qualifications outlined in this AWWA standard. Zone I1 (Red Hill) is served by Navy owned water storage tanks. The Army operates the consecutive Aliamanu public water system (PWS No. 337) which receives its water from the JBPHH public water

SUBJ: WATER STORAGE FACILITIES AND WATER SOURCE FOR ZONES A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, F2, H1, H2, H3, AND I1

system. The Army's public water system serves the Aliamanu Military Reservation (AMR). The AMR area was subdivided into three flushing zones which included Zones H1, H2, and H3. The planned timeline associated with the inspection, maintenance, and cleaning of the Army owned water storage tanks will be submitted as part of the removal action reports for Zones H1, H2, H3.

3. At this time, there are two water transmission lines that are not in operation. The water transmission line between Ford Island and the Shipyard was offline at the time of the incident as described in Enclosure (3) and is currently going through repairs. The valves at each end of the underwater water transmission line between JBPHH and Iroquois Point were closed on December 5, 2021 and the valves have remained closed since that date as documented in Enclosure (4). Enclosure (5) documents the method for reopening the underwater water transmission line between JBPHH and Iroquois Point to prevent potential contamination and adverse water quality issues. The Navy will notify the Hawaii Department of Health prior to reopening the underwater water transmission line the between JBPHH and Iroquois Point. Additional interconnections with Board of Water Supply (BWS) are described in Enclosure (6). Water being distributed in the system and being stored in water storage tanks that maintain pressure in Zones A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4, G1, E1, F1, and F2 have been flushed in accordance with reference (b) and the distribution system tested in accordance with reference (a). The removal action reports for Zones H1, H2, H3, and I1 document the flushing of the water storage tanks that specifically serve those zones.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAEL | Digitally signed by  
.WAYNE.JR.1088 | MENO.MICHAEL.WAYNE.JR  
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Date: 2022.02.26 17:41:31  
-10'00'

M. W. Meno  
CAPT, CEC, USN



## **Joint Base Pearl Harbor Hickam (JBPHH) Potable Water Description**

### **Major components of the JBPHH potable water system include:**

- Supply sources
  - Waiawa Shaft/Pumping Station
  - Red Hill Shaft/Pumping Station
  - Halawa Shaft/Pumping Station
  - Emergency Interconnections (2 locations)
- Water storage facilities
- 2-6,000,000 gallon steel storage tanks at Halawa
  - 2-200,000 gallon concrete storage tanks at Camp Smith
  - 1-250,000 gallon glass-fused steel storage tank at Camp Smith with a usable storage capacity of 140,000 gallons
  - 2-250,000 gallon glass-fused steel storage tank at Red Hill
- Distribution system
  - Camp Smith Booster Pump (to convey water to the Camp Smith water system)
  - Red Hill Booster Pumps (to convey water to the storage tank)
  - Moanalua Terrace Booster Pumps (to pressurize the water system serving the Moanalua Terrace Housing area)
  - Boneyard Booster Pumps (to pressurize the water system serving the upper elevation of Moanalua Terrace Housing area)
  - Manana Booster Pumps (to pressurize the water system serving the Manana Housing area)
  - A network of pipes, meters, valves, and hydrants for distribution and fire protection

### **Water Storage Facilities:**

Fresh water storage facilities store water for normal, fire, and maximum demand use, and serve to maintain relatively constant pressure in the water system. The JBPHH water system is equipped with two welded steel tanks, each with a storage capacity of six million gallons. These tanks are identified as the Halawa storage tanks S-1 and S-2. Both of these tanks are located adjacent to the Aliamanu Military Reservation at a ground elevation of 140 feet. The diameter of the tanks are 164 feet each, with a nominal height of 48 feet. The spillway elevations of the S-1 and S-2 tanks are 178.5 feet. The tanks are interconnected by a 10-inch line. Water from each of the tanks discharges through separate 24-inch mains and combines to a single 30-inch transmission main.

Other water storage tanks in the JBPHH system include the three tanks at Camp Smith, a storage tank serving the Red Hill Housing area, and three storage tanks serving the Army's Aliamanu Housing area. The Red Hill and Aliamanu tanks are supplied by separate booster pump stations located at the Red Hill Water Pumping Station and the Halawa Storage Tanks, respectively. These tanks are dedicated to serving these two non-Navy housing areas.

February 11, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: S1 AND S2 WATER STORAGE TANK FLUSHING REPORT

Ref: (a) Drinking Water Distribution System Recovery Plan, December 2021

1. This letter documents the current status of the S1 and S2 water storage tanks. In accordance with reference (a), the S1 and S2 water storage tanks were part of the Zone F1 flushing plan. The flushing plan for Zone F1 included both water storage tanks in the five volumetric turnover calculations. The calculated turnover volume was 61.35 million gallons of water. The S1 tank was flushed by cycling the water tank for five volumetric flushes. In order to conserve the amount of water being used in the flushing of Zone F1, the S2 water storage tank was taken out of service and remains out of service to date. This decision resulted in the conservation of approximately 25 million gallons of water. The Hawaii Department of Health (HDOH) was notified of the Navy's modified flushing plan and provided concurrence. The S2 water storage tank is being scheduled for cleaning and maintenance. The Navy will provide details to HDOH on the method and procedures for cleaning and maintenance of the S2 water storage tank prior to the start of work. The Navy will notify the HDOH upon completion of the work and the tank being placed back into service.

2. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAEL.WAYNE.JR.10883100  
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Digitally signed by  
MENO.MICHAEL.WAYNE.JR.1088  
310035  
Date: 2022.02.12 14:33:42  
-10'00'

M. W. Meno  
Captain, U.S. Navy Civil Engineer Corps

ENCL(2)

25 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Inspection, Maintenance, and Cleaning of Potable Water Tanks

1. This Memorandum for Record (MFR) is to document the summary processes for inspection, maintaining, and cleaning storage tanks within the Joint Base Pearl Harbor-Hickam potable water system. There are seven potable water storage tanks. Each tank holds water that is consistently in flux – rising and falling according to the dynamic demands for water under certain pressures at specific times. As such, the tanks are continually cycling fresh water recently pumped from the well and chlorinated at the treatment plant. JBPH-H does not drain and clean the tanks per a schedule, however the following records indicate recent cleaning. Tank cleaning follows AWWA M42 - Steel Water Storage Tanks.
  - a. S1 tank inspected and cleaned in 2010, cleaned by in-house EV remediation shop, mainly to remove sediment from the tank floor.
  - b. S2 tank inspected and cleaned 2007, cleaned by in-house remediation shop, mainly to remove sediment from the tank floor.
  - c. Red Hill tank No. 685 was inspected in 2013, via remote camera vehicle
  - d. Red Hill tank No. 316 was installed in 2017 and has not yet been inspected
  - e. Camp Smith tanks (3) were inspected and cleaned in 2013.
2. As the seven tanks have not been inspected a group for several years, the Public Works Department shall funds and contract a complete inspection and cleaning for all tanks in accordance with AWWA standards by then end CY 2022.
3. Tanks are monitored and operated using a Supervisory Control and Data Acquisition (SCADA) system to ensure that they are at the right levels and pumps and valves are operating at prescribed times and speeds, overseen by Utilities staff 24/7. Our field team is regularly physically engaged with these tanks to ensure functionality, condition, and security of the tanks. There are frequent field actions near and connected to the tanks – they are routinely inspected per the requirements to manage the system.
4. As the tank hardware ages and requires repair and replacement, a tank may be isolated, drained and taken out of service to conduct this work. At these times, when work involved the interior of the tank, a full cleaning and refilling is conducted. This is typically done with a contract.
5. The S2 tank, a 6 MG tank that, with the S1 tank, provides the ability to keep pressurized water in the system for firefighting while serving the domestic demand, has been secured from the rest of the system since December 22, 2021. The water in the tank has been sampled and the results have shown a non-detect for TPH. Public work will make repairs and clean this tank within the next 90 days. The process to flush, clean and return the tank to the system is as follows:
  - a. Repair S1/S2 overflow 24" drain line with Cured-in-Place Pipe
  - b. Drain S2 tank via existing drain line, leading to the city storm drainage system
  - c. Clean and Disinfect S2 tank (Following ANSI/AWWA C652-02: Disinfection of Water-Storage Facilities)
  - d. Perform bacteriological and TPH sampling and testing
  - e. Return S2 tank to service

HARMEYER.RAN  
DALL.ERNEST.11  
86692663  
CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam

Digitally signed by  
HARMEYER.RANDALL.ERNES  
T.1186692663  
Date: 2022.02.26 12:51:26  
-10'00'

22 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Ford Island/Shipyard Water Transmission Line Status

1. This Memorandum for Record (MFR) is to document the status of the underwater crossing water transmission line (pipe) that connects the Ford Island and Shipyard areas of the Joint Base Pearl Harbor-Hickam Potable Water System.
2. As part of the P-209 Dry Dock 3 Replacement design effort, a contractor was performing soil borings at Hospital Point near the Shipyard. The contractor damaged the 24-inch underwater crossing during one of their borings on 15 June 21, by drilling through the casing and pipe.
3. JBPHH has begun plans for repairing or replacing this damaged line. A Design consultant is scheduled to start the design on the repairs in March of 2022. Construction funds for the repair are allocated for Fiscal Year 2023.
4. The water transmission line was secured from the JBPHH system via an isolation valve on the Ford Island side, and physical pipe removal on the Shipyard side. Enclosure [1] is a picture taken on 22 January 2022 of the physical pipe removal at Hospital Point.
5. The Ford Island isolation valve is less than 5 years old, and PWD personnel have verified in the field that there are no indications of leak-by, via audible tests and noting the lack of vibrations.
6. a pitot-style flow meter that has been sending false readings is located in the currently isolated section is, as there is no water flow in this not-in-service piping. Isolation was performed with in-house NAVFAC forces on 5 Dec 2021. PWD has not explored the root cause of the false reading, as the piping is isolated, and the meter is not used for any other purposes. Possible cause of the flow readings may be air trapped in the lines that shows pressure differentials as tide changes.

HARMEYER.RA  
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NEST.1186692663  
Date: 2022.02.22  
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CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam





25 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Joint Base Pearl Harbor-Hickam – Iroquois Point Water Connection

ENCL.: (1) Interconnection line drainage schematic

1. This Memorandum for Record (MFR) is to document the process to reopen and flush the 24" potable water system interconnection line between Iroquois Point and Bishop Point on Joint Base Pearl Harbor-Hickam.
2. Like most looped systems, the water in this interconnection flows in both directions depending on demand. On work days, when residents are typically not on Iroquois Point and the Joint Base is operating, water typically flows from west to east. On nights and weekends, the water may flow from east to west, depending on if the Kapilina Homes in Iroquois Point is operating the irrigation system, and similarly, what the demand is on the Joint Base proper from housing communities near Bishop Point. The long-term closure of the line is possible because each zone has multiple feeds. The presence of these looped interconnections allows redundancy – if one feed goes off-line for maintenance or unexpectedly, the area has a redundant feed to continue service.
3. The interconnection was secured on 05 Dec. 2021 by closing the gate valve on each end (shore) of the interconnection. The water between these valves has not moved since then. When we bring this section back online, the process will be as follows, and according to the diagram in Enclosure (1).
  - a. Secure two additional valves (126 and 130 at West Loch). See Enclosure (1).
  - b. Open valve 128 (currently shut) at West Loch
  - c. Open valve at Hickam that is currently shut
  - d. Open and flush from hydrant no. 64 at West Loch, located between valves 126 and 128.
  - e. Flush transmission line for 6-8 hours to the sanitary sewer.
  - f. Flushing, chlorination and testing of the transmission main will follow ANSI/AWWA C651-05: Disinfecting Water Mains.
  - g. Collect first sample for bacteriological testing after flushing.
  - h. Collect second sample (at least 24 hours after first sample) for bacteriological testing.
  - i. Open valves 126 and 130 and valves on Bishop Point, completing the loop.

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CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam

ENCL(5)



The diagram is a hand-drawn schematic of a water distribution system. It features several key components and annotations:

- Top Section:** A horizontal line represents a main water line. A blue arrow points to it from the top right. Below this line, handwritten text reads "INST. 1953" and "20\" B.I. ACROSS CHANNEL FROM HICKAM".
- Left Side:** A vertical line is labeled "DEWATERING". To its left, a red-bordered box contains the text: "Flush from fire hydrant 64 inside EOD Compound". A red arrow points from this box to a circled valve labeled "64".
- Central Area:** A diagonal line runs from the top left towards the bottom right. Along this line, there are several valves labeled "128", "127", "126", and "130". A blue-bordered box with the text "Valve 128 currently shut, will need to open to flush through hydrant 64" has a blue arrow pointing to valve "128".
- Bottom Left:** A circular feature is labeled "METER". Below it, a blue-bordered box contains the text: "Will need to shut valves 130 and 126 (currently open)". A blue arrow points from this box to valve "126".
- Bottom Right:** A dashed line is labeled "FW 2\" PVC".
- Other Labels:** "0391" and "0345" are written near the top left. "PLUG" is written near the bottom center. "ENCLOSURE 1" is written in the bottom right corner.

22 February 2022

MEMORANDUM FOR RECORD

SUBJECT: Board of Water Supply Interconnection Status

Ref: [1] Management Inquiry Into Manana Booster/BWS dtd 29 Dec 2021

1. This Memorandum for Record (MFR) is to document the status of the Board of Water Supply (BWS) interconnections with the Joint Base Pearl Harbor Hickam Potable Water System. The JBPHH system has four interconnection points with BWS: (1) Puuloa Road, (2) Halawa Heights Road, (3) Manana Housing, and (4) Red Hill.
2. BWS physically removed the meters from two of the interconnections, creating an “air gap” between the BWS system and the Navy system at both the Puuloa Road location and the Halawa Heights Road location. BWS performed that work on or around 10 December 2021. PWD personnel confirmed that the meters were removed on 14 December 2021.
3. Red Hill and Manana Housing BWS interconnections are still physically connected. The Red Hill interconnection is isolated on both the BWS side and Navy side of the connection. Manana interconnection was opened on 16 November 2021, and is feeding Manana housing. Isolation valves have been secured from the Navy supply to Manana, to isolate Manana Housing from the JBPHH System (Reference [1]).
4. Prior to December 2017, there was a fifth BWS interconnection with the JBPHH system, located at Geiger Road. The Kalaeloa area of the JBPHH water system was transferred from Navy to the Kalaeloa Water Company in December 2017. The BWS interconnection was included in the transfer. Shortly after the transfer, PWD Utilities personnel physically removed the connection from West Loch to Geiger Road piping, “air gapping” the KWC system and the JBPHH system.

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CAPT R. Harmeyer  
Public Works Officer  
Joint Base Pearl Harbor Hickam

ENCL(6)

February 26, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: DISTRIBUTION SYSTEM EXCEEDANCE INVESTIGATION SUMMARY AND RESULTS

Encl: (1) Level 2 Distribution System Sampling Report for Flushing Zone  
(2) Stage 2 Sampling Report  
(3) DOH Guidance on the Approach to Amend the Public Health Advisory, Addendum 1.

1. The Zone D1 Distribution System sampling results are listed in Enclosure (1). The samples of the distribution system are taken at the hydrants. The categories of the results are broken down into non-detect, detect below limit levels, and exceedance. A non-detect occurs when the laboratory does not detect a measurable amount of an analyte. A detect below limit levels occurs when the laboratory detects a measurable amount of an analyte below Incident Specific Parameters (ISPs), Department of Health (DOH) Environmental Action Levels (EALs), or Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs). An exceedance occurs when the laboratory detects a chemical and the amount detected is higher than established acceptable thresholds.

2. Categories. All chemical and metal exceedances are listed in Enclosure (1). The various agency limits are listed for references and the result and location of the exceedance sample is listed in tabular form. Results highlighted in yellow exceed the ISP. Results in purple font also exceed the EAL. Results in green font also exceed the DOH MCL. Results in blue font also exceed the EPA MCL. All analytes are measured in micrograms per liter ( $\mu\text{g/L}$ ).

3. Results for Zone D1. Enclosure (2) portrays a summary of the D1 Distribution System sample data. The initial DOH ISP and EPA EAL for copper is 2.9. As provided in enclosure (3) the updated Hawaii Department of Health Action Levels (ALs) for copper are 1300  $\mu\text{g/L}$ ; the MCL is 1300  $\mu\text{g/L}$ . Two (2) Zone D1 Distribution samples showed trace amounts of copper in exceedance of the initial ISP:

Hydrant 714 at 4.30  $\mu\text{g/L}$ ,

Hydrant 731 at 3.59  $\mu\text{g/L}$

Zone D1 Distribution System sampling showed no exceedances for any other analytes. Based on these findings and DOH's addendum in enclosure (3), no further exceedance investigation is required.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

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A. M. Rodriguez  
LT, CEC, USN

# Level 2 Distribution System Sampling Report for Flushing Zone

## D1 Zone Distribution Sampling

### Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-HYD536	D1-HYD714	D1-HYD731	D1-HYD748	D1-HYD771
Location Type:	Hydrant	Hydrant	Hydrant	Hydrant	Hydrant
Residence:	FH 536	FH 714	FH 731	FH 748	FH 771
Field Sample ID:	20220112-D1-YT05	220114-D1-YT02	20220112-D1-YT02	20220112-D1-YT03	20220112-D1-YT04
Sample Date:	2022-01-12	2022-01-14	2022-01-12	2022-01-12	2022-01-12
Sample Type:	N	N	N	N	N
GENCHEM (mg/L)	2	2	2	2	2
Total Organic Carbon	0.190 U	0.200 U	0.190 U	0.190 U	0.190 U
HC (µg/L)	200	400	200	200	200
Petroleum Hydrocarbons (as Diesel)	300	300	300	300	300
Petroleum Hydrocarbons (as Gasoline)	500	500	500	500	500
Petroleum Hydrocarbons (as Motor Oil)	200	200	200	200	200
HERB (µg/L)	200	400	200	200	200
Pentachlorophenol	0.025	0.025	0.025	0.025	0.025
HG (µg/L)	0.025	0.025	0.025	0.025	0.025
Mercury	0.025	0.025	0.025	0.025	0.025
METAL (µg/L)	6	6	6	6	6
Antimony	10	10	10	10	10
Arsenic	220	220	220	220	220
Barium	0.66	0.66	0.66	0.66	0.66
Beryllium	3	3	3	3	3
Cadmium	11	11	11	11	11
Chromium	2.9	2.9	2.9	2.9	2.9
Copper	15	15	15	15	15
Lead	5	5	5	5	5
Selenium	2	2	2	2	2
Thallium	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U

## Section 2a.6 Distribution System Exceedance Investigation Summary and Results

Level 2 Distribution System Sampling Report for Flushing Zone  
D1 Zone Distribution Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID: D1-HYD536 D1-HYD714 D1-HYD731 D1-HYD748 D1-HYD771  
Location Type: Hydrant Hydrant Hydrant Hydrant Hydrant  
Residence: FH 536 FH 714 FH 731 FH 748 FH 771  
Field Sample ID: 20220112-D1-YT05 2020112-D1-YT02 2020112-D1-YT03 2020112-D1-YT04  
Sample Date: 2022-01-12 2022-01-14 2022-01-12 2022-01-12 2022-01-12  
Sample Type: N N N N N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A13085	SDG: 810122671	SDG: 2A13083	SDG: 2A13086	SDG: 2A13022
1-Methylnaphthalene	2.1	10	None	None	0.00801 U	0.0200 U	0.00801 U	0.0306 J	0.00801 U
2-Ethylhexyl adipate	4.7	10	None	None	0.00962 U	--	0.00962 U	0.00962 U	0.00962 U
2-Methylnaphthalene	None	None	None	None	0.00904 U	0.0200 U	0.00904 U	0.0443 J	0.00904 U
Atachlor	None	None	None	None	0.0110 U	0.0490 U	0.0110 U	0.0110 U	0.0110 U
Atrazine	None	None	None	None	0.00734 U	0.0290 U	0.00734 U	0.00734 U	0.00734 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.0117 UJ	0.00980 U	0.0117 UJ	0.0117 UJ	0.0117 UJ
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.437 U	0.590 U	0.437 U	0.437 U	0.437 U
Chlordane	None	None	None	None	0.0669 U	0.0320 U	0.0669 U	0.0669 U	0.0669 U
Dioctyl adipate	None	None	None	None	--	0.590 U	--	--	--
Endrin	None	None	None	None	0.00991 U	0.00500 U	0.00991 U	0.00991 U	0.00991 U
gamma-BHC (Lindane)	None	None	None	None	0.00633 U	0.00700 U	0.00633 U	0.00633 U	0.00633 U
Heptachlor	None	None	None	None	0.00965 U	0.00300 U	0.00965 U	0.00965 U	0.00965 U
Heptachlor epoxide	None	None	None	None	0.0122 U	0.00500 U	0.0122 U	0.0122 U	0.0122 U
Hexachlorobenzene	0.0003	0.0003	1	1	0.0980 U	0.00980 U	0.0980 U	0.0980 U	0.0980 U
Hexachlorocyclopentadiene	50	None	50	50	0.00594 U	0.00980 U	0.00594 U	0.00594 U	0.00594 U
Methoxychlor	None	None	None	None	0.00863 U	0.0320 U	0.00863 U	0.00863 U	0.00863 U
Naphthalene	12	17	None	None	0.0103 U	0.0200 U	0.0103 U	0.0633	0.0103 U
PCB, Total	None	None	None	None	0.100 U	--	0.100 U	0.100 U	0.100 U
PCB-1016 (Aroclor 1016)	None	None	None	None	0.0157 U	0.0220 U	0.0157 U	0.100 U	0.0157 U
PCB-1221 (Aroclor 1221)	None	None	None	None	0.0436 U	0.0790 U	0.0436 U	0.100 U	0.0436 U
PCB-1232 (Aroclor 1232)	None	None	None	None	0.0102 U	0.0850 U	0.0102 U	0.100 U	0.0102 U
PCB-1242 (Aroclor 1242)	None	None	None	None	0.0737 U	0.0720 U	0.0737 U	0.100 U	0.0737 U
PCB-1248 (Aroclor 1248)	None	None	None	None	0.0941 U	0.0230 U	0.0941 U	0.100 U	0.0941 U
PCB-1254 (Aroclor 1254)	None	None	None	None	0.0869 U	0.0350 U	0.0869 U	0.100 U	0.0869 U
PCB-1260 (Aroclor 1260)	None	None	None	None	0.0379 U	0.0330 U	0.0379 U	0.100 U	0.0379 U
Pentachlorophenol	None	None	None	None	0.0242 U	--	0.0242 U	0.0242 U	0.0242 U
Sinazine	None	None	None	None	0.00734 U	0.0290 U	0.00734 U	0.00734 U	0.00734 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A13085	SDG: DA40926	SDG: 2A13083	SDG: 2A13086	SDG: 2A13022
1,1,1-Trichloroethane	11	11	200	200	0.256 U	0.500 U	0.256 U	0.256 U	0.256 U
1,1,2-Trichloroethane	5	5	3	5	0.190 U	0.500 U	0.190 U	0.190 U	0.190 U
1,1-Dichloroethene	7	7	7	7	0.160 U	0.500 U	0.160 U	0.160 U	0.160 U



## Level 2 Distribution System Sampling Report for Flushing Zone

### D1 Zone Distribution Sampling Chemistry Results

Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID: D1-HYD536 D1-HYD714 D1-HYD731 D1-HYD748 D1-HYD771  
 Location Type: Hydrant Hydrant Hydrant Hydrant Hydrant  
 Residence: FH 536 FH 714 FH 731 FH 748 FH 771  
 Field Sample ID: 2020112-D1-YT05 2020112-D1-YT02 2020112-D1-YT03 2020112-D1-YT04  
 Sample Date: 2022-01-12 2022-01-14 2022-01-12 2022-01-12 2022-01-12  
 Sample Type: N N N N N

VOC (ug/L)	Incident Specific Parameters	DOH Environmental Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: 2A13085	SDG: DA40926	SDG: 2A13083	SDG: 2A13086	SDG: 2A13022
1,2,4-Trichlorobenzene	70	70	70	70	0.170 U	0.500 U	0.170 U	0.170 U	0.170 U
1,2-Dichlorobenzene	10	10	600	600	0.190 U	0.500 U	0.190 U	0.190 U	0.190 U
1,2-Dichloroethane	5	5	5	5	0.243 U	0.500 U	0.243 U	0.243 U	0.243 U
1,2-Dichloropropane	5	5	5	5	0.130 U	0.500 U	0.130 U	0.130 U	0.130 U
1,4-Dichlorobenzene	5	5	75	None	0.180 U	0.500 U	0.180 U	0.180 U	0.180 U
Benzene	5	5	5	5	0.150 U	0.500 U	0.150 U	0.150 U	0.150 U
Carbon Tetrachloride	5	5	5	5	0.270 U	0.500 U	0.270 U	0.270 U	0.270 U
Chlorobenzene	25	25	100	100	0.150 U	0.500 U	0.150 U	0.150 U	0.150 U
cis-1,2-Dichloroethene	70	70	70	70	0.250 U	0.500 U	0.250 U	0.250 U	0.250 U
Ethylbenzene	700	7.3	700	700	0.210 U	0.500 U	0.210 U	0.210 U	0.210 U
m,p-Xylene	10000	13	None	None	0.330 U	0.500 U	0.330 U	0.330 U	0.330 U
Methylene chloride	5	5	5	5	0.303 U	0.500 U	0.303 U	0.303 U	0.303 U
o-Xylene	10000	13	None	None	0.200 U	0.500 U	0.200 U	0.200 U	0.200 U
Styrene	10	10	100	100	0.190 U	0.500 U	0.190 U	0.190 U	0.190 U
Tetrachloroethene (PCE)	5	5	5	5	0.180 U	0.500 U	0.180 U	0.180 U	0.180 U
Toluene	1000	9.8	1000	1000	0.294 U	0.500 U	0.294 U	0.294 U	0.294 U
trans-1,2-Dichloroethene	100	100	100	100	0.259 U	0.500 U	0.259 U	0.259 U	0.259 U
Trichloroethene (TCE)	5	5	5	5	0.180 U	0.500 U	0.180 U	0.180 U	0.180 U
Vinyl chloride	2	2	2	2	0.180 U	0.500 U	0.180 U	0.180 U	0.180 U

#### Notes:

– Indicates that the sample was Not Analyzed for the analyte

Results highlighted yellow exceed the ISP

Results in green font also exceed the MCL

Results in green font also exceed the DOH MCL

Results in blue font also exceed the EPA MCL

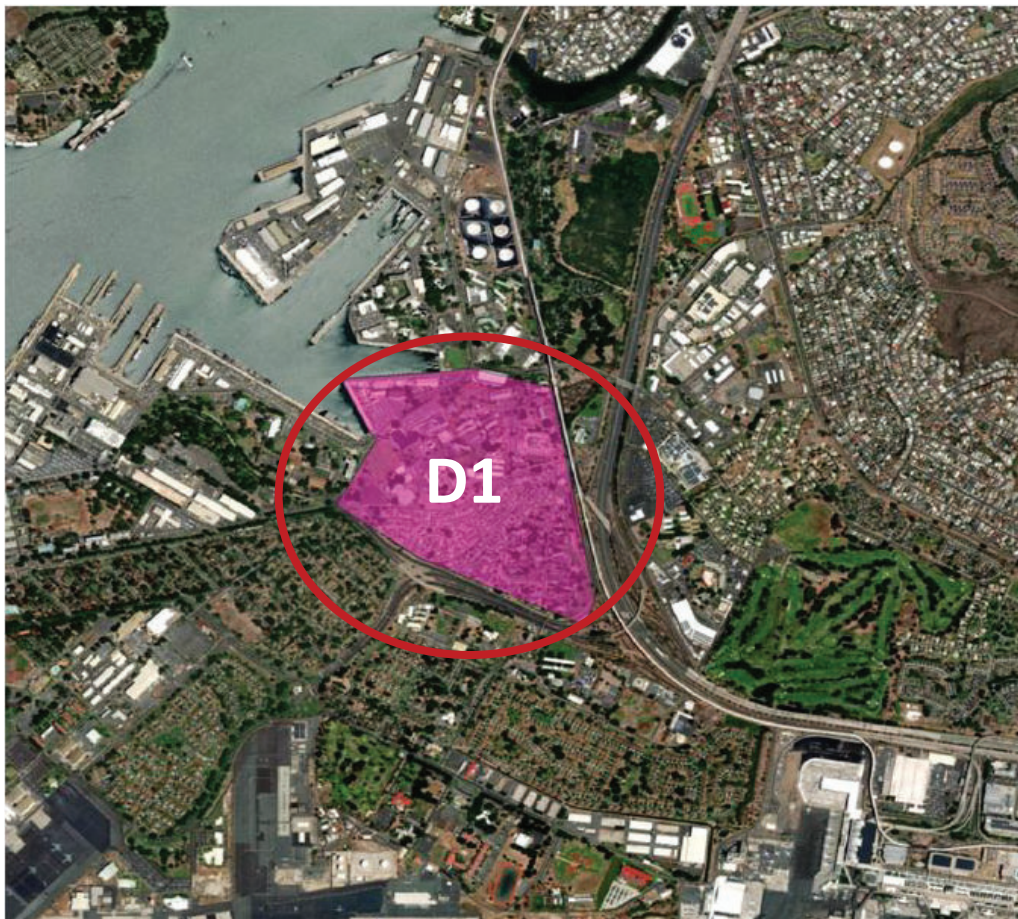
µg/L = Micrograms per Liter



## Interagency Drinking Water System Team

### Drinking Water Distribution System Recovery Plan: *Stage 2 Sampling* *Results for Zone D1*

Joint Base Pearl-Hickam (JBPHH)  
26 January 2022



*Neighborhoods included in Zone D1: Hale Moku and Hoklani*

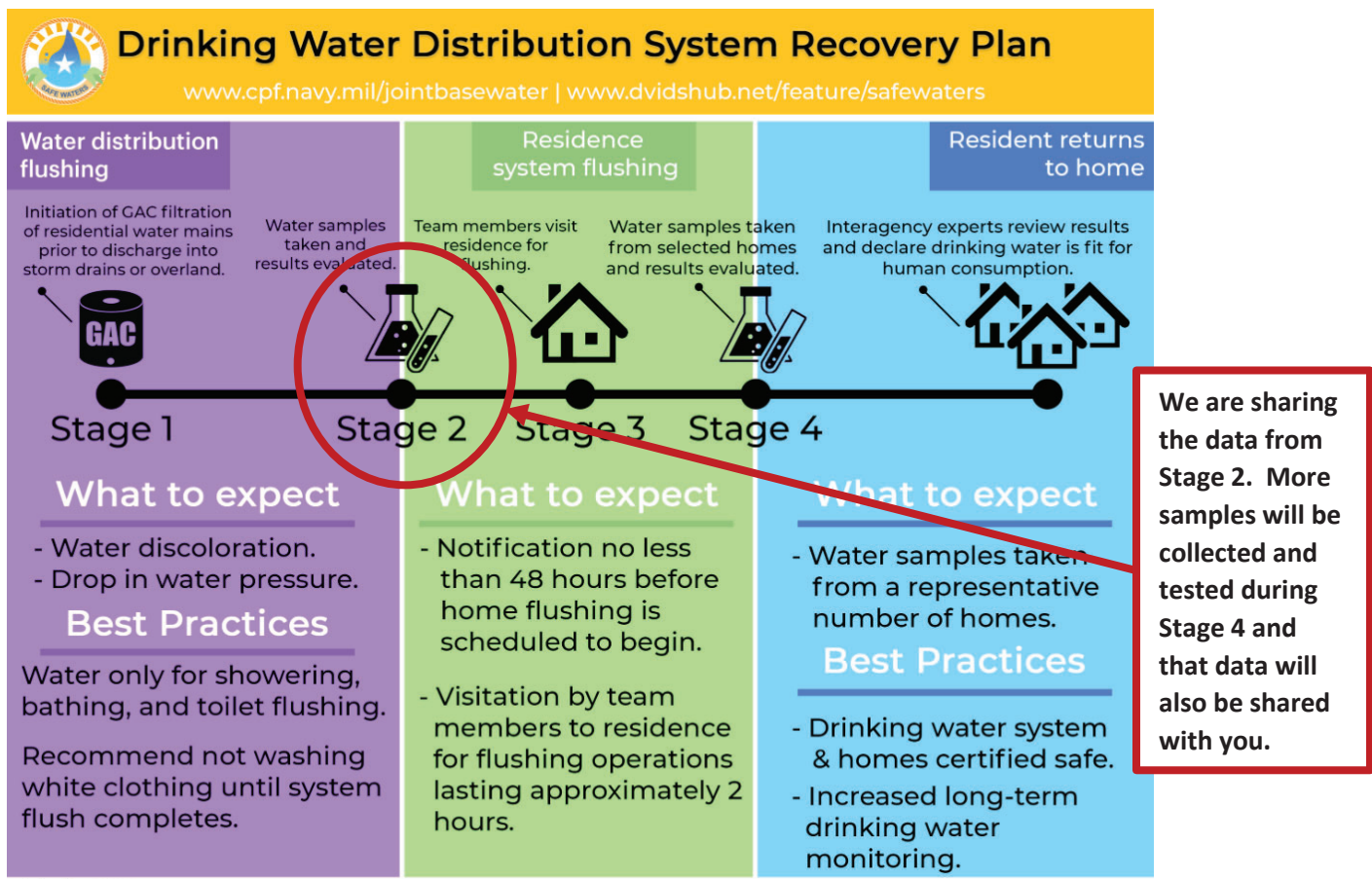


## EXECUTIVE SUMMARY FOR ZONE D1

The State of Hawaii Department of Health's (DOH) November 29, 2021 [Public Health Advisory for the JPBHH Public Water System](#) for Zone D1 remains in effect. DOH recommends all Navy water system users should avoid using the water for drinking, cooking, or oral hygiene. This includes consumption by pets. Navy water system users who detect a fuel-like odor from their water should also avoid using the water for bathing, dishwashing or laundry.

We have thoroughly flushed, sampled, and tested the water distribution system lines (Water Mains) in Zone D1. This Zone has moved to Stage 3–Building Flushing/Stage 4–Building Sampling, in the Drinking Water Distribution System Recovery Plan (see the Figure below). Based on the samples collected and tested, to date, this water meets all U.S. Environmental Protection Agency (EPA) and State of Hawaii Department of Health (DOH) standards that are applicable to the Navy Water System Incident.

No final conclusions or recommendations can be made at this time for the drinking water in your zone because more drinking water samples are being collected and tested from Water Mains, residences, buildings, schools, and child development centers (after they have been flushed). We are sharing this information to keep you updated on our progress towards restoring the water supply being provided to your community.



For additional information, please visit: <https://www.cpf.navy.mil/JBPHH-Water-Updates/>.





Table 1. Contaminants Detected in Drinking Water Samples Collected from Water Mains in Zone D1

Contaminant	Sampling Date	Units	DOH Project Screening Level	Basis of DOH Screening Level <sup>2</sup>	Highest Level Detected	Meets DOH Screening Level? (Yes / No)	Typical Source of Contaminant
<b>Contaminants of Concern<sup>1</sup></b>							
Benzene	12/29/2021	ppb	5	MCL	ND	Yes	Discharge from factories; Leaching from gas storage tanks and landfills
Ethylbenzene	12/29/2021	ppb	700	MCL	ND	Yes	Discharge from petroleum refineries
Toluene	12/29/2021	ppb	1000	MCL	ND	Yes	Discharge from petroleum factories
m,p-Xylenes	12/29/2021	ppb	10000	MCL	ND	Yes	Discharge from petroleum factories; Discharge from chemical factories
o-Xylenes	12/29/2021	ppb	10000	MCL	ND	Yes	
1-Methylnaphthalene	12/29/2021	ppb	2.1	ISP	NA	NA <sup>5</sup>	Used to make other chemicals such as dyes, and resins; also, present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites
2-Methylnaphthalene	12/29/2021	ppb	4.7	ISP	NA	NA <sup>5</sup>	Used to make other chemicals such as dyes, and resins; also used to make vitamin K; and is present in cigarette smoke, wood smoke, tar, asphalt, and at some hazardous waste sites
Naphthalene	12/29/2021	ppb	12	ISP	ND	Yes	Naphthalene is found in coal tar or crude oil and is used in the manufacture of plastics, resins, fuels, and dyes, and as a fumigant
Lead	12/29/2021	ppb	15	ISP	ND	Yes	Corrosion of household plumbing systems; Erosion of natural deposits
Total Petroleum Hydrocarbons (TPH)-Gasoline	12/29/2021	ppb	200	ISP	ND	Yes	Gasoline is a petroleum product that can contaminate drinking water through spills and other releases into the environment
TPH-Diesel	12/29/2021	ppb	200	ISP	ND	Yes	Diesel is a petroleum product that can contaminate drinking water through spills and other releases into the environment
TPH-Oil	12/29/2021	ppb	200	ISP	ND	Yes	Oil is a petroleum product that can contaminate drinking water through spills and other releases into the environment
Total Organic Carbon (TOC)	01/04/2021	ppb	2000	ISP	ND	Yes	Naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources

**Notes:**

- [https://health.hawaii.gov/about/files/2021/12/21.12.16 What-Are-Petroleum-Hydrocarbons.pdf](https://health.hawaii.gov/about/files/2021/12/21.12.16%20What-Are-Petroleum-Hydrocarbons.pdf)



## **Drinking Water Distribution System Recovery Plan: Stage 2 Sampling Results for Zone D1**

### **What is the purpose of this Stage 2 Sampling Results Report?**

This is a progress report and presents the testing results from drinking water distribution system samples that have been collected, to date, from the water distribution system lines (Water Mains) in your Zone. These samples were collected after extensive flushing of the distribution system was performed using clean water from the Navy Waiawa Shaft. This is Stage 2 of the 4-Stage process described in the [Drinking Water Distribution System Recovery Plan](#).

No final conclusions or recommendations can be made at this time for the drinking water in your zone because more drinking water samples are being collected and tested from Water Mains, residences, buildings, schools, and child development centers. We are sharing this information to keep you updated on our progress towards restoring the water supply being provided to your community.

### **What was found?**

The table presented above (Table 1) presents all contaminants that were detected in drinking water samples that have been collected, to date, from the Water Mains in your Zone during Stage 2. Hawaii DOH used multiple standards/criteria (called DOH Project Screening Levels) to assess the safety of the drinking water to include:

- EPA and Hawaii DOH Maximum Contaminant Levels (MCLs) standards for drinking water,
- Previously established Environmental Action Levels (EALs); and
- Incident Specific Parameters (ISPs).

Based on these data, this Zone moved to Stage 3—Building/Home Flushing, in the [Drinking Water Distribution System Recovery Plan](#).

### **What contaminants were tested?**

Drinking water, including bottled water, can contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants tested can be obtained by calling the Hawaii DOH Safe Drinking Water Branch at 808-586-4258.

In order to ensure that drinking water is safe to drink, EPA and Hawaii DOH regulate the amount of certain contaminants in water provided by public water systems. The primary categories of monitored contaminants include volatile organic compounds (VOCs), synthetic organic chemicals (SOCs)/semi-volatile organic compounds (SVOCs), metals, Total Petroleum Hydrocarbons (TPH), Total Organic Carbon (TOC) chlorine and pH. A description of these contaminant categories can be found under Explanation of Terms located at the end of this report. The full list of contaminants that were tested for are





presented in the laboratory reports are located at: <https://www.cpf.navy.mil/JBPHH-Water-Updates/>.

### **What happened leading up to Public Health Advisory being issued?**

After receiving reports of a fuel-like smell or visual sheen in the drinking water from residents of Joint Base Pearl Harbor – Hickam (JBPHH) on November 28, 2021, the Navy immediately stopped using water from the Red Hill Shaft. Out of abundance of caution, the Navy also stopped using water from the Navy Aiea Halawa Shaft. The Navy's water system provides drinking water to JBPHH, including the Army, Air Force, Marine Corps, and Hawaii residents in some neighborhoods close to JBPHH. The Hawaii DOH issued a [Public Health Advisory on November 29, 2021](#). The Hawaii DOH, the United States Environmental Protection Agency (EPA), Navy, and Marine Corps Public Health Center, and Army formed the Interagency Drinking Water System Team (IDWST) to work on a coordinated effort to restore safe drinking water to all Navy Water System users.

### **Has the Public Health Advisory been amended or lifted?**

No. Please continue to follow the Public Health Advisory for Navy Water System users and only use your drinking water for non-consumptive purposes as long as your water does not have a visible sheen and remains odor free. Your service may have provided more restrictive guidance. As stated above, we are at Stage 2 of the 4-Stage process described in the Drinking Water System Recovery Plan and the Public Health Advisory will be re-evaluated by Hawaii DOH after Stage 4 in the process.

### **Where does our water come from?**

The source of all water for all Navy Water System users now comes only from the Navy Waiawa Shaft, which was not impacted by the release of Jet Fuel (JP-5) that occurred at Red Hill in late November 2021. The Waiawa Shaft has been sampled and EPA and DOH confirmed that it meets all federal and state drinking water standards and it will continue to be sampled in accordance with EPHA and DOH requirements.

### **What is the IDWST doing to clean the drinking water distribution system?**

The IDWST evaluated multiple options for cleaning the Navy drinking water distribution system and determined that high-volume flushing of the Navy drinking water distribution system (all water mains/laterals/buildings) with 3 to 5 volumes of clean water from the Waiawa Shaft, followed by extensive testing to confirm that flushing worked, would restore safe drinking water to all Navy Water System users.

### **When was Water Main flushing conducted in Zone D1?**

The final round of distribution water main flushing in Zone D1 was completed on December 28, 2021.



## How much water was flushed through the water distribution system in Zone D1?

From December 23 – 28, 2021, a total of 0.8 million gallons was flushed through Zone D1.

## Where can I get more information about the potential health effects associated with these contaminants?

Hawaii Department of Health (DOH)

<https://health.hawaii.gov/about/navy-water-system-quality-updates/>.

Call the DOH Safe Drinking Water Branch at 808-586-4258

US Environmental Protection Agency (EPA)

<https://www.epa.gov/ground-water-and-drinking-water/forms/online-form-epas-office-ground-water-and-drinking-water>.

Call EPA Region 9's Environmental Information Center at 1-866-372-9378

See the FACT SHEET, Understanding Your Water Quality Summary Table, available online at: <https://www.cpf.navy.mil/JBPHH-Water-Updates/>.

## Acronyms used in the Table

AL	Action Level (for Lead and Copper)
DOH	Hawaii Department of Health
EAL	Environmental Action Level
EPA	U.S. Environmental Protection Agency
ISP	Incident Specific Parameter
MCL	Maximum Contaminant Level
NA	Not Analyzed
ND	Non-Detect
ppb	parts per billion (or ug/L)
SDWA	Safe Drinking Water Act
SOCs	Synthetic Organic Compounds (also known as SVOCs)
SVOCs	Semi-Volatile Organic Compounds (same as SOC)
TPH	Total Petroleum Hydrocarbons
TOC	Total Organic Carbon
ug/L	micrograms per liter (or ppb)
VOCs	Volatile Organic Compounds

## Explanation of Terms used in this Report

**Action Level (AL).** This AL is for Lead and Copper. The AL is a measure of the effectiveness of the corrosion control treatment in water systems. The AL is not a standard for establishing a safe level of lead or copper. The AL is the point at which certain provisions of the proposed standards must be initiated.

**Contaminant.** Contaminant is any physical, chemical, biological, or radiological substance or matter in water, and can be either healthy or unhealthy, depending on the particular substance and concentration. It could also be a physical parameter monitored like pH or temperature.



**Incident Specific Parameters (ISP).** To more comprehensively monitor and respond to this specific petroleum contamination of drinking water, the DOH identified contaminants that require additional action prior to amending the Health Advisory. The ISP is used as a line of evidence to evaluate the data generated in each Zone during the investigation conducted by the IDWST.

**Maximum Contaminant Level (MCL).** An MCL is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. The MCL is set to protect the public from acute and chronic health risks associated with consuming water containing these contaminants.

**Metals.** Metals are chemicals that are not derived from living sources and in general do not contain carbon. Metals include antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, copper, cyanide, fluoride, lead, mercury, nitrate, nitrite, selenium, and thallium. These contaminants get into drinking water supplies through industrial discharge or spills, erosion of natural deposits, corrosion, sewage discharge, fertilizer runoff, and other sources.

**Project Specific Screening Level.** DOH uses multiple criteria to assess the safety of the drinking water including maximum contaminant levels (MCLs), previously established environmental action levels (EALs) and incident specific parameters (ISPs).

**Synthetic Organic Compounds (SOCs)/Semi-Volatile Organic Compounds (SVOCs).** SOCs and SVOCs may be used interchangeably and are man-made, organic (carbon-based) chemicals that are less volatile than Volatile Organic Contaminants (VOCs). They are used as pesticides, defoliants, fuel additives, and as ingredients for other organic chemicals.

**Tier 1 Environmental Action Level (EAL).** Tier 1 Environmental Action Levels (Tier 1 EALs) are concentrations of contaminants in drinking water and other media (e.g., soil, soil gas, and groundwater) below which the contaminants are assumed to not pose a significant threat to human health or the environment. Exceeding the Tier 1 EAL does not necessarily indicate that contamination at the site poses environmental hazards but generally warrants additional investigation.

**Total Petroleum Hydrocarbons (TPH).** TPH is a term used to describe a large family of several hundred chemical compounds that come from crude oil. Crude oil is used to make petroleum products, which can contaminate the environment. TPH is grouped by TPH-Gasoline, TPH-Diesel, and TPH-Oil.

**Total Organic Carbon (TOC).** TOC is naturally present in the environment, but also can be an indicator of contamination, including petroleum or other sources.

**Units.** A unit is the concentration of contaminant found in the water. For this report, the units are expressed in U.S. Standard Units.

U.S. Standard Unit (Name)	Acronym	Equivalent International System of Units (Name)	Acronym
parts per million	ppm*	milligrams per Liter	mg/L
parts per billion	ppb*	micrograms per Liter	ug/L

\*One (1) part per million (ppm) is 1,000 parts per billion (ppb).

**Volatile Organic Compounds (VOCs).** VOCs are a class of chemicals that contain carbon and evaporate, or volatilize, easily into air at room temperature. VOCs are found in a variety of commercial, industrial, and residential products, including gasoline, solvents, cleaners and degreasers, paints, inks and dyes, and pesticides.



*Kathleen Ho*

02/12/2022

KATHLEEN S. HO

Deputy Director of Environmental Health

DATE

## DOH's Guidance on the Approach to Amending the Public Health Advisory, Addendum 1

Public Health Advisory initiated November 29, 2021

Joint Base Pearl Harbor-Hickam Public Water System No. 360

HEER Incident Case No.: 20211128-1848

**Purpose:** This guidance provides the criteria that the Hawaii Department of Health (DOH) will be using to **amend** the Public Health Advisory (Advisory) issued on November 29, 2021.

DOH's priority is to protect the public health of the people of Hawaii. The guidance is based on "lines of evidence" (Table 1) that must be met before DOH will amend the health advisory and issue notices that the water can be used for drinking. The Navy must also commit to following the long-term monitoring (LTM) of system water quality for this incident under the IDWST Drinking Water Sampling Plan, as amended.

**Background:** A chemical release of petroleum, which is a hazardous substance, entered the Joint Base Pearl Harbor-Hickam (JBPHH) drinking water distribution system and the Red Hill Shaft. This release triggered an emergency response and DOH issuance of an Advisory on November 29, 2021. State and Federal Drinking Water (DW) Maximum Contaminant Levels (MCLs) under the Safe Drinking Water Act do not adequately address petroleum contamination of drinking water. DOH has established Environmental Action Levels (EALs) and Incident Specific Parameters (ISPs) to more comprehensively monitor and respond to petroleum contaminated drinking water. Any contaminants that exceed the State and Federal DW MCLs, EALs, or ISPs require additional action prior to amending the Advisory. Lines of evidence will be achieved by evaluating the data generated during the investigation conducted by the Interagency Drinking Water System Team (IDWST). The data will be assessed for each Flushing Zone of the Drinking Water Distribution System Recovery Plan. All lines of evidence will require documentation.

**DOH Project Screening Levels:** State and Federal Drinking Water MCLs, specified State EALs, and ISPs are considered in development of Project Screening Levels. The actions for the thresholds for each contaminant are listed in Tables 2 and 3.

Table 1: Lines of Evidence Under Evaluation

1. Ensure no contamination is entering the water system.		
Objective	Lines of Evidence	Incident Specific Criteria
1a	All reported sources of contamination are isolated and contained.	Contamination from Red Hill Shaft is isolated from Navy's water distribution system.
1b	The regulated public water system's water quality data is compliant.	Data meets Federal DW MCLs, specified State EALs, and ISPs.
1c	No additional contamination through the distribution system is occurring.	Cross Connection Control investigation shows distribution system is protected, resulting in no additional sources of contamination.
2. Ensure no contamination remains in the system and water chemistry concerns are addressed.		
Objective	Lines of Evidence	Incident Specific Criteria
2a	Water within the distribution system meets State and Federal DW MCLs, specified State EALs, and ISPs.	<ul style="list-style-type: none"> <li>• Zone flushing plan demonstrates entire distribution system is flushed.</li> <li>• Certification of Water Storage Tank(s) Flushing.</li> <li>• Sample results show the water in distribution system meets State and Federal DW MCLs, specified State EALs, and ISPs.</li> <li>• Drinking water does not show sheen, olfactory evidence, or other qualitative methods of petroleum.</li> </ul>
2b	Water in premise plumbing of homes/buildings meets State and Federal DW MCLs, specified State EALs, and ISPs.	<ul style="list-style-type: none"> <li>• Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.</li> <li>• Certification of Completed Irrigation Line Flushing.</li> <li>• Sample Plan includes 72-hour stagnation to account for leaching of contaminants from premise plumbing.</li> <li>• Sample results show water in homes/buildings meets State and Federal DW MCLs, specified State EALs, and ISPs.</li> </ul>

**Table 2: Threshold Determinations that Drinking Water is NOT Fit For Human Consumption**

*If the DOH MCLs or DOH Project Screening Levels are exceeded, the Drinking Water Health Advisory shall NOT be amended and the drinking water is considered NOT fit for human consumption.*

Table 2 Contaminant	DOH MCL (ug/L)	DOH Project Screening Level (ug/L)	Basis	Notes
Benzene	5	5	DOH MCL <sup>1</sup>	
Toluene	1,000	1,000		
Ethylbenzene	700	700		
Xylenes (total)	10,000	10,000		
JP-5 as Combined Total Petroleum Hydrocarbons (TPH)-Gasoline, Diesel, and Oil Ranges [Incident Specific Parameter]	Not Applicable	211	Release of fresh fuel and potential direct release.	The 211 ug/L screening level is based on risk-based action levels for TPH associated with JP-5 jet fuel described in a HIDOH Technical Memorandum dated January 27, 2022, revised February 12, 2022 (HIDOH 2022). The action (screening) level conservatively assumes that TPH detected in the water is associated with non-degraded, dissolved-phase, fuel in the drinking water system. The memorandum serves as an addendum to the <i>HIDOH 2017 EAL Guidance</i> <sup>2</sup> .
1,1,1-Trichloroethane	200	200	DOH MCL <sup>1</sup>	
1,1,2-Trichloroethane	5	5		
1,1-Dichloroethylene	7	7		
1,2,4-Trichlorobenzene	70	70		
1,2-Dichlorobenzene	600	600		
1,2-Dichloroethane (EDC)	5	5		
1,2-Dichloropropane (DCP)	5	5		
1,4-Dichlorobenzene	75	75		
Carbon tetrachloride (CTC)	5	5		
Chlorobenzene	100	100		
cis-1,2-Dichloroethylene	70	70		
Dichloromethane	5	5		
Styrene	100	100		
Tetrachloroethylene	5	5		
trans-1,2-Dichloroethylene	100	100		
Trichloroethylene (TCE)	5	5		
Vinyl Chloride	2	2		
Benzo[a]pyrene	0.2	0.2		
Di(2-ethylhexyl)phthalate	6	6		
Antimony	6	6		
Arsenic	10	10		



Table 2 Contaminant	DOH MCL (ug/L)	DOH Project Screening Level (ug/L)	Basis	Notes
Barium	2000	2000	DOH MCL <sup>1</sup>	
Beryllium	4	4		
Cadmium	5	5		
Chromium	100	100		
Copper <sup>3</sup>	1300	1300	DOH AL <sup>1</sup>	
Lead <sup>3</sup>	15	15		
Mercury	2	2	DOH MCL <sup>1</sup>	
Selenium	50	50		
Thallium	2	2		
Dichloroethylene, 1,2- (Mixed Isomers)	70	70		
Total trihalomethanes (TTHM) (sum of chloroform, bromoform, bromodichloromethane, and dibromochloromethane).	80	80		
Total Haloacetic acids (five) (HAA5) (sum of mono-, di-, trichloroacetic acids and mono- and dibromoacetic acids).	60	60		
Bromate	10	10		
Chlorite	1000	1000		
Notes: <sup>1</sup> CONTAMINANTS REGULATED BY THE SAFE DRINKING WATER BRANCH (updated 7/10/14) at <a href="https://health.hawaii.gov/sdwb/files/2014/07/MCL-Fct-2014-07-10.pdf">https://health.hawaii.gov/sdwb/files/2014/07/MCL-Fct-2014-07-10.pdf</a> <sup>2</sup> HDOH, 2017, Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater – Hawaii Edition (Fall 2017): Hawai'i Department of Health, Office of Hazard Evaluation and Emergency Response. <a href="https://health.hawaii.gov/heer/guidance/ehe-and-eals/">https://health.hawaii.gov/heer/guidance/ehe-and-eals/</a> . HDOH, 2022, Recommended Risk-Based Drinking Water Action Levels for Total Petroleum Hydrocarbons (TPH) Associated with Releases of JP-5 Jet Fuel: Hawai'i Department of Health, Hazard Evaluation and Emergency Response Office, January 27, 2022, revised February 12, 2022. <sup>3</sup> Action Levels.				

**Table 3: Threshold Concentrations to Trigger Investigation(s)**

*If the DOH Project Screening Level is exceeded, the Navy shall investigate the source(s) of the contamination under direction of the DOH.*

Table 3 Contaminant	DOH MCL (ug/L)	DOH Project Screening Level (ug/L)	Basis	Notes
1-methylnaphthalene	None	10	HIDOH EALS Table D-1a <sup>1</sup>	<p>HIDOH 2017<sup>2</sup> (lowest of drinking water toxicity and taste and odor action levels). If the Project Screening Level for the listed contaminants are exceeded, the Navy shall:</p> <ol style="list-style-type: none"> <li>1. Notify the DOH within 24 hours of receipt of the preliminary analytical results;</li> <li>2. Start the investigation of the source of the contamination pursuant to the DOH <i>Technical Guidance Manual</i><sup>3</sup>;</li> <li>3. Submit a draft Corrective Action Plan to the DOH for approval within 72 hours of receipt of the preliminary analytical results; and</li> <li>4. Comply with interim actions as identified by DOH.</li> </ol>
2-methylnaphthalene	None	10		
Naphthalene	None	17		<p>TOC used as an additional surrogate for TPH to increase confidence in representativeness of sample data.</p> <ul style="list-style-type: none"> <li>• While most Oahu ground water sources are closer to 1000 ug/l or below, the proposed EAL acknowledges that distribution system conditions and operational changes may cause a temporary increase in baseline TOC fluctuations.</li> <li>• The proposed EAL can be supported by all current EPA approved drinking water methods utilized for compliance with 40 CFR 141.132(d)(3) as revised: <a href="https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100WD1L.txt">https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100WD1L.txt</a></li> </ul> <p>Results with Detection Limits up to 1500 ug/L may be used to meet the criteria for amending the health advisory.</p>
Total Organic Carbon (TOC) [Incident Specific Parameter]	None	2000	Additional surrogate for TPH	<p>Within 12 hours of field observations by Navy or DOH or EPA or within 24 hours of receipt of a complaint by the Navy or DOH, the Navy shall follow the <i>JBPHH Water Response Resident Resources</i> or the Water Rapid Response Team process and notify DOH of the status of the response.</p> <p>This continues to be a trigger under the Long Term Monitoring Plan.</p>
Fuel-like Odor in the Water or Obvious Petroleum Sheen, or Dermal Irritation due to water [Incident Specific Parameter]	N/A	Present	Public Health Advisory	

<sup>1</sup> HIDOH EALS Table D-1a. Groundwater Action Levels. <https://health.hawaii.gov/heer/files/2019/11/HDOH-EAL-Surfer-Fall-2017.xlsx>

<sup>2</sup> HIDOH, 2017. Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater – Hawaii Edition (Fall 2017): Hawaii Department of Health, Office of Hazard Evaluation and Emergency Response. <https://health.hawaii.gov/heer/guidance/ehe-and-eals/>

<sup>3</sup> HIDOH, 2017, DOH *Technical Guidance Manual*, <https://health.hawaii.gov/heer/tgm/>.



Interagency Drinking Water System Team  
Zone D1 Removal Action Report  
February 2022

**Line of Evidence 2b**

**Water in Premise Plumbing of Homes/Buildings does not exceed State and Federal Drinking Water MCLs, specified State EALs, and ISPs**

**Table 1: Lines of Evidence Under Evaluation – Ensure no contamination remains in the system and water chemistry concerns are addressed.**

**Objective 2b** - Water in premise plumbing of homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Incident Specific Criteria –

- Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.
- Sample Plan includes 72-hour stagnation to account for leaching of contaminants from premise plumbing.
- Sample results show water in homes/buildings does not exceed State and Federal DW MCLs, specified State EALs, and ISPs.

Lines of Evidence	Completion Status	Outstanding Items
Flushing Plan includes procedures to ensure no service connections will re-contaminate the distribution system.	Complete	<ul style="list-style-type: none"> <li>• None.</li> </ul>

February 20, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: SUMMARY OF LINE OF EVIDENCE OBJECTIVE 2B – WATER IN PREMISE OF PLUMBING OF HOMES/BUILDINGS DOES NOT EXCEED STATE AND FEDERAL DW MCLs, SPECIFIED STATE EALs, AND ISPs

Encl: (1) 2b.1 Flushing Records and Distribution System Pressure Logs During Residential Flushing  
(2) 2b.2 Residential Sampling Report for Flushing Zone  
(3) 2b.3 Exceedance Investigation Summary and Results  
(4) 2b.4 Certification of Completed Irrigation Flushing  
(5) 2b.5 DOH Guidance for Active Irrigation Line Purging and Flushing

1. Enclosures (1) through (5) document completion of Line of Evidence 2b, that water in premise of plumbing of homes/buildings does not exceed State of Hawaii and Federal Drinking Water standards, Maximum Contaminate Levels, Environmental Action Levels and Incident Specific Parameters. On the evening of November 28, 2021, the Red Hill Shaft was secured from operation and all pumping operations ceased. The Aiea/Halawa shaft briefly served as the secondary source starting on November 28, 2021, but it was shut down on December 3, 2021 to prevent potential westward contaminant migration in the aquifer and because there were concerns over high chloride concentrations caused by saltwater intrusion. Since December 3, 2021, the Waiawa Shaft has been the sole water source providing potable water to the Joint Base Pearl Harbor-Hickam (JBPHH) distribution network. Zone D1 is part of the JBPHH Drinking Water system that is operated and maintained by the United States Navy. Flushing operations are summarized in Enclosure (1), signed by CDR Trevor Bingham, team lead for the Drinking Water Residential and Non-residential Recovery Team.

2. Enclosure (1) documents the flushing records for all facilities within Zone D1, as well as pressure logs for the distribution system during facility flushing operations. The completion of irrigation flushing in Zone D1, described in Enclosure (5), is documented in Enclosure (4). Sampling data collected after flushing is summarized in Enclosure (2).

3. Sample results with analyte detections exceeding the prescribed Maximum Contaminant Level (MCL), Environmental Action Level (EAL), or Incident Specific Parameter (ISP) are documented in Enclosure (3). The follow-on investigation summary and additional sampling results are also documented in Enclosure (3).

4. This information documents completion of Line of Evidence 2b, that water in premise of plumbing of homes/buildings does not exceed State of Hawaii and Federal Drinking Water standards, MCLs, EALs, or ISPs.

5. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and I believe the submitted information is true, accurate, and complete.

WETZEL.CHRISTOPHE  
R.JAMES.1540194862  
C. J. Wetzel  
LT, CEC, USN

Digitally signed by  
WETZEL.CHRISTOPHER.JAMES.1  
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16 February 2022

MEMORANDUM

From: Naval Facilities Engineering Systems Command Representative, EWG Team  
To: Interagency Drinking Water System Team

Subj: RECORDS OF COMPLETED RESIDENTIAL AND NON-RESIDENTIAL FLUSHING  
ZONE D1

Ref: (a) Single Family Home Flushing Plan Checklist and Standard Operating Procedures,  
December 2021

Encl: (1) EDMS Residential Flushing Records Zone D1  
(2) EDMS Non-Residential Flushing Records Zone D1  
(3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

1. This memo documents the completion of residential and non-residential flushing in Zone D1. The completed records of residential flushing, as shown in Enclosure (1), document the flushing of 506/508 homes in EDMS. Two homes were condemned and either had water lines disconnected or plumbing being replaced. The completed records of non-residential flushing, as shown in Enclosure (2), document the flushing of all 74 facilities in EDMS.

2. The distribution pressure was monitored on site using pressure gauges while flushing homes to ensure that the pressure did not drop below 30 psi the industry standard (Uniformed Facilities Guide 3-230-02). Navy Sailors of CBMU 303 logged the pressure gauges every hour. Enclosure (3) further demonstrates the sustained pressure well above 30 psi during the period of flushing in Zone D1.

3. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

Very respectfully,

BINGHAM.TREVOR.A  
MMON.1131940048  
T. A. BINGHAM  
CDR, CEC, USN

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Encl: (1) EDMS Residential Flushing Records Zone D1

Flushing Zone D1

2022-01-07 - 2022-01-08

Total Homes	Total Homes Flushed	Percent Complete	No Access	Flushed on Selected Dates
508	506	100.0 %	2	506

Zone	Neighborhood	Address	Arrive Date	Start Time	Certified	Summary General Notes	Unable To Access	Access Reason
Flushing Zone D1		3306 Valdez Pl (D1-VALD3306)	08-Jan-22	14:47	✓		□	
Flushing Zone D1		3307 Valdez Pl (D1-VALD3307)	08-Jan-22	12:00	✓		□	
Flushing Zone D1		3315 Teague Pl (D1-TEAG3315)	08-Jan-22	10:32	✓		□	
Flushing Zone D1		3318 Stommes Pl (D1-STOM3318)	08-Jan-22	09:23	✓		□	
Flushing Zone D1		3330 Benoit Pl (D1-BENO3330)	08-Jan-22	11:00	✓		□	
Flushing Zone D1		3332 Leal Pl (D1-LEAL3332)	08-Jan-22	10:30	✓		□	
Flushing Zone D1		3333 Leal Pl (D1-LEAL3333)	08-Jan-22	16:15	✓		□	
Flushing Zone D1		3335 Leal Pl (D1-LEAL3335)	08-Jan-22	09:00	✓		□	
Flushing Zone D1		3336 Powell Lp Apt C (D1-POWE3336)	08-Jan-22	15:53	✓		□	
Flushing Zone D1		3341 Smith CirA (D1-SMIT3341)	08-Jan-22	10:00	✓		□	
Flushing Zone D1		3342 Smith Circle (D1-SMIT3342)	08-Jan-22	09:15	✓		□	
Flushing Zone D1		Address (D1-CRUS3346)	08-Jan-22	10:41	✓		□	
Flushing Zone D1		Address (D1-HOOP3303F)	08-Jan-22	14:00	✓		□	
Flushing Zone D1		Address (D1-ORLA3322)	08-Jan-22	10:43	✓		□	
Flushing Zone D1		Address (D1-STOM3316)	08-Jan-22	12:49	✓		□	
Flushing Zone D1		3327 Benoit Place (D1-ABEN3327)	08-Jan-22	09:57	✓		□	
Flushing Zone D1		3328 Benoit Place (D1-ABEN3328)	08-Jan-22	10:53	✓		□	
Flushing Zone D1		3329 Benoit Place (D1-ABEN3329)	08-Jan-22	11:35	✓		□	
Flushing Zone D1		3330 Benoit Place (D1-ABEN3330)	08-Jan-22	11:00	✓		□	
Flushing Zone D1		3327 Benoit Place (D1-BBEN3327)	08-Jan-22	09:45	✓		□	
Flushing Zone D1		3328 Benoit Place (D1-BBEN3328)	08-Jan-22	13:12	✓		□	
Flushing Zone D1		3329 Benoit Place (D1-BBEN3329)	08-Jan-22	13:38	✓		□	
Flushing Zone D1		3330 Benoit Place (D1-BBEN3330)	08-Jan-22	08:00	✓		□	
Flushing Zone D1		3327 Benoit Place (D1-CBEN3327)	08-Jan-22	11:50	✓		□	
Flushing Zone D1		3330 Benoit Place (D1-CBEN3330)	08-Jan-22	10:00	✓		□	
Flushing Zone D1		3327 Benoit Place (D1-DBEN3327)	08-Jan-22	10:35	✓		□	
Flushing Zone D1		400 Bothne Court (D1-BOTH0400)	07-Jan-22	19:11	✓		□	
Flushing Zone D1		401 Bothne Court (D1-BOTH0401)	07-Jan-22	16:44	✓		□	
Flushing Zone D1		402 Bothne Court (D1-BOTH0402)	07-Jan-22	16:00	✓		□	
Flushing Zone D1		403 Bothne Court (D1-BOTH0403)	07-Jan-22	20:15	✓		□	
Flushing Zone D1		404 Bothne Court (D1-BOTH0404)	07-Jan-22	20:01	✓		□	
Flushing Zone D1		405 Bothne Court (D1-BOTH0405)	07-Jan-22	20:33	✓		□	
Flushing Zone D1		406 Bothne Court (D1-BOTH0406)	07-Jan-22	20:12	✓		□	
Flushing Zone D1		407 Bothne Court (D1-BOTH0407)	07-Jan-22	15:00	✓		□	
Flushing Zone D1		408 Bothne Court (D1-BOTH0408)	07-Jan-22	19:42	✓		□	
Flushing Zone D1		409 Bothne Court (D1-BOTH0409)	07-Jan-22	12:00	✓		□	
Flushing Zone D1		410 Bothne Court (D1-BOTH0410)	07-Jan-22	18:40	✓		□	
Flushing Zone D1		411 Bothne Court (D1-BOTH0411)	07-Jan-22	16:00	✓		□	
Flushing Zone D1		412 Bothne Court (D1-BOTH0412)	07-Jan-22	20:37	✓		□	
Flushing Zone D1		414 Bothne Court (D1-BOTH0414)	07-Jan-22	17:53	✓		□	
Flushing Zone D1		300 Christopher Court (D1-CHRI0300)	07-Jan-22	16:45	✓		□	
Flushing Zone D1		301 Christopher Court (D1-CHRI0301)	07-Jan-22	17:41	✓		□	
Flushing Zone D1		302 Christopher Court (D1-CHRI0302)	07-Jan-22	14:30	✓		□	
Flushing Zone D1		303 Christopher Court (D1-CHRI0303)	07-Jan-22	16:42	✓		□	
Flushing Zone D1		304 Christopher Court (D1-CHRI0304)	07-Jan-22	17:10	✓		□	
Flushing Zone D1		305 Christopher Court (D1-CHRI0305)	07-Jan-22	17:16	✓		□	
Flushing Zone D1		306 Christopher Court (D1-CHRI0306)	07-Jan-22	15:00	✓		□	
Flushing Zone D1		307 Christopher Court (D1-CHRI0307)	07-Jan-22	17:14	✓		□	
Flushing Zone D1		308 Christopher Court (D1-CHRI0308)	07-Jan-22	17:00	✓		□	

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Flushing Zone D1

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Flushing Zone D1	309 Christopher Court (D1-CHRI0309)	07-Jan-22	17:24	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	310 Christopher Court (D1-CHRI0310)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	311 Christopher Court (D1-CHRI0311)	07-Jan-22	17:59	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	312 Christopher Court (D1-CHRI0312)	07-Jan-22	02:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	313 Christopher Court (D1-CHRI0313)	07-Jan-22	15:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	314 Christopher Court (D1-CHRI0314)	07-Jan-22	14:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	315 Christopher Court (D1-CHRI0315)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	316 Christopher Court (D1-CHRI0316)	08-Jan-22	16:29	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	317 Christopher Court (D1-CHRI0317)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	318 Christopher Court (D1-CHRI0318)	07-Jan-22	15:44	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	319 Christopher Court (D1-CHRI0319)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	320 Christopher Court (D1-CHRI0320)	07-Jan-22	15:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	321 Christopher Court (D1-CHRI0321)	08-Jan-22	15:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	322 Christopher Court (D1-CHRI0322)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	323 Christopher Court (D1-CHRI0323)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	325 Christopher Court (D1-CHRI0325)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	327 Christopher Court (D1-CHRI0327)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3345 Cruse Place (D1-ACRU3345)	08-Jan-22	13:44	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3347 Cruse Place (D1-ACRU3347)	08-Jan-22	11:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3345 Cruse Place (D1-BCRU3345)	08-Jan-22	15:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3346 Cruse Place (D1-BCRU3346)	08-Jan-22	11:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3347 Cruse Place (D1-BCRU3347)	08-Jan-22	11:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3346 Cruse Place (D1-CCRU3346)	08-Jan-22	17:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3347 Cruse Place (D1-CCRU3347)	08-Jan-22	12:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3346 Cruse Place (D1-DCRU3346)	08-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3347 Cruse Place (D1-DCRU3347)	08-Jan-22	12:48	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3346 Cruse Place (D1-ECRU3346)	08-Jan-22	09:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3346 Cruse Place (D1-FCRU3346)	08-Jan-22	12:44	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	201 Dunlap Court (D1-DUNL0201)	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	203 Dunlap Court (D1-DUNL0203)	08-Jan-22	12:53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	205 Dunlap Court (D1-DUNL0205)	08-Jan-22	10:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	207 Dunlap Court (D1-DUNL0207)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	209 Dunlap Court (D1-DUNL0209)	08-Jan-22	10:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	211 Dunlap Court (D1-DUNL0211)	08-Jan-22	12:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	213 Dunlap Court (D1-DUNL0213)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	215 Dunlap Court (D1-DUNL0215)	08-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	217 Dunlap Court (D1-DUNL0217)	08-Jan-22	12:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	219 Dunlap Court (D1-DUNL0219)	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	221 Dunlap Court (D1-DUNL0221)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	223 Dunlap Court (D1-DUNL0223)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	225 Dunlap Court (D1-DUNL0225)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	227 Dunlap Court (D1-DUNL0227)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	229 Dunlap Court (D1-DUNL0229)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	231 Dunlap Court (D1-DUNL0231)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1000 East Outerbridge Court (D1-	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1001 East Outerbridge Court (D1-	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1002 East Outerbridge Court (D1-	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1003 East Outerbridge Court (D1-	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1004 East Outerbridge Court (D1-	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1005 East Outerbridge Court (D1-	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1006 East Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1007 East Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1008 East Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Flushing Zone D1	1009 East Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1010 East Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1011 East Outerbridge Court (D1-	08-Jan-22	21:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1012 East Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1014 East Outerbridge Court (D1-	08-Jan-22	12:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1016 East Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1018 East Outerbridge Court (D1-	08-Jan-22	08:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	700 East Teaff Court (D1-ETEA0700)	07-Jan-22	14:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	701 East Teaff Court (D1-ETEA0701)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	702 East Teaff Court (D1-ETEA0702)	07-Jan-22	16:12	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	703 East Teaff Court (D1-ETEA0703)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	704 East Teaff Court (D1-ETEA0704)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	705 East Teaff Court (D1-ETEA0705)	07-Jan-22	17:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	706 East Teaff Court (D1-ETEA0706)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	707 East Teaff Court (D1-ETEA0707)	07-Jan-22	15:42	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1800 Fisler Court (D1-FISL1800)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1801 Fisler Court (D1-FISL1801)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1802 Fisler Court (D1-FISL1802)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1803 Fisler Court (D1-FISL1803)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1804 Fisler Court (D1-FISL1804)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1805 Fisler Court (D1-FISL1805)	07-Jan-22	12:31	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1806 Fisler Court (D1-FISL1806)	07-Jan-22	13:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1807 Fisler Court (D1-FISL1807)	07-Jan-22	14:51	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1808 Fisler Court (D1-FISL1808)	07-Jan-22	15:42	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1809 Fisler Court (D1-FISL1809)	07-Jan-22	15:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1810 Fisler Court (D1-FISL1810)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1811 Fisler Court (D1-FISL1811)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1400 Gombasy Court (D1-GOMB1400)	07-Jan-22	18:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1401 Gombasy Court (D1-GOMB1401)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1402 Gombasy Court (D1-GOMB1402)	08-Jan-22	10:31	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1403 Gombasy Court (D1-GOMB1403)	07-Jan-22	18:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1404 Gombasy Court (D1-GOMB1404)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1405 Gombasy Court (D1-GOMB1405)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1406 Gombasy Court (D1-GOMB1406)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1407 Gombasy Court (D1-GOMB1407)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1408 Gombasy Court (D1-GOMB1408)	08-Jan-22	08:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1409 Gombasy Court (D1-GOMB1409)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1410 Gombasy Court (D1-GOMB1410)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1411 Gombasy Court (D1-GOMB1411)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	500 Graham Court (D1-GRAH0500)	07-Jan-22	12:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	501 Graham Court (D1-GRAH0501)	07-Jan-22	18:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	502 Graham Court (D1-GRAH0502)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	503 Graham Court (D1-GRAH0503)	07-Jan-22	14:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	504 Graham Court (D1-GRAH0504)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	505 Graham Court (D1-GRAH0505)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	506 Graham Court (D1-GRAH0506)	07-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	507 Graham Court (D1-GRAH0507)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	508 Graham Court (D1-GRAH0508)	07-Jan-22	17:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	509 Graham Court (D1-GRAH0509)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	510 Graham Court (D1-GRAH0510)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	511 Graham Court (D1-GRAH0511)	07-Jan-22	17:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	512 Graham Court (D1-GRAH0512)	07-Jan-22	12:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	513 Graham Court (D1-GRAH0513)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Flushing Zone D1	514 Graham Court (D1-GRAH0514)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	515 Graham Court (D1-GRAH0515)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	516 Graham Court (D1-GRAH0516)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	518 Graham Court (D1-GRAH0518)	07-Jan-22	01:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3325 Hancock Place (D1-AHAN3325)	08-Jan-22	10:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3326 Hancock Place (D1-AHAN3326)	08-Jan-22	15:32	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3325 Hancock Place (D1-BHAN3325)	08-Jan-22	11:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3326 Hancock Place (D1-BHAN3326)	08-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3325 Hancock Place (D1-CHAN3325)	08-Jan-22	11:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3326 Hancock Place (D1-CHAN3326)	08-Jan-22	08:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3325 Hancock Place (D1-DHAN3325)	08-Jan-22	11:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3326 Hancock Place (D1-DHAN3326)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3300 Hooper Place (D1-AHO03300)	08-Jan-22	11:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3301 Hooper Place (D1-AHO03301)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3302 Hooper Place (D1-AHO03302)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3303 Hooper Place (D1-AHO03303)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3304 Hooper Place (D1-AHO03304)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3300 Hooper Place (D1-BHO03300)	08-Jan-22	13:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3301 Hooper Place (D1-BHO03301)	08-Jan-22	17:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3302 Hooper Place (D1-BHO03302)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3303 Hooper Place (D1-BHO03303)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3300 Hooper Place (D1-DHO03300)	08-Jan-22	13:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3301 Hooper Place (D1-DHO03301)	08-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3302 Hooper Place (D1-DHO03302)	08-Jan-22	14:47	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3303 Hooper Place (D1-DHO03303)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3304 Hooper Place (D1-DHO03304)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3300 Hooper Place (D1-CHO03300)	08-Jan-22	12:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3301 Hooper Place (D1-CHO03301)	08-Jan-22	17:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3302 Hooper Place (D1-CHO03302)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3303 Hooper Place (D1-CHO03303)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3300 Hooper Place (D1-EHO03300)	08-Jan-22	15:46	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	900 Huttenberg Court (D1-HUTT0900)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	901 Huttenberg Court (D1-HUTT0901)	07-Jan-22	14:03	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	902 Huttenberg Court (D1-HUTT0902)	07-Jan-22	15:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	903 Huttenberg Court (D1-HUTT0903)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	904 Huttenberg Court (D1-HUTT0904)	07-Jan-22	14:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	905 Huttenberg Court (D1-HUTT0905)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	906 Huttenberg Court (D1-HUTT0906)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	907 Huttenberg Court (D1-HUTT0907)	07-Jan-22	16:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	908 Huttenberg Court (D1-HUTT0908)	07-Jan-22	15:13	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	909 Huttenberg Court (D1-HUTT0909)	07-Jan-22	16:14	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	910 Huttenberg Court (D1-HUTT0910)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	911 Huttenberg Court (D1-HUTT0911)	07-Jan-22	14:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	912 Huttenberg Court (D1-HUTT0912)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	913 Huttenberg Court (D1-HUTT0913)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	914 Huttenberg Court (D1-HUTT0914)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	915 Huttenberg Court (D1-HUTT0915)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	916 Huttenberg Court (D1-HUTT0916)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	917 Huttenberg Court (D1-HUTT0917)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	918 Huttenberg Court (D1-HUTT0918)	07-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	919 Huttenberg Court (D1-HUTT0919)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	920 Huttenberg Court (D1-HUTT0920)	07-Jan-22	13:11	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	921 Huttenberg Court (D1-HUTT0921)	07-Jan-22	16:13	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Flushing Zone D1	922 Huttenberg Court (D1-HUTT0922)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	923 Huttenberg Court (D1-HUTT0923)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	924 Huttenberg Court (D1-HUTT0924)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	925 Huttenberg Court (D1-HUTT0925)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	926 Huttenberg Court (D1-HUTT0926)	07-Jan-22	16:38	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	927 Huttenberg Court (D1-HUTT0927)	08-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	928 Huttenberg Court (D1-HUTT0928)	07-Jan-22	15:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	930 Huttenberg Court (D1-HUTT0930)	07-Jan-22	15:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1500 Kaufman Court (D1-KAUF1500)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1501 Kaufman Court (D1-KAUF1501)	07-Jan-22	13:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1502 Kaufman Court (D1-KAUF1502)	07-Jan-22	14:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1503 Kaufman Court (D1-KAUF1503)	08-Jan-22	15:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1504 Kaufman Court (D1-KAUF1504)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1505 Kaufman Court (D1-KAUF1505)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1506 Kaufman Court (D1-KAUF1506)	07-Jan-22	16:17	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1507 Kaufman Court (D1-KAUF1507)	07-Jan-22	18:03	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1508 Kaufman Court (D1-KAUF1508)	07-Jan-22	14:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1509 Kaufman Court (D1-KAUF1509)	07-Jan-22	16:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1510 Kaufman Court (D1-KAUF1510)	07-Jan-22	14:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1511 Kaufman Court (D1-KAUF1511)	07-Jan-22	16:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1512 Kaufman Court (D1-KAUF1512)	07-Jan-22	17:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1513 Kaufman Court (D1-KAUF1513)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1514 Kaufman Court (D1-KAUF1514)	07-Jan-22	18:39	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1515 Kaufman Court (D1-KAUF1515)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1516 Kaufman Court (D1-KAUF1516)	08-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1517 Kaufman Court (D1-KAUF1517)	07-Jan-22	03:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1518 Kaufman Court (D1-KAUF1518)	07-Jan-22	15:22	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1519 Kaufman Court (D1-KAUF1519)	07-Jan-22	16:33	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1520 Kaufman Court (D1-KAUF1520)	07-Jan-22	14:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1522 Kaufman Court (D1-KAUF1522)	07-Jan-22	16:02	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1900 Larson Court (D1-LARS1900)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1901 Larson Court (D1-LARS1901)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1902 Larson Court (D1-LARS1902)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1903 Larson Court (D1-LARS1903)	07-Jan-22	16:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1904 Larson Court (D1-LARS1904)	07-Jan-22	16:28	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1905 Larson Court (D1-LARS1905)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1906 Larson Court (D1-LARS1906)	07-Jan-22	18:12	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1907 Larson Court (D1-LARS1907)	07-Jan-22	19:09	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3331 Leal Place (D1-ALEA3331)	08-Jan-22	13:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3332 Leal Place (D1-ALEA3332)	08-Jan-22	10:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3333 Leal Place (D1-ALEA3333)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3334 Leal Place (D1-ALEA3334)	08-Jan-22	11:53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3335 Leal Place (D1-ALEA3335)	08-Jan-22	08:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3331 Leal Place (D1-BLEA3331)	08-Jan-22	13:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3334 Leal Place (D1-BLEA3334)	08-Jan-22	08:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3331 Leal Place (D1-CLEA3331)	08-Jan-22	13:57	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3334 Leal Place (D1-CLEA3334)	08-Jan-22	08:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3335 Leal Place (D1-CLEA3335)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3331 Leal Place (D1-DLEA3331)	08-Jan-22	08:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3334 Leal Place (D1-DLEA3334)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3335 Leal Place (D1-DLEA3335)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3310 Mack Place (D1-AMAC3310)	08-Jan-22	10:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3311 Mack Place (D1-AMAC3311)	08-Jan-22	08:47	<input checked="" type="checkbox"/>	<input type="checkbox"/>



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Flushing Zone D1	3312 Mack Place (D1-AMAC3312)	08-Jan-22	14:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3310 Mack Place (D1-BMAC3310)	08-Jan-22	10:28	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3312 Mack Place (D1-BMAC3312)	08-Jan-22	15:21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reason(s) Selected: Maintenance Issues
Flushing Zone D1	3310 Mack Place (D1-CMAC3310)	08-Jan-22	08:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3311 Mack Place (D1-CMAC3311)	08-Jan-22	12:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3312 Mack Place (D1-CMAC3312)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3310 Mack Place (D1-DMAC3310)	08-Jan-22	22:08	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3311 Mack Place (D1-DMAC3311)	08-Jan-22	11:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3312 Mack Place (D1-DMAC3312)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3312 Mack Place (D1-EMAC3312)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3312 Mack Place (D1-FMAC3312)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3311 Mack Place (D1-MAC3311)	08-Jan-22	10:39	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3320 McKeen Place (D1-AMCK3320)	08-Jan-22	08:15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3321 McKeen Place (D1-AMCK3321)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3320 McKeen Place (D1-BMCK3320)	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3321 McKeen Place (D1-BMCK3321)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3320 McKeen Place (D1-CMCK3320)	08-Jan-22	08:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3321 McKeen Place (D1-CMCK3321)	08-Jan-22	08:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3321 McKeen Place (D1-DMCK3321)	08-Jan-22	11:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1300 Mcmurry Court (D1-MCMU1300)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1301 Mcmurry Court (D1-MCMU1301)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1302 Mcmurry Court (D1-MCMU1302)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1303 Mcmurry Court (D1-MCMU1303)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1304 Mcmurry Court (D1-MCMU1304)	07-Jan-22	15:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1305 Mcmurry Court (D1-MCMU1305)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1306 Mcmurry Court (D1-MCMU1306)	07-Jan-22	15:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1307 Mcmurry Court (D1-MCMU1307)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1308 Mcmurry Court (D1-MCMU1308)	07-Jan-22	18:22	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1309 Mcmurry Court (D1-MCMU1309)	07-Jan-22	18:22	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1310 Mcmurry Court (D1-MCMU1310)	07-Jan-22	17:23	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1311 Mcmurry Court (D1-MCMU1311)	07-Jan-22	14:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1312 Mcmurry Court (D1-MCMU1312)	07-Jan-22	16:53	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1313 Mcmurry Court (D1-MCMU1313)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1314 Mcmurry Court (D1-MCMU1314)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1315 Mcmurry Court (D1-MCMU1315)	07-Jan-22	14:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1316 Mcmurry Court (D1-MCMU1316)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1317 Mcmurry Court (D1-MCMU1317)	07-Jan-22	14:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1318 Mcmurry Court (D1-MCMU1318)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1319 Mcmurry Court (D1-MCMU1319)	07-Jan-22	16:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1320 Mcmurry Court (D1-MCMU1320)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1321 Mcmurry Court (D1-MCMU1321)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1322 Mcmurry Court (D1-MCMU1322)	07-Jan-22	14:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1323 Mcmurry Court (D1-MCMU1323)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1325 Mcmurry Court (D1-MCMU1325)	07-Jan-22	13:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1327 Mcmurry Court (D1-MCMU1327)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1200 Mead Place (D1-MEAD1200)	07-Jan-22	18:03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1201 Mead Place (D1-MEAD1201)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1202 Mead Place (D1-MEAD1202)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1203 Mead Place (D1-MEAD1203)	07-Jan-22	16:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1204 Mead Place (D1-MEAD1204)	07-Jan-22	18:02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	1206 Mead Place (D1-MEAD1206)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3322 Orlando Place (D1-AORL3322)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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Flushing Zone D1	3323 Orlando Place (D1-AORL3323)	08-Jan-22	14:14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3324 Orlando Place (D1-AORL3324)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3322 Orlando Place (D1-BORL3322)	08-Jan-22	13:53	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3323 Orlando Place (D1-BORL3323)	08-Jan-22	14:47	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3324 Orlando Place (D1-BORL3324)	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3323 Orlando Place (D1-CORL3323)	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3324 Orlando Place (D1-CORL3324)	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3322 Orlando Place (D1-DORL3322)	08-Jan-22	12:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3323 Orlando Place (D1-DORL3323)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reason(s) Selected: Maintenance Issues
Flushing Zone D1	3324 Orlando Place (D1-DORL3324)	08-Jan-22	16:19	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3323 Orlando Place (D1-EORL3323)	08-Jan-22	15:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3323 Orlando Place (D1-FORL3323)	08-Jan-22	21:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3336 Powell Loop (D1-APOW3336)	08-Jan-22	16:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3337 Powell Loop (D1-APOW3337)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3338 Powell Loop (D1-APOW3338)	08-Jan-22	12:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3337 Powell Loop (D1-BPOW3337)	08-Jan-22	13:16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3338 Powell Loop (D1-BPOW3338)	08-Jan-22	23:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3336 Powell Loop (D1-CPOW3336)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3337 Powell Loop (D1-CPOW3337)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3338 Powell Loop (D1-CPOW3338)	08-Jan-22	13:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3336 Powell Loop (D1-DPOW3336)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3337 Powell Loop (D1-DPOW3337)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3338 Powell Loop (D1-DPOW3338)	08-Jan-22	22:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3337 Powell Loop (D1-FPOW3337)	08-Jan-22	15:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	3337 Powell Loop (D1-FPOW3337)	08-Jan-22	14:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	100 Singleton Court (D1-SING0100)	08-Jan-22	08:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	101 Singleton Court (D1-SING0101)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	102 Singleton Court (D1-SING0102)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	103 Singleton Court (D1-SING0103)	08-Jan-22	10:31	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	104 Singleton Court (D1-SING0104)	08-Jan-22	11:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	105 Singleton Court (D1-SING0105)	08-Jan-22	08:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	106 Singleton Court (D1-SING0106)	08-Jan-22	10:27	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	107 Singleton Court (D1-SING0107)	08-Jan-22	12:07	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	108 Singleton Court (D1-SING0108)	08-Jan-22	14:04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	109 Singleton Court (D1-SING0109)	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	110 Singleton Court (D1-SING0110)	08-Jan-22	20:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	111 Singleton Court (D1-SING0111)	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	112 Singleton Court (D1-SING0112)	08-Jan-22	13:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	113 Singleton Court (D1-SING0113)	08-Jan-22	11:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	114 Singleton Court (D1-SING0114)	08-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	115 Singleton Court (D1-SING0115)	08-Jan-22	21:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	116 Singleton Court (D1-SING0116)	08-Jan-22	14:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	117 Singleton Court (D1-SING0117)	08-Jan-22	12:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	118 Singleton Court (D1-SING0118)	08-Jan-22	15:59	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	119 Singleton Court (D1-SING0119)	08-Jan-22	11:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	120 Singleton Court (D1-SING0120)	08-Jan-22	15:36	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	121 Singleton Court (D1-SING0121)	08-Jan-22	15:13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	122 Singleton Court (D1-SING0122)	08-Jan-22	15:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	123 Singleton Court (D1-SING0123)	08-Jan-22	15:14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	124 Singleton Court (D1-SING0124)	08-Jan-22	15:39	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	125 Singleton Court (D1-SING0125)	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	126 Singleton Court (D1-SING0126)	08-Jan-22	15:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1	127 Singleton Court (D1-SING0127)	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Flushing Zone D1	129 Singleton Court (D1-SING0129)	08-Jan-22	15:39	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	131 Singleton Court (D1-SING0131)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3339 Smith Circle (D1-ASMI3339)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3340 Smith Circle (D1-ASMI3340)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3341 Smith Circle (D1-ASMI3341)	08-Jan-22	14:22	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3342 Smith Circle (D1-ASMI3342)	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3343 Smith Circle (D1-ASMI3343)	08-Jan-22	08:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3344 Smith Circle (D1-ASMI3344)	08-Jan-22	10:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3339 Smith Circle (D1-BSMI3339)	08-Jan-22	14:14	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3340 Smith Circle (D1-BSMI3340)	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3341 Smith Circle (D1-BSMI3341)	08-Jan-22	14:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3342 Smith Circle (D1-BSMI3342)	08-Jan-22	13:42	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3343 Smith Circle (D1-BSMI3343)	08-Jan-22	08:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3344 Smith Circle (D1-BSMI3344)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3339 Smith Circle (D1-CSMI3339)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3341 Smith Circle (D1-CSMI3341)	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3342 Smith Circle (D1-CSMI3342)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3343 Smith Circle (D1-CSMI3343)	08-Jan-22	11:32	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3339 Smith Circle (D1-DSMI3339)	08-Jan-22	10:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3342 Smith Circle (D1-DSMI3342)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3343 Smith Circle (D1-DSMI3343)	08-Jan-22	10:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3342 Smith Circle (D1-FSMI3342)	08-Jan-22	13:46	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3317 Stommes Place (D1-ASTO3317)	08-Jan-22	11:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3319 Stommes Place (D1-ASTO3319)	08-Jan-22	08:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3316 Stommes Place (D1-BSTO3316)	08-Jan-22	12:49	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3317 Stommes Place (D1-BSTO3317)	08-Jan-22	11:25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3318 Stommes Place (D1-BSTO3318)	08-Jan-22	08:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3319 Stommes Place (D1-BSTO3319)	08-Jan-22	08:47	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3316 Stommes Place (D1-CSTO3316)	08-Jan-22	11:18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3317 Stommes Place (D1-CSTO3317)	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3319 Stommes Place (D1-CSTO3319)	08-Jan-22	09:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3316 Stommes Place (D1-DSTO3316)	08-Jan-22	10:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3317 Stommes Place (D1-DSTO3317)	08-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3319 Stommes Place (D1-DSTO3319)	08-Jan-22	08:48	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1600 Taussig Court (D1-TAUS1600)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1601 Taussig Court (D1-TAUS1601)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1602 Taussig Court (D1-TAUS1602)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1603 Taussig Court (D1-TAUS1603)	08-Jan-22	17:23	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1604 Taussig Court (D1-TAUS1604)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1605 Taussig Court (D1-TAUS1605)	07-Jan-22	14:58	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1606 Taussig Court (D1-TAUS1606)	07-Jan-22	14:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1607 Taussig Court (D1-TAUS1607)	07-Jan-22	14:52	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1608 Taussig Court (D1-TAUS1608)	07-Jan-22	14:52	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1610 Taussig Court (D1-TAUS1610)	07-Jan-22	14:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3313 Teague Place (D1-ATEA3313)	08-Jan-22	10:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3314 Teague Place (D1-ATEA3314)	08-Jan-22	10:34	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3313 Teague Place (D1-BTEA3313)	08-Jan-22	10:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3314 Teague Place (D1-BTEA3314)	08-Jan-22	10:35	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3315 Teague Place (D1-BTEA3315)	08-Jan-22	11:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3313 Teague Place (D1-CTEA3313)	08-Jan-22	11:04	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3314 Teague Place (D1-CTEA3314)	08-Jan-22	09:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3315 Teague Place (D1-CTEA3315)	08-Jan-22	08:54	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3313 Teague Place (D1-DTEA3313)	08-Jan-22	10:53	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Encl: (1) EDMS Residential Flushing Records Zone D1

Flushing Zone D1

2022-01-07 - 2022-01-08

Flushing Zone D1	3314 Teague Place (D1-DTEA3314)	08-Jan-22	08:19	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3315 Teague Place (D1-DTEA3315)	08-Jan-22	08:51	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	600 Thatcher Court (D1-THAT0600)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	601 Thatcher Court (D1-THAT0601)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	602 Thatcher Court (D1-THAT0602)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	603 Thatcher Court (D1-THAT0603)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	604 Thatcher Court (D1-THAT0604)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	606 Thatcher Court (D1-THAT0606)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	608 Thatcher Court (D1-THAT0608)	07-Jan-22	17:04	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	610 Thatcher Court (D1-THAT0610)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	611 Thatcher Court (D1-THAT0611)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	612 Thatcher Court (D1-THAT0612)	07-Jan-22	17:06	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	613 Thatcher Court (D1-THAT0613)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	614 Thatcher Court (D1-THAT0614)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3305 Valdez Place (D1-AVAL3305)	08-Jan-22	12:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3308 Valdez Place (D1-AVAL3308)	08-Jan-22	13:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3309 Valdez Place (D1-AVAL3309)	08-Jan-22	14:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3305 Valdez Place (D1-BVAL3305)	08-Jan-22	12:55	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3306 Valdez Place (D1-BVAL3306)	08-Jan-22	14:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3307 Valdez Place (D1-BVAL3307)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3308 Valdez Place (D1-BVAL3308)	08-Jan-22	14:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3309 Valdez Place (D1-BVAL3309)	08-Jan-22	14:05	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3305 Valdez Place (D1-CVAL3305)	08-Jan-22	13:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3306 Valdez Place (D1-CVAL3306)	08-Jan-22	12:41	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3307 Valdez Place (D1-CVAL3307)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3308 Valdez Place (D1-CVAL3308)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3309 Valdez Place (D1-CVAL3309)	08-Jan-22	15:57	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3305 Valdez Place (D1-DVAL3305)	08-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3306 Valdez Place (D1-DVAL3306)	08-Jan-22	13:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3307 Valdez Place (D1-DVAL3307)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3308 Valdez Place (D1-DVAL3308)	08-Jan-22	13:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3309 Valdez Place (D1-DVAL3309)	08-Jan-22	15:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3306 Valdez Place (D1-EVAL3306)	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3308 Valdez Place (D1-EVAL3308)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3306 Valdez Place (D1-FVAL3306)	08-Jan-22	13:07	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	3308 Valdez Place (D1-FVAL3308)	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1700 Wagoner Court (D1-WAGO1700)	07-Jan-22	14:21	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1701 Wagoner Court (D1-WAGO1701)	07-Jan-22	16:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1702 Wagoner Court (D1-WAGO1702)	07-Jan-22	14:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1703 Wagoner Court (D1-WAGO1703)	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1704 Wagoner Court (D1-WAGO1704)	07-Jan-22	17:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1705 Wagoner Court (D1-WAGO1705)	07-Jan-22	14:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1706 Wagoner Court (D1-WAGO1706)	07-Jan-22	15:03	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1707 Wagoner Court (D1-WAGO1707)	07-Jan-22	15:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1708 Wagoner Court (D1-WAGO1708)	07-Jan-22	16:33	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1709 Wagoner Court (D1-WAGO1709)	07-Jan-22	17:10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1710 Wagoner Court (D1-WAGO1710)	07-Jan-22	15:46	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1711 Wagoner Court (D1-WAGO1711)	07-Jan-22	18:01	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1712 Wagoner Court (D1-WAGO1712)	07-Jan-22	14:39	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1713 Wagoner Court (D1-WAGO1713)	07-Jan-22	18:57	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1714 Wagoner Court (D1-WAGO1714)	07-Jan-22	16:43	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1715 Wagoner Court (D1-WAGO1715)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1716 Wagoner Court (D1-WAGO1716)	07-Jan-22	15:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Encl: (1) EDMS Residential Flushing Records Zone D1

Flushing Zone D1  
2022-01-07 - 2022-01-08

Flushing Zone D1	1717 Wagoner Court (D1-WAGO1717)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1718 Wagoner Court (D1-WAGO1718)	07-Jan-22	14:45	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1719 Wagoner Court (D1-WAGO1719)	07-Jan-22	14:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1100 West Outerbridge Court (D1-	08-Jan-22	10:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1101 West Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1102 West Outerbridge Court (D1-	08-Jan-22	11:20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1103 West Outerbridge Court (D1-	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1104 West Outerbridge Court (D1-	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1105 West Outerbridge Court (D1-	08-Jan-22	10:38	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1106 West Outerbridge Court (D1-	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1107 West Outerbridge Court (D1-	08-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1108 West Outerbridge Court (D1-	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1109 West Outerbridge Court (D1-	08-Jan-22	12:32	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1110 West Outerbridge Court (D1-	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1111 West Outerbridge Court (D1-	08-Jan-22	12:40	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1113 West Outerbridge Court (D1-	08-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	1115 West Outerbridge Court (D1-	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	800 West Teaff Court (D1-WTEA0800)	07-Jan-22	00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	801 West Teaff Court (D1-WTEA0801)	07-Jan-22	03:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	802 West Teaff Court (D1-WTEA0802)	07-Jan-22	01:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	803 West Teaff Court (D1-WTEA0803)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	804 West Teaff Court (D1-WTEA0804)	07-Jan-22	16:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	805 West Teaff Court (D1-WTEA0805)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	806 West Teaff Court (D1-WTEA0806)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	807 West Teaff Court (D1-WTEA0807)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	808 West Teaff Court (D1-WTEA0808)	07-Jan-22	16:56	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	809 West Teaff Court (D1-WTEA0809)	07-Jan-22	15:37	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	810 West Teaff Court (D1-WTEA0810)	07-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	811 West Teaff Court (D1-WTEA0811)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	812 West Teaff Court (D1-WTEA0812)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	813 West Teaff Court (D1-WTEA0813)	07-Jan-22	12:30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	814 West Teaff Court (D1-WTEA0814)	07-Jan-22	13:50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	815 West Teaff Court (D1-WTEA0815)	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	817 West Teaff Court (D1-WTEA0817)	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	819 West Teaff Court (D1-WTEA0819)	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Key

Not Started

No Access

In Progress

Complete

Encl: (2) EDMS Non-Residential Flushing Records Zone D1

Flushing Zone D1

2022-01-07 - 2022-01-18

Total Facilities	Total Facilities Flushed	Percent Complete	No Access	Flushed on Selected Dates
74	74	100.0 %	0	74

Zone	Neighborhood	Address	Arrive Date	Start Time	Certified	Unable To Access	Access Reason
Flushing Zone D1		Building 1009,RESTROOM WARD FIELD,	13-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 106,BLOCH ARENA YOUTH	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1208,NIMITZ GATE BATHROOM	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1314,CLUB PEARL, 915 N Rd (D1-	10-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1333,ENLISTED MEN'S BARRACKS	13-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1337,MWR READY STORAGE (D1-	11-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1338,FITNESS CENTER, 1338	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1369,ENLISTED MENS BARRACKS,	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1370,ENLISTED MENS BARRACKS	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1396,SEWAGE PMP BLDG STA 4	11-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 148,PHNSY AND CNRH STORAGE	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1488,BEQ OFFICE 1400	08-Jan-22	06:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1489,BEQ, 1278 Battleship Dr (D1-	09-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1490,WAVES BARRACKS (D1-	09-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1491,ENLISTED MENS BARRACKS	09-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1492,ENLISTED MENS BARRACKS	10-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1493,ENLISTED MENS BARRACKS	09-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1505,GARAGE DETACHED (D1-	13-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1507,NGIS - NAVY TDY (D1-	07-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1508,CPO OFFICE/UTILITY RM (D1	07-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1509,HAROLD B. ESTES	13-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1540,EMER GEN BLDG, S155 HALE	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1557,ISLAND STEAKS (D1-	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1605,MWR STORAGE SHED	08-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1606,MWR STORAGE SHED	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1607,BQ MAINTENANCE	13-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 161,FIELD HSE/BLOCH ARENA (D1	07-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1623,BEQ ARIZONA HALL (D1-	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1631,COMNAVSURFGRU,	09-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1634,NGIS - NAVY TDY (UTAH	08-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		HALL (D1-BLDG1634)					
Flushing Zone D1		Building 1637,SUBSTA BLDG H28 8000 KV	11-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1638,SUBSTA BLDG H29 8000 KV	10-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1639,SUBSTA BLDG H30 4000 KV	10-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Flushing Zone D1		Building 1644,BEQ OFFICE (D1-BLDG1644)	07-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



Flushing Zone D1

2022-01-07 - 2022-01-18

Flushing Zone D1	Building 1672,CHANGE ROOM -	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1673A,PAINT BLASTING SHOP	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1680,GYMNASTICS/YOUTH	12-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1681,AEROBICS FACILITY (D1-	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1692,GATE HOUSE - NIMITZ (D1-	12-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1693,GATE HOUSE - NIMITZ (D1-	18-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1722,TROOP HOUSING STORAGE	12-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1725,CORROSION CNTRL BLDG-	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1741,SAND BLASTING/PAINTING	13-Jan-22	15:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1743,BLAST MEDIA STORAGE (D1-	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1744,SERVICES BRANCH BLDG-	13-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1745,ANTENNA STRG - SIMA (D1-	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1914,GUARD SHACK BRAVO	12-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1931,GUARD SHACK MIKE 4 (D1-	08-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 1932,RECREATION CTR BX 1333,	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 199,OCHR PACIFIC SITE OFFICE	14-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 204,MWR CHILD CARE CENTER	07-Jan-22	12:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 229,HAZARDOUS AND	11-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 3455,JBPHH PASS & ID OFFICE	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 499,NAVFAC PACIFIC AM OFFICE,	08-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 88,OPS STORAGE (D1-BLDG0088)	14-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 89,ARMED SERVICES YMCA (D1-	15-Jan-22	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 900,BQ OKLAHOMA HALL (D1-	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 901,OKLAHOMA BQ UTILITY	12-Jan-22	08:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 925,BQ NEVADA HALL (D1-	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 926,UTILITY BLDG BQ NEVADA	08-Jan-22	14:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 930,CHILD DEVELOPMENT	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 931,CDC INFANT SHADE	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 932,CDC PRE TODDLER SHADE	07-Jan-22	07:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 933,CDC TODDLER SHADE	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 934,CDC PRESCHOOLER SHADE	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 935,CDC OUTDOOR ACTIVITY	07-Jan-22	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building 936,CDC GATE/SENTRY HOUSE	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building D1-22,PEARL HARBOR KAI	07-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building S1008,SUBSTA H-11	11-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building S155,SEWAGE PUMP/HALE	11-Jan-22	11:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building S1651,ENCLOSED RECREATION	09-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building S198,SUBSTATION BLDG H-	11-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flushing Zone D1	Building S289,CABLE HUT N-8/HALE	11-Jan-22	10:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Flushing Zone D1

2022-01-07 - 2022-01-18

Flushing Zone D1	Building S-31,PUMPHOUSE DFM FUEL (D1 - 13-Jan-22	13:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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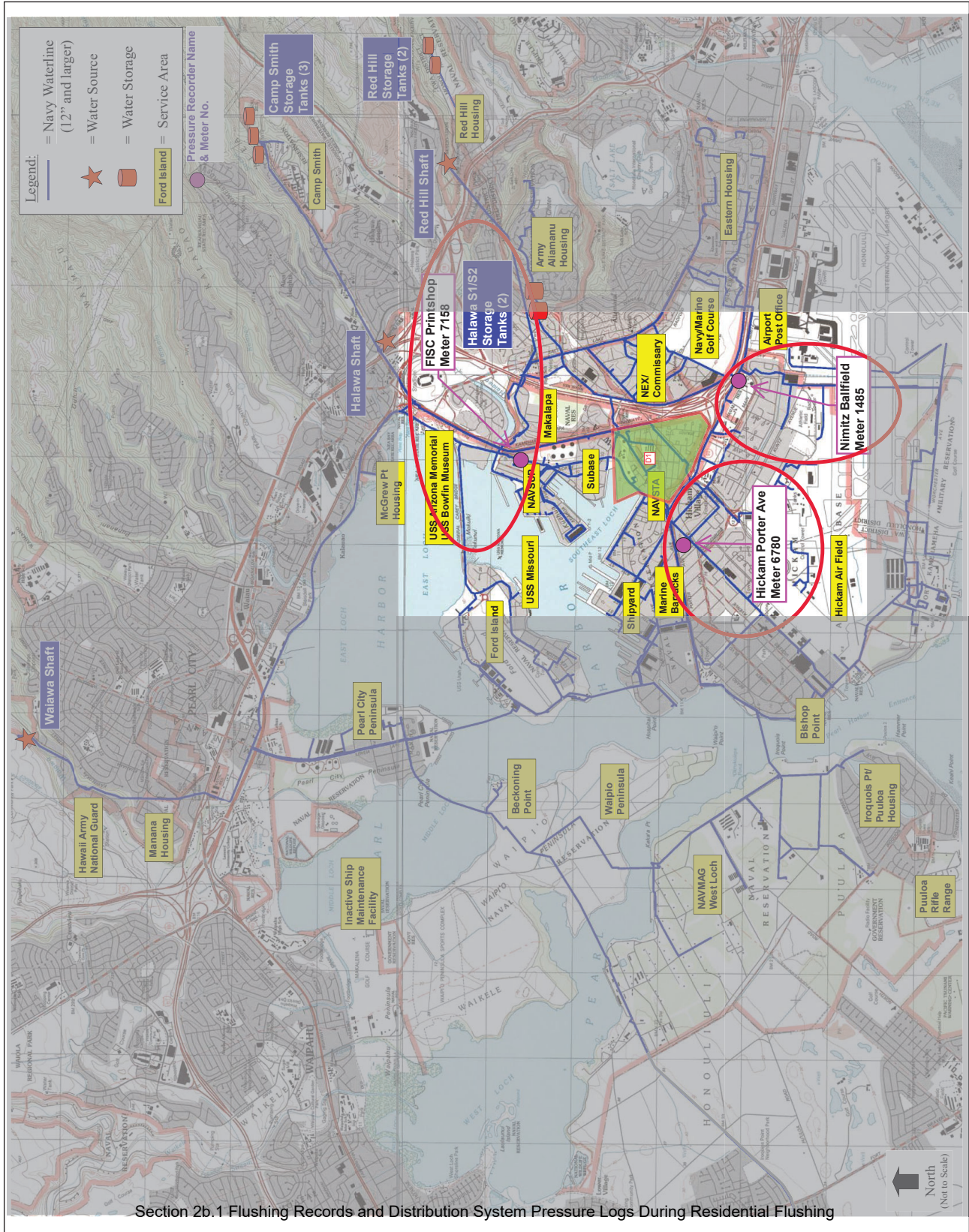
Key

Not Started

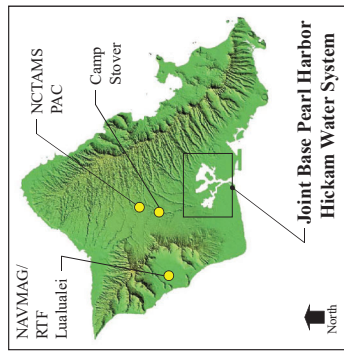
No Access

In Progress

Complete



Section 2b.1 Flushing Records and Distribution System Pressure Logs During Residential Flushing



# NAVFAC HAWAII Joint Base Pearl Harbor – Hickam Water System

NAVFAC Hawaii owns and operates a total of 4 potable water systems on the island of Oahu. These systems include Joint Base Pearl Harbor – Hickam (JBPHH), NAVMAG & RTF Lualualei, NCTAMS PAC, and Camp Stover.

The largest of these systems is JBPHH, which includes 3 water sources located at Waiawa, Halawa, and Red Hill. The transmission/ distribution system needed to convey water throughout the complex consists of approximately 250 miles of pipelines ranging in size from 4 inches to 42 inches in diameter.

Water is stored in two 6 million gallon (MG) reservoirs located at Halawa. Smaller storage tanks are also located at Red Hill and Camp Smith.

On a daily basis, these three sources provide approximately 12 to 22 MG of potable water to customers throughout JBPHH, which includes over 60,000 personnel (military and civilian), and numerous industrial users. (rev 2018 11 29)





# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

Date	Time	Date/Time	D1 Pressure Readings (psi)		
			7158	6780	1485
28-Dec-21	0:00:00	28-Dec-2100:00	71.0	61.7	62.0
28-Dec-21	0:30:00	28-Dec-2100:00	71.1	62.0	62.0
28-Dec-21	1:00:00	28-Dec-2101:00	71.2	62.0	62.0
28-Dec-21	1:30:00	28-Dec-2101:00	71.0	62.0	62.0
28-Dec-21	2:00:00	28-Dec-2102:00	71.3	62.0	62.3
28-Dec-21	2:30:00	28-Dec-2102:00	71.3	62.0	62.7
28-Dec-21	3:00:00	28-Dec-2103:00	71.8	62.6	63.0
28-Dec-21	3:30:00	28-Dec-2103:00	72.0	62.8	63.0
28-Dec-21	4:00:00	28-Dec-2104:00	72.0	62.9	63.0
28-Dec-21	4:30:00	28-Dec-2104:00	72.0	63.0	63.0
28-Dec-21	5:00:00	28-Dec-2105:00	71.7	63.0	63.0
28-Dec-21	5:30:00	28-Dec-2105:00	72.0	63.0	63.0
28-Dec-21	6:00:00	28-Dec-2106:00	72.0	63.0	63.0
28-Dec-21	6:30:00	28-Dec-2106:00	72.0	63.0	63.0
28-Dec-21	7:00:00	28-Dec-2107:00	72.0	63.0	63.0
28-Dec-21	7:30:00	28-Dec-2107:00	72.0	62.4	63.0
28-Dec-21	8:00:00	28-Dec-2108:00	71.4	63.0	62.7
28-Dec-21	8:30:00	28-Dec-2108:00	71.7	62.7	63.0
28-Dec-21	9:00:00	28-Dec-2109:00	72.0	63.0	63.0
28-Dec-21	9:30:00	28-Dec-2109:00	72.0	63.0	63.3
28-Dec-21	10:00:00	28-Dec-2110:00	72.4	64.0	64.0
28-Dec-21	10:30:00	28-Dec-2110:00	72.7	63.7	64.0
28-Dec-21	11:00:00	28-Dec-2111:00	72.1	63.4	63.7
28-Dec-21	11:30:00	28-Dec-2111:00	73.0	64.0	64.0
28-Dec-21	12:00:00	28-Dec-2112:00	73.0	64.0	64.0
28-Dec-21	12:30:00	28-Dec-2112:00	73.0	64.7	64.3
28-Dec-21	13:00:00	28-Dec-2113:00	73.0	65.0	64.8
28-Dec-21	13:30:00	28-Dec-2113:00	73.6	65.0	65.0
28-Dec-21	14:00:00	28-Dec-2114:00	74.0	65.0	65.0
28-Dec-21	14:30:00	28-Dec-2114:00	74.0	65.0	65.0
28-Dec-21	15:00:00	28-Dec-2115:00	74.0	65.0	65.0
28-Dec-21	15:30:00	28-Dec-2115:00	73.4	63.8	64.0
28-Dec-21	16:00:00	28-Dec-2116:00	70.0	62.3	62.1
28-Dec-21	16:30:00	28-Dec-2116:00	70.0	62.0	62.0
28-Dec-21	17:00:00	28-Dec-2117:00	69.5	61.7	61.7
28-Dec-21	17:30:00	28-Dec-2117:00	69.0	61.0	61.0
28-Dec-21	18:00:00	28-Dec-2118:00	69.0	61.0	61.0
28-Dec-21	18:30:00	28-Dec-2118:00	68.4	60.6	60.7
28-Dec-21	19:00:00	28-Dec-2119:00	68.3	60.0	60.0
28-Dec-21	19:30:00	28-Dec-2119:00	67.4	59.4	59.7
28-Dec-21	20:00:00	28-Dec-2120:00	67.0	59.0	59.0
28-Dec-21	20:30:00	28-Dec-2120:00	68.8	58.4	59.0
28-Dec-21	21:00:00	28-Dec-2121:00	70.4	61.3	61.6
28-Dec-21	21:30:00	28-Dec-2121:00	70.5	61.5	62.0
28-Dec-21	22:00:00	28-Dec-2122:00	71.0	61.3	62.0
28-Dec-21	22:30:00	28-Dec-2122:00	70.3	61.5	62.0
28-Dec-21	23:00:00	28-Dec-2123:00	70.8	61.1	62.0
28-Dec-21	23:30:00	28-Dec-2123:00	71.0	62.0	62.0
29-Dec-21	0:00:00	29-Dec-2100:00	71.0	61.7	62.0
29-Dec-21	0:30:00	29-Dec-2100:00	71.0	62.0	62.0
29-Dec-21	1:00:00	29-Dec-2101:00	71.0	62.0	62.0
29-Dec-21	1:30:00	29-Dec-2101:00	71.0	62.0	62.0
29-Dec-21	2:00:00	29-Dec-2102:00	71.7	62.4	63.0
29-Dec-21	2:30:00	29-Dec-2102:00	72.0	63.0	63.0
29-Dec-21	3:00:00	29-Dec-2103:00	72.0	63.0	63.0

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

29-Dec-21	3:30:00	29-Dec-2103:00	72.0	63.0	63.0
29-Dec-21	4:00:00	29-Dec-2104:00	72.0	63.0	63.0
29-Dec-21	4:30:00	29-Dec-2104:00	72.0	63.3	63.0
29-Dec-21	5:00:00	29-Dec-2105:00	71.4	62.7	62.7
29-Dec-21	5:30:00	29-Dec-2105:00	71.0	62.0	62.0
29-Dec-21	6:00:00	29-Dec-2106:00	71.0	62.0	62.0
29-Dec-21	6:30:00	29-Dec-2106:00	71.3	62.0	62.0
29-Dec-21	7:00:00	29-Dec-2107:00	71.0	62.0	61.7
29-Dec-21	7:30:00	29-Dec-2107:00	70.7	61.7	61.6
29-Dec-21	8:00:00	29-Dec-2108:00	70.8	61.8	61.8
29-Dec-21	8:30:00	29-Dec-2108:00	71.0	61.9	62.0
29-Dec-21	9:00:00	29-Dec-2109:00	71.0	62.0	62.0
29-Dec-21	9:30:00	29-Dec-2109:00	71.0	62.0	61.7
29-Dec-21	10:00:00	29-Dec-2110:00	71.0	62.0	62.0
29-Dec-21	10:30:00	29-Dec-2110:00	71.0	62.0	62.0
29-Dec-21	11:00:00	29-Dec-2111:00	71.0	61.7	61.7
29-Dec-21	11:30:00	29-Dec-2111:00	71.0	62.0	62.0
29-Dec-21	12:00:00	29-Dec-2112:00	71.0	62.0	62.0
29-Dec-21	12:30:00	29-Dec-2112:00	71.0	62.0	62.0
29-Dec-21	13:00:00	29-Dec-2113:00	71.7	62.8	62.7
29-Dec-21	13:30:00	29-Dec-2113:00	72.0	63.0	63.0
29-Dec-21	14:00:00	29-Dec-2114:00	72.0	63.0	63.0
29-Dec-21	14:30:00	29-Dec-2114:00	72.0	63.9	63.9
29-Dec-21	15:00:00	29-Dec-2115:00	72.6	64.0	64.0
29-Dec-21	15:30:00	29-Dec-2115:00	72.5	64.0	64.0
29-Dec-21	16:00:00	29-Dec-2116:00	73.0	64.0	64.0
29-Dec-21	16:30:00	29-Dec-2116:00	73.0	64.0	64.0
29-Dec-21	17:00:00	29-Dec-2117:00	73.0	64.0	64.0
29-Dec-21	17:30:00	29-Dec-2117:00	73.0	64.0	64.0
29-Dec-21	18:00:00	29-Dec-2118:00	73.0	64.3	64.0
29-Dec-21	18:30:00	29-Dec-2118:00	73.0	64.0	64.0
29-Dec-21	19:00:00	29-Dec-2119:00	73.0	64.0	64.0
29-Dec-21	19:30:00	29-Dec-2119:00	73.0	64.0	64.0
29-Dec-21	20:00:00	29-Dec-2120:00	73.0	64.0	64.0
29-Dec-21	20:30:00	29-Dec-2120:00	73.0	64.0	64.1
29-Dec-21	21:00:00	29-Dec-2121:00	73.0	64.3	64.7
29-Dec-21	21:30:00	29-Dec-2121:00	73.1	65.0	64.7
29-Dec-21	22:00:00	29-Dec-2122:00	73.7	65.0	65.0
29-Dec-21	22:30:00	29-Dec-2122:00	73.9	64.7	65.0
29-Dec-21	23:00:00	29-Dec-2123:00	70.0	62.0	62.9
29-Dec-21	23:30:00	29-Dec-2123:00	70.0	62.0	62.0
30-Dec-21	0:00:00	30-Dec-2100:00	69.7	62.0	62.0
30-Dec-21	0:30:00	30-Dec-2100:00	70.0	62.0	62.0
30-Dec-21	1:00:00	30-Dec-2101:00	69.0	62.0	62.0
30-Dec-21	1:30:00	30-Dec-2101:00	69.0	61.4	62.0
30-Dec-21	2:00:00	30-Dec-2102:00	69.0	61.0	61.7
30-Dec-21	2:30:00	30-Dec-2102:00	69.0	61.0	61.4
30-Dec-21	3:00:00	30-Dec-2103:00	69.0	61.0	61.0
30-Dec-21	3:30:00	30-Dec-2103:00	69.0	61.0	61.0
30-Dec-21	4:00:00	30-Dec-2104:00	68.0	60.2	60.2
30-Dec-21	4:30:00	30-Dec-2104:00	67.4	60.0	60.0
30-Dec-21	5:00:00	30-Dec-2105:00	69.3	60.8	61.7
30-Dec-21	5:30:00	30-Dec-2105:00	70.0	61.1	61.0
30-Dec-21	6:00:00	30-Dec-2106:00	70.1	62.0	61.0
30-Dec-21	6:30:00	30-Dec-2106:00	71.0	62.0	61.3
30-Dec-21	7:00:00	30-Dec-2107:00	71.0	62.0	61.7
30-Dec-21	7:30:00	30-Dec-2107:00	71.0	62.0	61.8
30-Dec-21	8:00:00	30-Dec-2108:00	71.0	62.0	61.9

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

30-Dec-21	8:30:00	30-Dec-2108:00	71.0	62.5	62.6
30-Dec-21	9:00:00	30-Dec-2109:00	71.0	63.0	62.6
30-Dec-21	9:30:00	30-Dec-2109:00	71.7	63.0	63.0
30-Dec-21	10:00:00	30-Dec-2110:00	72.0	63.0	63.0
30-Dec-21	10:30:00	30-Dec-2110:00	72.0	63.3	63.0
30-Dec-21	11:00:00	30-Dec-2111:00	72.0	63.3	63.0
30-Dec-21	11:30:00	30-Dec-2111:00	72.0	63.7	63.7
30-Dec-21	12:00:00	30-Dec-2112:00	72.0	64.0	63.8
30-Dec-21	12:30:00	30-Dec-2112:00	72.0	64.0	63.6
30-Dec-21	13:00:00	30-Dec-2113:00	72.0	64.0	63.8
30-Dec-21	13:30:00	30-Dec-2113:00	72.9	64.0	64.0
30-Dec-21	14:00:00	30-Dec-2114:00	73.0	64.0	64.0
30-Dec-21	14:30:00	30-Dec-2114:00	72.7	64.0	64.0
30-Dec-21	15:00:00	30-Dec-2115:00	73.0	64.6	64.3
30-Dec-21	15:30:00	30-Dec-2115:00	73.6	64.7	65.0
30-Dec-21	16:00:00	30-Dec-2116:00	73.7	65.0	64.7
30-Dec-21	16:30:00	30-Dec-2116:00	74.0	65.6	65.2
30-Dec-21	17:00:00	30-Dec-2117:00	74.3	66.0	66.0
30-Dec-21	17:30:00	30-Dec-2117:00	72.0	64.2	64.1
30-Dec-21	18:00:00	30-Dec-2118:00	70.8	62.8	63.2
30-Dec-21	18:30:00	30-Dec-2118:00	70.0	62.0	62.6
30-Dec-21	19:00:00	30-Dec-2119:00	69.8	61.7	62.0
30-Dec-21	19:30:00	30-Dec-2119:00	69.0	61.0	61.1
30-Dec-21	20:00:00	30-Dec-2120:00	69.0	61.0	61.0
30-Dec-21	20:30:00	30-Dec-2120:00	68.7	60.7	61.0
30-Dec-21	21:00:00	30-Dec-2121:00	68.0	60.0	60.9
30-Dec-21	21:30:00	30-Dec-2121:00	68.0	60.0	60.0
30-Dec-21	22:00:00	30-Dec-2122:00	68.0	60.0	60.0
30-Dec-21	22:30:00	30-Dec-2122:00	67.8	59.7	60.0
30-Dec-21	23:00:00	30-Dec-2123:00	67.3	59.3	60.0
30-Dec-21	23:30:00	30-Dec-2123:00	69.9	61.4	61.5
31-Dec-21	0:00:00	31-Dec-2100:00	71.0	62.0	62.0
31-Dec-21	0:30:00	31-Dec-2100:00	71.0	62.0	62.0
31-Dec-21	1:00:00	31-Dec-2101:00	71.0	62.0	62.0
31-Dec-21	1:30:00	31-Dec-2101:00	71.1	62.5	62.5
31-Dec-21	2:00:00	31-Dec-2102:00	72.0	63.0	63.0
31-Dec-21	2:30:00	31-Dec-2102:00	72.0	63.0	63.0
31-Dec-21	3:00:00	31-Dec-2103:00	72.3	63.0	63.0
31-Dec-21	3:30:00	31-Dec-2103:00	72.3	63.4	63.4
31-Dec-21	4:00:00	31-Dec-2104:00	72.1	63.7	63.7
31-Dec-21	4:30:00	31-Dec-2104:00	73.0	64.0	64.0
31-Dec-21	5:00:00	31-Dec-2105:00	72.4	63.7	64.0
31-Dec-21	5:30:00	31-Dec-2105:00	73.0	64.0	64.0
31-Dec-21	6:00:00	31-Dec-2106:00	73.0	63.7	63.7
31-Dec-21	6:30:00	31-Dec-2106:00	73.0	64.0	64.0
31-Dec-21	7:00:00	31-Dec-2107:00	73.0	64.0	64.2
31-Dec-21	7:30:00	31-Dec-2107:00	73.0	64.6	64.4
31-Dec-21	8:00:00	31-Dec-2108:00	73.3	64.7	65.0
31-Dec-21	8:30:00	31-Dec-2108:00	73.3	65.0	65.0
31-Dec-21	9:00:00	31-Dec-2109:00	73.6	65.0	65.0
31-Dec-21	9:30:00	31-Dec-2109:00	74.0	65.0	65.0
31-Dec-21	10:00:00	31-Dec-2110:00	73.0	64.6	65.0
31-Dec-21	10:30:00	31-Dec-2110:00	70.2	62.4	62.7
31-Dec-21	11:00:00	31-Dec-2111:00	70.0	62.0	62.6
31-Dec-21	11:30:00	31-Dec-2111:00	70.0	62.0	62.0
31-Dec-21	12:00:00	31-Dec-2112:00	69.5	62.0	62.0
31-Dec-21	12:30:00	31-Dec-2112:00	69.0	61.4	61.4
31-Dec-21	13:00:00	31-Dec-2113:00	69.0	61.0	61.0



# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

31-Dec-21	13:30:00	31-Dec-2113:00	69.0	61.0	61.0
31-Dec-21	14:00:00	31-Dec-2114:00	68.1	61.0	61.0
31-Dec-21	14:30:00	31-Dec-2114:00	68.0	60.4	60.4
31-Dec-21	15:00:00	31-Dec-2115:00	68.0	60.0	60.0
31-Dec-21	15:30:00	31-Dec-2115:00	68.0	60.0	60.0
31-Dec-21	16:00:00	31-Dec-2116:00	68.0	60.0	60.0
31-Dec-21	16:30:00	31-Dec-2116:00	70.8	62.0	61.4
31-Dec-21	17:00:00	31-Dec-2117:00	71.0	62.0	62.0
31-Dec-21	17:30:00	31-Dec-2117:00	71.0	62.2	62.0
31-Dec-21	18:00:00	31-Dec-2118:00	71.0	62.4	62.3
31-Dec-21	18:30:00	31-Dec-2118:00	71.9	63.0	62.7
31-Dec-21	19:00:00	31-Dec-2119:00	71.4	63.0	63.0
31-Dec-21	19:30:00	31-Dec-2119:00	72.0	63.0	63.0
31-Dec-21	20:00:00	31-Dec-2120:00	72.2	63.9	63.6
31-Dec-21	20:30:00	31-Dec-2120:00	72.7	63.7	64.0
31-Dec-21	21:00:00	31-Dec-2121:00	73.0	64.2	64.0
31-Dec-21	21:30:00	31-Dec-2121:00	73.0	65.0	64.3
31-Dec-21	22:00:00	31-Dec-2122:00	73.6	65.0	65.0
31-Dec-21	22:30:00	31-Dec-2122:00	73.0	65.0	65.0
31-Dec-21	23:00:00	31-Dec-2123:00	73.3	65.0	65.0
31-Dec-21	23:30:00	31-Dec-2123:00	73.8	65.0	65.0
1-Jan-22	0:00:00	01-Jan-2200:00	74.0	65.0	65.0
1-Jan-22	0:30:00	01-Jan-2200:00	74.0	65.0	65.0
1-Jan-22	1:00:00	01-Jan-2201:00	74.0	65.0	65.0
1-Jan-22	1:30:00	01-Jan-2201:00	73.2	64.0	63.4
1-Jan-22	2:00:00	01-Jan-2202:00	71.0	63.0	60.2
1-Jan-22	2:30:00	01-Jan-2202:00	71.0	63.0	63.0
1-Jan-22	3:00:00	01-Jan-2203:00	71.0	63.0	63.0
1-Jan-22	3:30:00	01-Jan-2203:00	71.0	63.0	63.0
1-Jan-22	4:00:00	01-Jan-2204:00	70.7	63.0	63.0
1-Jan-22	4:30:00	01-Jan-2204:00	70.6	63.0	63.0
1-Jan-22	5:00:00	01-Jan-2205:00	70.0	63.0	63.0
1-Jan-22	5:30:00	01-Jan-2205:00	70.0	63.0	63.0
1-Jan-22	6:00:00	01-Jan-2206:00	70.0	62.0	62.7
1-Jan-22	6:30:00	01-Jan-2206:00	70.0	62.0	62.2
1-Jan-22	7:00:00	01-Jan-2207:00	69.1	61.4	61.7
1-Jan-22	7:30:00	01-Jan-2207:00	69.0	61.0	61.3
1-Jan-22	8:00:00	01-Jan-2208:00	69.0	61.0	61.0
1-Jan-22	8:30:00	01-Jan-2208:00	68.4	60.7	61.0
1-Jan-22	9:00:00	01-Jan-2209:00	68.3	61.0	61.0
1-Jan-22	9:30:00	01-Jan-2209:00	68.3	61.0	61.0
1-Jan-22	10:00:00	01-Jan-2210:00	68.0	61.0	61.0
1-Jan-22	10:30:00	01-Jan-2210:00	68.0	60.7	61.0
1-Jan-22	11:00:00	01-Jan-2211:00	68.0	60.5	61.0
1-Jan-22	11:30:00	01-Jan-2211:00	68.4	61.1	61.2
1-Jan-22	12:00:00	01-Jan-2212:00	72.0	63.4	62.9
1-Jan-22	12:30:00	01-Jan-2212:00	71.8	63.0	63.0
1-Jan-22	13:00:00	01-Jan-2213:00	71.9	63.0	63.0
1-Jan-22	13:30:00	01-Jan-2213:00	72.0	63.3	63.0
1-Jan-22	14:00:00	01-Jan-2214:00	72.0	63.7	63.0
1-Jan-22	14:30:00	01-Jan-2214:00	72.0	64.0	63.0
1-Jan-22	15:00:00	01-Jan-2215:00	73.0	64.0	63.0
1-Jan-22	15:30:00	01-Jan-2215:00	73.0	64.0	63.5
1-Jan-22	16:00:00	01-Jan-2216:00	73.0	64.0	64.0
1-Jan-22	16:30:00	01-Jan-2216:00	73.0	64.9	64.0
1-Jan-22	17:00:00	01-Jan-2217:00	73.1	65.0	64.0
1-Jan-22	17:30:00	01-Jan-2217:00	73.7	65.0	64.0
1-Jan-22	18:00:00	01-Jan-2218:00	74.0	65.0	64.0

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

1-Jan-22	18:30:00	01-Jan-2218:00	74.0	65.0	64.0
1-Jan-22	19:00:00	01-Jan-2219:00	74.0	65.0	64.0
1-Jan-22	19:30:00	01-Jan-2219:00	74.0	65.0	64.0
1-Jan-22	20:00:00	01-Jan-2220:00	74.0	65.2	64.9
1-Jan-22	20:30:00	01-Jan-2220:00	74.0	65.1	65.2
1-Jan-22	21:00:00	01-Jan-2221:00	71.4	62.2	63.9
1-Jan-22	21:30:00	01-Jan-2221:00	71.0	63.0	63.0
1-Jan-22	22:00:00	01-Jan-2222:00	70.9	63.0	63.0
1-Jan-22	22:30:00	01-Jan-2222:00	70.3	63.0	63.0
1-Jan-22	23:00:00	01-Jan-2223:00	70.0	62.9	63.0
1-Jan-22	23:30:00	01-Jan-2223:00	70.0	62.0	62.8
2-Jan-22	0:00:00	02-Jan-2200:00	70.0	62.0	62.0
2-Jan-22	0:30:00	02-Jan-2200:00	70.0	62.0	62.0
2-Jan-22	1:00:00	02-Jan-2201:00	69.3	62.0	62.0
2-Jan-22	1:30:00	02-Jan-2201:00	69.0	62.0	62.0
2-Jan-22	2:00:00	02-Jan-2202:00	69.0	62.0	62.0
2-Jan-22	2:30:00	02-Jan-2202:00	69.0	61.6	62.0
2-Jan-22	3:00:00	02-Jan-2203:00	69.0	62.0	62.0
2-Jan-22	3:30:00	02-Jan-2203:00	69.0	61.4	62.0
2-Jan-22	4:00:00	02-Jan-2204:00	69.0	61.0	62.0
2-Jan-22	4:30:00	02-Jan-2204:00	69.0	61.0	62.0
2-Jan-22	5:00:00	02-Jan-2205:00	69.0	61.0	62.0
2-Jan-22	5:30:00	02-Jan-2205:00	68.6	61.0	62.0
2-Jan-22	6:00:00	02-Jan-2206:00	68.2	61.4	62.0
2-Jan-22	6:30:00	02-Jan-2206:00	72.0	63.5	62.0
2-Jan-22	7:00:00	02-Jan-2207:00	72.0	63.7	62.0
2-Jan-22	7:30:00	02-Jan-2207:00	72.4	63.8	62.0
2-Jan-22	8:00:00	02-Jan-2208:00	72.3	63.7	62.0
2-Jan-22	8:30:00	02-Jan-2208:00	72.0	64.0	62.0
2-Jan-22	9:00:00	02-Jan-2209:00	72.0	63.6	62.6
2-Jan-22	9:30:00	02-Jan-2209:00	72.0	63.3	63.0
2-Jan-22	10:00:00	02-Jan-2210:00	72.0	63.0	63.0
2-Jan-22	10:30:00	02-Jan-2210:00	72.0	63.6	63.3
2-Jan-22	11:00:00	02-Jan-2211:00	72.0	63.4	63.0
2-Jan-22	11:30:00	02-Jan-2211:00	72.3	64.0	63.0
2-Jan-22	12:00:00	02-Jan-2212:00	72.3	64.0	63.0
2-Jan-22	12:30:00	02-Jan-2212:00	73.0	64.0	63.0
2-Jan-22	13:00:00	02-Jan-2213:00	73.3	64.7	63.0
2-Jan-22	13:30:00	02-Jan-2213:00	74.0	65.0	63.0
2-Jan-22	14:00:00	02-Jan-2214:00	74.0	65.0	63.0
2-Jan-22	14:30:00	02-Jan-2214:00	74.0	66.0	64.3
2-Jan-22	15:00:00	02-Jan-2215:00	74.3	66.0	65.9
2-Jan-22	15:30:00	02-Jan-2215:00	73.2	64.7	65.2
2-Jan-22	16:00:00	02-Jan-2216:00	70.8	63.0	63.2
2-Jan-22	16:30:00	02-Jan-2216:00	70.3	62.7	63.0
2-Jan-22	17:00:00	02-Jan-2217:00	70.0	62.2	62.0
2-Jan-22	17:30:00	02-Jan-2217:00	69.5	61.5	61.8
2-Jan-22	18:00:00	02-Jan-2218:00	68.4	60.4	60.7
2-Jan-22	18:30:00	02-Jan-2218:00	68.0	60.0	60.0
2-Jan-22	19:00:00	02-Jan-2219:00	67.5	59.2	59.2

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

2-Jan-22	19:30:00	02-Jan-22	19:00	67.0	58.7	58.7
2-Jan-22	20:00:00	02-Jan-22	20:00	67.0	58.0	58.6
2-Jan-22	20:30:00	02-Jan-22	20:00	67.2	58.0	58.0
2-Jan-22	21:00:00	02-Jan-22	21:00	70.0	60.8	60.7
2-Jan-22	21:30:00	02-Jan-22	21:00	70.0	61.0	61.0
2-Jan-22	22:00:00	02-Jan-22	22:00	70.5	61.0	61.0
2-Jan-22	22:30:00	02-Jan-22	22:00	70.7	61.3	61.1
2-Jan-22	23:00:00	02-Jan-22	23:00	70.4	61.5	62.0
2-Jan-22	23:30:00	02-Jan-22	23:00	70.4	62.0	62.0
3-Jan-22	0:00:00	03-Jan-22	00:00	70.7	61.4	62.0
3-Jan-22	0:30:00	03-Jan-22	00:00	71.0	62.0	62.0
3-Jan-22	1:00:00	03-Jan-22	01:00	71.0	62.0	62.0
3-Jan-22	1:30:00	03-Jan-22	01:00	71.0	62.0	62.0
3-Jan-22	2:00:00	03-Jan-22	02:00	71.3	62.1	62.0
3-Jan-22	2:30:00	03-Jan-22	02:00	72.0	63.0	62.2
3-Jan-22	3:00:00	03-Jan-22	03:00	72.0	63.0	63.0
3-Jan-22	3:30:00	03-Jan-22	03:00	72.0	63.0	63.0
3-Jan-22	4:00:00	03-Jan-22	04:00	72.0	63.0	63.0
3-Jan-22	4:30:00	03-Jan-22	04:00	72.0	63.0	63.0
3-Jan-22	5:00:00	03-Jan-22	05:00	72.0	63.0	63.0
3-Jan-22	5:30:00	03-Jan-22	05:00	72.0	63.0	63.0
3-Jan-22	6:00:00	03-Jan-22	06:00	72.0	63.0	63.0
3-Jan-22	6:30:00	03-Jan-22	06:00	72.3	63.0	63.0
3-Jan-22	7:00:00	03-Jan-22	07:00	72.0	63.0	63.0
3-Jan-22	7:30:00	03-Jan-22	07:00	72.0	63.0	63.0
3-Jan-22	8:00:00	03-Jan-22	08:00	72.3	63.0	63.0
3-Jan-22	8:30:00	03-Jan-22	08:00	72.3	63.1	63.3
3-Jan-22	9:00:00	03-Jan-22	09:00	72.7	64.0	63.8
3-Jan-22	9:30:00	03-Jan-22	09:00	73.0	64.0	64.0
3-Jan-22	10:00:00	03-Jan-22	10:00	73.0	64.0	64.0
3-Jan-22	10:30:00	03-Jan-22	10:00	73.2	64.6	64.0
3-Jan-22	11:00:00	03-Jan-22	11:00	74.0	65.0	64.0
3-Jan-22	11:30:00	03-Jan-22	11:00	74.0	65.3	64.0
3-Jan-22	12:00:00	03-Jan-22	12:00	74.0	65.4	65.5
3-Jan-22	12:30:00	03-Jan-22	12:00	74.3	66.0	66.0
3-Jan-22	13:00:00	03-Jan-22	13:00	71.1	65.0	64.5
3-Jan-22	13:30:00	03-Jan-22	13:00	70.7	63.0	63.0
3-Jan-22	14:00:00	03-Jan-22	14:00	70.1	63.0	63.0
3-Jan-22	14:30:00	03-Jan-22	14:00	70.0	62.0	62.0
3-Jan-22	15:00:00	03-Jan-22	15:00	69.6	62.0	62.0
3-Jan-22	15:30:00	03-Jan-22	15:00	69.0	62.0	62.0
3-Jan-22	16:00:00	03-Jan-22	16:00	69.0	61.3	61.0
3-Jan-22	16:30:00	03-Jan-22	16:00	69.0	61.0	61.0
3-Jan-22	17:00:00	03-Jan-22	17:00	68.8	61.0	61.0
3-Jan-22	17:30:00	03-Jan-22	17:00	68.0	60.9	61.0
3-Jan-22	18:00:00	03-Jan-22	18:00	68.0	60.0	60.2
3-Jan-22	18:30:00	03-Jan-22	18:00	67.1	59.4	60.0
3-Jan-22	19:00:00	03-Jan-22	19:00	68.0	59.3	59.3
3-Jan-22	19:30:00	03-Jan-22	19:00	70.3	61.7	62.0
3-Jan-22	20:00:00	03-Jan-22	20:00	70.5	62.0	62.0
3-Jan-22	20:30:00	03-Jan-22	20:00	70.7	62.0	62.0
3-Jan-22	21:00:00	03-Jan-22	21:00	70.4	62.0	62.0
3-Jan-22	21:30:00	03-Jan-22	21:00	71.0	62.0	62.0
3-Jan-22	22:00:00	03-Jan-22	22:00	71.0	62.4	62.0
3-Jan-22	22:30:00	03-Jan-22	22:00	71.0	63.0	62.8
3-Jan-22	23:00:00	03-Jan-22	23:00	71.5	63.0	63.0
3-Jan-22	23:30:00	03-Jan-22	23:00	71.7	63.0	63.0
4-Jan-22	0:00:00	04-Jan-22	00:00	71.6	63.0	63.0

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

4-Jan-22	0:30:00	04-Jan-2200:00	71.6	63.0	63.1
4-Jan-22	1:00:00	04-Jan-2201:00	72.0	63.5	63.7
4-Jan-22	1:30:00	04-Jan-2201:00	72.5	64.0	64.0
4-Jan-22	2:00:00	04-Jan-2202:00	72.1	64.0	64.0
4-Jan-22	2:30:00	04-Jan-2202:00	72.4	64.0	64.0
4-Jan-22	3:00:00	04-Jan-2203:00	73.0	64.0	64.0
4-Jan-22	3:30:00	04-Jan-2203:00	73.0	64.0	64.0
4-Jan-22	4:00:00	04-Jan-2204:00	73.0	64.0	64.0
4-Jan-22	4:30:00	04-Jan-2204:00	73.0	64.0	64.0
4-Jan-22	5:00:00	04-Jan-2205:00	73.0	64.0	64.0
4-Jan-22	5:30:00	04-Jan-2205:00	73.0	64.0	64.0
4-Jan-22	6:00:00	04-Jan-2206:00	73.0	64.0	64.0
4-Jan-22	6:30:00	04-Jan-2206:00	73.0	64.0	64.6
4-Jan-22	7:00:00	04-Jan-2207:00	73.0	64.0	64.4
4-Jan-22	7:30:00	04-Jan-2207:00	73.0	64.0	65.0
4-Jan-22	8:00:00	04-Jan-2208:00	73.3	64.0	65.0
4-Jan-22	8:30:00	04-Jan-2208:00	73.8	64.0	65.0
4-Jan-22	9:00:00	04-Jan-2209:00	74.0	64.0	65.0
4-Jan-22	9:30:00	04-Jan-2209:00	73.1	64.0	64.3
4-Jan-22	10:00:00	04-Jan-2210:00	71.0	64.0	63.0
4-Jan-22	10:30:00	04-Jan-2210:00	71.0	64.0	63.0
4-Jan-22	11:00:00	04-Jan-2211:00	71.0	64.0	63.0
4-Jan-22	11:30:00	04-Jan-2211:00	70.3	64.0	62.7
4-Jan-22	12:00:00	04-Jan-2212:00	70.0	64.0	63.0
4-Jan-22	12:30:00	04-Jan-2212:00	70.0	64.0	63.0
4-Jan-22	13:00:00	04-Jan-2213:00	70.0	64.0	62.0
4-Jan-22	13:30:00	04-Jan-2213:00	70.0	64.0	62.0
4-Jan-22	14:00:00	04-Jan-2214:00	69.2	64.0	62.0
4-Jan-22	14:30:00	04-Jan-2214:00	69.0	64.0	62.0
4-Jan-22	15:00:00	04-Jan-2215:00	69.0	61.3	62.0
4-Jan-22	15:30:00	04-Jan-2215:00	69.0	61.0	61.2
4-Jan-22	16:00:00	04-Jan-2216:00	68.8	61.0	61.0
4-Jan-22	16:30:00	04-Jan-2216:00	68.0	60.9	60.9
4-Jan-22	17:00:00	04-Jan-2217:00	68.0	60.0	60.0
4-Jan-22	17:30:00	04-Jan-2217:00	68.5	60.3	61.4
4-Jan-22	18:00:00	04-Jan-2218:00	70.0	62.0	62.0
4-Jan-22	18:30:00	04-Jan-2218:00	70.0	62.0	62.0
4-Jan-22	19:00:00	04-Jan-2219:00	70.0	62.0	62.0
4-Jan-22	19:30:00	04-Jan-2219:00	70.0	61.7	62.0
4-Jan-22	20:00:00	04-Jan-2220:00	70.8	61.8	62.0
4-Jan-22	20:30:00	04-Jan-2220:00	70.4	61.9	62.0
4-Jan-22	21:00:00	04-Jan-2221:00	71.0	62.0	62.0
4-Jan-22	21:30:00	04-Jan-2221:00	71.0	62.0	62.0
4-Jan-22	22:00:00	04-Jan-2222:00	71.0	62.0	62.0
4-Jan-22	22:30:00	04-Jan-2222:00	71.0	62.0	62.0
4-Jan-22	23:00:00	04-Jan-2223:00	71.0	62.3	62.0
4-Jan-22	23:30:00	04-Jan-2223:00	71.0	63.0	62.5
5-Jan-22	0:00:00	05-Jan-2200:00	71.0	62.7	63.0
5-Jan-22	0:30:00	05-Jan-2200:00	71.3	63.0	63.0
5-Jan-22	1:00:00	05-Jan-2201:00	71.6	63.0	63.0
5-Jan-22	1:30:00	05-Jan-2201:00	71.7	63.0	63.0
5-Jan-22	2:00:00	05-Jan-2202:00	72.0	63.0	63.0
5-Jan-22	2:30:00	05-Jan-2202:00	72.0	63.3	63.2
5-Jan-22	3:00:00	05-Jan-2203:00	72.0	63.4	64.0
5-Jan-22	3:30:00	05-Jan-2203:00	72.0	64.0	64.0
5-Jan-22	4:00:00	05-Jan-2204:00	72.7	64.0	64.0
5-Jan-22	4:30:00	05-Jan-2204:00	73.0	64.0	64.0
5-Jan-22	5:00:00	05-Jan-2205:00	72.4	64.0	64.0

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

5-Jan-22	5:30:00	05-Jan-2205:00	72.6	64.0	64.0
5-Jan-22	6:00:00	05-Jan-2206:00	72.8	64.0	64.0
5-Jan-22	6:30:00	05-Jan-2206:00	72.7	64.0	64.0
5-Jan-22	7:00:00	05-Jan-2207:00	73.0	64.0	64.0
5-Jan-22	7:30:00	05-Jan-2207:00	73.0	64.0	64.0
5-Jan-22	8:00:00	05-Jan-2208:00	73.0	64.0	64.0
5-Jan-22	8:30:00	05-Jan-2208:00	73.4	65.0	64.6
5-Jan-22	9:00:00	05-Jan-2209:00	73.8	65.0	64.5
5-Jan-22	9:30:00	05-Jan-2209:00	73.9	65.0	65.0
5-Jan-22	10:00:00	05-Jan-2210:00	74.0	65.0	65.0
5-Jan-22	10:30:00	05-Jan-2210:00	72.4	65.0	63.9
5-Jan-22	11:00:00	05-Jan-2211:00	70.0	62.7	62.7
5-Jan-22	11:30:00	05-Jan-2211:00	70.0	62.1	62.2
5-Jan-22	12:00:00	05-Jan-2212:00	69.7	62.0	62.0
5-Jan-22	12:30:00	05-Jan-2212:00	69.0	61.5	62.0
5-Jan-22	13:00:00	05-Jan-2213:00	69.0	61.9	62.0
5-Jan-22	13:30:00	05-Jan-2213:00	68.4	61.1	61.4
5-Jan-22	14:00:00	05-Jan-2214:00	68.0	60.5	60.8
5-Jan-22	14:30:00	05-Jan-2214:00	68.0	60.0	60.0
5-Jan-22	15:00:00	05-Jan-2215:00	68.0	60.0	60.0
5-Jan-22	15:30:00	05-Jan-2215:00	68.0	60.0	60.0
5-Jan-22	16:00:00	05-Jan-2216:00	68.0	59.5	60.0
5-Jan-22	16:30:00	05-Jan-2216:00	70.1	59.9	60.8
5-Jan-22	17:00:00	05-Jan-2217:00	71.0	62.0	62.0
5-Jan-22	17:30:00	05-Jan-2217:00	70.4	62.0	62.0
5-Jan-22	18:00:00	05-Jan-2218:00	70.4	62.0	62.0
5-Jan-22	18:30:00	05-Jan-2218:00	71.0	62.0	62.0
5-Jan-22	19:00:00	05-Jan-2219:00	71.0	62.0	62.0
5-Jan-22	19:30:00	05-Jan-2219:00	71.0	62.0	62.0
5-Jan-22	20:00:00	05-Jan-2220:00	71.0	62.0	62.0
5-Jan-22	20:30:00	05-Jan-2220:00	71.0	62.0	62.3
5-Jan-22	21:00:00	05-Jan-2221:00	71.0	62.0	62.3
5-Jan-22	21:30:00	05-Jan-2221:00	71.7	63.0	63.0
5-Jan-22	22:00:00	05-Jan-2222:00	71.7	63.0	63.0
5-Jan-22	22:30:00	05-Jan-2222:00	72.0	63.0	63.0
5-Jan-22	23:00:00	05-Jan-2223:00	72.0	63.0	63.0
5-Jan-22	23:30:00	05-Jan-2223:00	72.0	63.0	63.0
6-Jan-22	0:00:00	06-Jan-2200:00	72.0	63.0	63.0
6-Jan-22	0:30:00	06-Jan-2200:00	72.0	63.4	63.4
6-Jan-22	1:00:00	06-Jan-2201:00	72.3	64.0	63.7
6-Jan-22	1:30:00	06-Jan-2201:00	72.3	64.0	64.0
6-Jan-22	2:00:00	06-Jan-2202:00	73.0	64.0	64.0
6-Jan-22	2:30:00	06-Jan-2202:00	73.0	64.0	64.0
6-Jan-22	3:00:00	06-Jan-2203:00	73.0	64.0	64.0
6-Jan-22	3:30:00	06-Jan-2203:00	73.0	64.3	64.0
6-Jan-22	4:00:00	06-Jan-2204:00	73.0	64.5	64.4
6-Jan-22	4:30:00	06-Jan-2204:00	73.3	64.7	65.0
6-Jan-22	5:00:00	06-Jan-2205:00	73.9	64.7	65.0
6-Jan-22	5:30:00	06-Jan-2205:00	73.8	65.0	65.0
6-Jan-22	6:00:00	06-Jan-2206:00	73.7	64.7	64.7
6-Jan-22	6:30:00	06-Jan-2206:00	70.0	62.2	62.0
6-Jan-22	7:00:00	06-Jan-2207:00	69.7	61.0	61.7
6-Jan-22	7:30:00	06-Jan-2207:00	69.0	61.0	61.8
6-Jan-22	8:00:00	06-Jan-2208:00	69.0	61.0	61.3
6-Jan-22	8:30:00	06-Jan-2208:00	69.0	61.0	61.1
6-Jan-22	9:00:00	06-Jan-2209:00	69.0	61.0	61.1
6-Jan-22	9:30:00	06-Jan-2209:00	69.0	61.0	61.0
6-Jan-22	10:00:00	06-Jan-2210:00	68.7	61.0	61.0

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

6-Jan-22	10:30:00	06-Jan-2210:00	68.7	61.0	61.0
6-Jan-22	11:00:00	06-Jan-2211:00	68.0	60.8	61.0
6-Jan-22	11:30:00	06-Jan-2211:00	71.1	63.6	62.5
6-Jan-22	12:00:00	06-Jan-2212:00	72.0	63.0	63.0
6-Jan-22	12:30:00	06-Jan-2212:00	72.0	63.3	63.0
6-Jan-22	13:00:00	06-Jan-2213:00	72.0	63.0	63.0
6-Jan-22	13:30:00	06-Jan-2213:00	72.0	63.0	63.0
6-Jan-22	14:00:00	06-Jan-2214:00	71.7	63.0	63.0
6-Jan-22	14:30:00	06-Jan-2214:00	72.0	63.0	63.0
6-Jan-22	15:00:00	06-Jan-2215:00	71.9	63.0	63.0
6-Jan-22	15:30:00	06-Jan-2215:00	71.8	63.0	63.0
6-Jan-22	16:00:00	06-Jan-2216:00	72.0	63.0	63.0
6-Jan-22	16:30:00	06-Jan-2216:00	72.0	63.0	63.0
6-Jan-22	17:00:00	06-Jan-2217:00	72.0	63.0	63.0
6-Jan-22	17:30:00	06-Jan-2217:00	72.0	63.0	63.0
6-Jan-22	18:00:00	06-Jan-2218:00	72.0	63.3	63.0
6-Jan-22	18:30:00	06-Jan-2218:00	72.0	63.0	63.0
6-Jan-22	19:00:00	06-Jan-2219:00	72.0	63.0	63.3
6-Jan-22	19:30:00	06-Jan-2219:00	72.0	63.0	63.0
6-Jan-22	20:00:00	06-Jan-2220:00	72.0	63.0	63.0
6-Jan-22	20:30:00	06-Jan-2220:00	72.0	63.0	63.0
6-Jan-22	21:00:00	06-Jan-2221:00	72.0	63.2	63.4
6-Jan-22	21:30:00	06-Jan-2221:00	72.2	63.4	64.0
6-Jan-22	22:00:00	06-Jan-2222:00	72.7	64.0	64.0
6-Jan-22	22:30:00	06-Jan-2222:00	72.7	64.0	64.0
6-Jan-22	23:00:00	06-Jan-2223:00	73.0	64.0	64.0
6-Jan-22	23:30:00	06-Jan-2223:00	73.0	64.0	64.0
7-Jan-22	0:00:00	07-Jan-2200:00	72.7	64.0	64.0
7-Jan-22	0:30:00	07-Jan-2200:00	73.0	64.0	64.0
7-Jan-22	1:00:00	07-Jan-2201:00	73.0	64.0	64.0
7-Jan-22	1:30:00	07-Jan-2201:00	73.0	64.0	64.1
7-Jan-22	2:00:00	07-Jan-2202:00	73.0	64.3	65.0
7-Jan-22	2:30:00	07-Jan-2202:00	73.4	64.7	65.0
7-Jan-22	3:00:00	07-Jan-2203:00	73.4	64.5	64.5
7-Jan-22	3:30:00	07-Jan-2203:00	70.1	62.3	63.0
7-Jan-22	4:00:00	07-Jan-2204:00	70.0	61.7	62.2
7-Jan-22	4:30:00	07-Jan-2204:00	69.7	61.9	62.0
7-Jan-22	5:00:00	07-Jan-2205:00	69.0	61.0	61.2
7-Jan-22	5:30:00	07-Jan-2205:00	69.0	61.0	61.0
7-Jan-22	6:00:00	07-Jan-2206:00	68.6	60.3	61.0
7-Jan-22	6:30:00	07-Jan-2206:00	68.0	60.0	60.1
7-Jan-22	7:00:00	07-Jan-2207:00	67.4	59.2	60.0
7-Jan-22	7:30:00	07-Jan-2207:00	67.2	58.3	58.6
7-Jan-22	8:00:00	07-Jan-2208:00	66.4	58.0	58.3
7-Jan-22	8:30:00	07-Jan-2208:00	69.7	60.7	61.1
7-Jan-22	9:00:00	07-Jan-2209:00	71.0	62.3	62.3
7-Jan-22	9:30:00	07-Jan-2209:00	71.0	62.5	62.6
7-Jan-22	10:00:00	07-Jan-2210:00	71.4	62.4	63.0
7-Jan-22	10:30:00	07-Jan-2210:00	72.0	63.0	63.0
7-Jan-22	11:00:00	07-Jan-2211:00	72.0	63.1	63.4
7-Jan-22	11:30:00	07-Jan-2211:00	72.0	63.7	63.7
7-Jan-22	12:00:00	07-Jan-2212:00	72.3	64.0	64.0
7-Jan-22	12:30:00	07-Jan-2212:00	72.0	63.8	63.8
7-Jan-22	13:00:00	07-Jan-2213:00	72.3	64.0	63.9
7-Jan-22	13:30:00	07-Jan-2213:00	73.0	64.0	64.0
7-Jan-22	14:00:00	07-Jan-2214:00	73.0	64.0	64.0
7-Jan-22	14:30:00	07-Jan-2214:00	73.0	64.0	64.0
7-Jan-22	15:00:00	07-Jan-2215:00	72.5	63.7	64.0



# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

7-Jan-22	15:30:00	07-Jan-2215:00	72.7	64.0	64.0
7-Jan-22	16:00:00	07-Jan-2216:00	72.5	64.0	64.0
7-Jan-22	16:30:00	07-Jan-2216:00	72.0	64.0	64.0
7-Jan-22	17:00:00	07-Jan-2217:00	72.0	63.5	64.0
7-Jan-22	17:30:00	07-Jan-2217:00	72.0	63.6	64.0
7-Jan-22	18:00:00	07-Jan-2218:00	72.0	63.0	63.3
7-Jan-22	18:30:00	07-Jan-2218:00	72.0	63.0	63.3
7-Jan-22	19:00:00	07-Jan-2219:00	72.0	63.0	63.3
7-Jan-22	19:30:00	07-Jan-2219:00	72.0	63.0	63.0
7-Jan-22	20:00:00	07-Jan-2220:00	72.0	63.0	63.0
7-Jan-22	20:30:00	07-Jan-2220:00	72.0	63.0	63.0
7-Jan-22	21:00:00	07-Jan-2221:00	72.0	63.0	63.1
7-Jan-22	21:30:00	07-Jan-2221:00	72.5	63.3	64.0
7-Jan-22	22:00:00	07-Jan-2222:00	73.0	64.0	64.0
7-Jan-22	22:30:00	07-Jan-2222:00	73.0	64.3	64.5
7-Jan-22	23:00:00	07-Jan-2223:00	73.1	65.0	65.0
7-Jan-22	23:30:00	07-Jan-2223:00	73.7	65.0	65.0
8-Jan-22	0:00:00	08-Jan-2200:00	74.0	65.0	65.0
8-Jan-22	0:30:00	08-Jan-2200:00	74.0	65.5	65.5
8-Jan-22	1:00:00	08-Jan-2201:00	74.0	66.0	66.0
8-Jan-22	1:30:00	08-Jan-2201:00	72.2	64.5	65.1
8-Jan-22	2:00:00	08-Jan-2202:00	71.0	63.4	64.0
8-Jan-22	2:30:00	08-Jan-2202:00	71.0	63.0	64.0
8-Jan-22	3:00:00	08-Jan-2203:00	71.0	63.3	63.5
8-Jan-22	3:30:00	08-Jan-2203:00	71.0	63.0	63.0
8-Jan-22	4:00:00	08-Jan-2204:00	70.2	63.0	63.0
8-Jan-22	4:30:00	08-Jan-2204:00	70.0	63.0	63.0
8-Jan-22	5:00:00	08-Jan-2205:00	70.0	62.2	63.0
8-Jan-22	5:30:00	08-Jan-2205:00	70.0	62.0	62.1
8-Jan-22	6:00:00	08-Jan-2206:00	70.0	62.0	62.0
8-Jan-22	6:30:00	08-Jan-2206:00	69.5	61.7	62.0
8-Jan-22	7:00:00	08-Jan-2207:00	69.0	62.0	62.0
8-Jan-22	7:30:00	08-Jan-2207:00	69.0	61.1	61.7
8-Jan-22	8:00:00	08-Jan-2208:00	68.9	61.0	61.0
8-Jan-22	8:30:00	08-Jan-2208:00	68.0	60.4	60.5
8-Jan-22	9:00:00	08-Jan-2209:00	68.0	60.0	60.0
8-Jan-22	9:30:00	08-Jan-2209:00	68.0	60.0	60.0
8-Jan-22	10:00:00	08-Jan-2210:00	70.5	61.8	61.8
8-Jan-22	10:30:00	08-Jan-2210:00	71.0	62.4	62.0
8-Jan-22	11:00:00	08-Jan-2211:00	71.0	62.7	62.3
8-Jan-22	11:30:00	08-Jan-2211:00	71.0	62.7	62.7
8-Jan-22	12:00:00	08-Jan-2212:00	72.0	63.0	63.0
8-Jan-22	12:30:00	08-Jan-2212:00	72.0	63.0	63.0
8-Jan-22	13:00:00	08-Jan-2213:00	72.0	63.6	63.7
8-Jan-22	13:30:00	08-Jan-2213:00	72.5	63.9	64.0
8-Jan-22	14:00:00	08-Jan-2214:00	72.7	64.0	64.0
8-Jan-22	14:30:00	08-Jan-2214:00	73.0	64.0	64.0
8-Jan-22	15:00:00	08-Jan-2215:00	73.0	64.1	64.0
8-Jan-22	15:30:00	08-Jan-2215:00	73.0	65.0	64.0
8-Jan-22	16:00:00	08-Jan-2216:00	73.0	65.0	64.4
8-Jan-22	16:30:00	08-Jan-2216:00	73.3	65.0	65.0
8-Jan-22	17:00:00	08-Jan-2217:00	73.0	65.0	65.0
8-Jan-22	17:30:00	08-Jan-2217:00	74.0	65.0	65.0
8-Jan-22	18:00:00	08-Jan-2218:00	74.0	65.0	65.0
8-Jan-22	18:30:00	08-Jan-2218:00	74.0	65.0	65.0
8-Jan-22	19:00:00	08-Jan-2219:00	74.0	65.0	65.0
8-Jan-22	19:30:00	08-Jan-2219:00	74.0	65.0	65.0
8-Jan-22	20:00:00	08-Jan-2220:00	74.0	65.0	65.2

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

8-Jan-22	20:30:00	08-Jan-2220:00	72.2	63.7	62.7
8-Jan-22	21:00:00	08-Jan-2221:00	71.0	63.0	63.0
8-Jan-22	21:30:00	08-Jan-2221:00	70.8	63.0	63.0
8-Jan-22	22:00:00	08-Jan-2222:00	70.0	62.9	63.0
8-Jan-22	22:30:00	08-Jan-2222:00	70.0	62.0	62.8
8-Jan-22	23:00:00	08-Jan-2223:00	70.0	62.0	62.0
8-Jan-22	23:30:00	08-Jan-2223:00	70.0	62.0	62.0
9-Jan-22	0:00:00	09-Jan-2200:00	69.4	61.7	61.7
9-Jan-22	0:30:00	09-Jan-2200:00	69.0	62.0	62.0
9-Jan-22	1:00:00	09-Jan-2201:00	69.0	61.7	62.0
9-Jan-22	1:30:00	09-Jan-2201:00	69.0	61.3	62.0
9-Jan-22	2:00:00	09-Jan-2202:00	69.0	61.0	61.4
9-Jan-22	2:30:00	09-Jan-2202:00	69.0	61.0	61.0
9-Jan-22	3:00:00	09-Jan-2203:00	69.0	61.0	61.0
9-Jan-22	3:30:00	09-Jan-2203:00	68.7	61.0	61.0
9-Jan-22	4:00:00	09-Jan-2204:00	68.5	61.0	61.0
9-Jan-22	4:30:00	09-Jan-2204:00	69.4	62.0	61.9
9-Jan-22	5:00:00	09-Jan-2205:00	72.0	63.1	63.5
9-Jan-22	5:30:00	09-Jan-2205:00	72.3	64.0	63.7
9-Jan-22	6:00:00	09-Jan-2206:00	72.8	64.0	64.0
9-Jan-22	6:30:00	09-Jan-2206:00	72.7	64.0	64.0
9-Jan-22	7:00:00	09-Jan-2207:00	72.7	64.0	64.0
9-Jan-22	7:30:00	09-Jan-2207:00	72.7	64.0	64.0
9-Jan-22	8:00:00	09-Jan-2208:00	73.0	64.0	64.0
9-Jan-22	8:30:00	09-Jan-2208:00	72.7	64.0	64.0
9-Jan-22	9:00:00	09-Jan-2209:00	73.0	64.0	64.0
9-Jan-22	9:30:00	09-Jan-2209:00	73.0	64.6	64.0
9-Jan-22	10:00:00	09-Jan-2210:00	73.0	64.5	64.0
9-Jan-22	10:30:00	09-Jan-2210:00	73.0	64.0	64.0
9-Jan-22	11:00:00	09-Jan-2211:00	73.0	64.5	64.3
9-Jan-22	11:30:00	09-Jan-2211:00	73.0	64.7	64.3
9-Jan-22	12:00:00	09-Jan-2212:00	73.0	64.7	65.0
9-Jan-22	12:30:00	09-Jan-2212:00	74.0	64.4	65.0
9-Jan-22	13:00:00	09-Jan-2213:00	74.0	65.0	65.0
9-Jan-22	13:30:00	09-Jan-2213:00	74.0	65.0	65.0
9-Jan-22	14:00:00	09-Jan-2214:00	74.0	65.0	65.0
9-Jan-22	14:30:00	09-Jan-2214:00	71.7	64.0	62.6
9-Jan-22	15:00:00	09-Jan-2215:00	70.0	62.4	63.0
9-Jan-22	15:30:00	09-Jan-2215:00	70.0	62.0	62.9
9-Jan-22	16:00:00	09-Jan-2216:00	70.0	62.0	62.0
9-Jan-22	16:30:00	09-Jan-2216:00	69.7	61.9	62.0
9-Jan-22	17:00:00	09-Jan-2217:00	69.0	61.3	61.2
9-Jan-22	17:30:00	09-Jan-2217:00	69.8	61.8	62.0
9-Jan-22	18:00:00	09-Jan-2218:00	72.0	63.7	63.9
9-Jan-22	18:30:00	09-Jan-2218:00	72.3	63.7	63.9
9-Jan-22	19:00:00	09-Jan-2219:00	72.3	63.6	63.9
9-Jan-22	19:30:00	09-Jan-2219:00	72.0	63.3	63.8
9-Jan-22	20:00:00	09-Jan-2220:00	72.6	63.9	64.0
9-Jan-22	20:30:00	09-Jan-2220:00	73.0	64.0	64.0
9-Jan-22	21:00:00	09-Jan-2221:00	73.0	64.0	64.0
9-Jan-22	21:30:00	09-Jan-2221:00	73.0	64.8	64.7
9-Jan-22	22:00:00	09-Jan-2222:00	73.0	65.0	65.0
9-Jan-22	22:30:00	09-Jan-2222:00	73.4	65.0	65.0
9-Jan-22	23:00:00	09-Jan-2223:00	74.0	65.0	65.0
9-Jan-22	23:30:00	09-Jan-2223:00	74.0	65.0	65.0
10-Jan-22	0:00:00	10-Jan-2200:00	74.0	65.0	65.0
10-Jan-22	0:30:00	10-Jan-2200:00	74.3	65.6	65.3
10-Jan-22	1:00:00	10-Jan-2201:00	74.0	66.0	66.0

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

10-Jan-22	1:30:00	10-Jan-2201:00	74.8	66.0	66.0
10-Jan-22	2:00:00	10-Jan-2202:00	70.6	64.6	64.7
10-Jan-22	2:30:00	10-Jan-2202:00	71.5	64.0	64.0
10-Jan-22	3:00:00	10-Jan-2203:00	71.0	63.9	63.7
10-Jan-22	3:30:00	10-Jan-2203:00	71.0	63.0	63.5
10-Jan-22	4:00:00	10-Jan-2204:00	70.4	63.0	63.0
10-Jan-22	4:30:00	10-Jan-2204:00	70.0	63.0	63.0
10-Jan-22	5:00:00	10-Jan-2205:00	70.0	62.1	62.7
10-Jan-22	5:30:00	10-Jan-2205:00	70.0	62.0	62.0
10-Jan-22	6:00:00	10-Jan-2206:00	69.8	62.0	62.0
10-Jan-22	6:30:00	10-Jan-2206:00	69.0	61.0	61.6
10-Jan-22	7:00:00	10-Jan-2207:00	69.0	61.0	61.0
10-Jan-22	7:30:00	10-Jan-2207:00	69.0	60.9	60.9
10-Jan-22	8:00:00	10-Jan-2208:00	70.6	61.2	62.6
10-Jan-22	8:30:00	10-Jan-2208:00	71.1	62.7	63.0
10-Jan-22	9:00:00	10-Jan-2209:00	72.0	63.0	63.0
10-Jan-22	9:30:00	10-Jan-2209:00	72.0	63.0	63.0
10-Jan-22	10:00:00	10-Jan-2210:00	72.0	63.0	63.3
10-Jan-22	10:30:00	10-Jan-2210:00	72.0	63.0	63.6
10-Jan-22	11:00:00	10-Jan-2211:00	72.3	63.4	63.9
10-Jan-22	11:30:00	10-Jan-2211:00	72.7	64.0	64.0
10-Jan-22	12:00:00	10-Jan-2212:00	73.0	64.0	64.0
10-Jan-22	12:30:00	10-Jan-2212:00	73.0	64.0	64.0
10-Jan-22	13:00:00	10-Jan-2213:00	73.0	64.6	64.3
10-Jan-22	13:30:00	10-Jan-2213:00	73.0	64.1	64.6
10-Jan-22	14:00:00	10-Jan-2214:00	73.0	64.7	64.8
10-Jan-22	14:30:00	10-Jan-2214:00	73.0	64.7	64.7
10-Jan-22	15:00:00	10-Jan-2215:00	73.0	64.9	64.6
10-Jan-22	15:30:00	10-Jan-2215:00	74.0	64.8	64.8
10-Jan-22	16:00:00	10-Jan-2216:00	74.0	65.0	65.0
10-Jan-22	16:30:00	10-Jan-2216:00	74.0	65.0	65.0
10-Jan-22	17:00:00	10-Jan-2217:00	74.0	65.0	65.0
10-Jan-22	17:30:00	10-Jan-2217:00	74.0	65.0	65.0
10-Jan-22	18:00:00	10-Jan-2218:00	73.8	65.0	64.5
10-Jan-22	18:30:00	10-Jan-2218:00	70.8	63.0	62.7
10-Jan-22	19:00:00	10-Jan-2219:00	70.0	62.0	62.0
10-Jan-22	19:30:00	10-Jan-2219:00	69.5	61.7	62.0
10-Jan-22	20:00:00	10-Jan-2220:00	69.0	61.3	61.6
10-Jan-22	20:30:00	10-Jan-2220:00	69.0	61.0	61.0
10-Jan-22	21:00:00	10-Jan-2221:00	70.7	61.1	61.1
10-Jan-22	21:30:00	10-Jan-2221:00	72.0	63.5	63.4
10-Jan-22	22:00:00	10-Jan-2222:00	72.0	64.0	64.0
10-Jan-22	22:30:00	10-Jan-2222:00	72.0	64.0	64.0
10-Jan-22	23:00:00	10-Jan-2223:00	72.0	64.0	64.0
10-Jan-22	23:30:00	10-Jan-2223:00	72.9	64.0	64.0
11-Jan-22	0:00:00	11-Jan-2200:00	73.0	64.0	64.0
11-Jan-22	0:30:00	11-Jan-2200:00	73.0	64.7	64.4
11-Jan-22	1:00:00	11-Jan-2201:00	73.0	65.0	65.0
11-Jan-22	1:30:00	11-Jan-2201:00	73.3	65.0	65.0
11-Jan-22	2:00:00	11-Jan-2202:00	74.0	65.0	65.0
11-Jan-22	2:30:00	11-Jan-2202:00	74.0	65.4	65.3
11-Jan-22	3:00:00	11-Jan-2203:00	74.0	66.0	66.0
11-Jan-22	3:30:00	11-Jan-2203:00	74.0	66.0	66.0
11-Jan-22	4:00:00	11-Jan-2204:00	72.2	64.3	64.1
11-Jan-22	4:30:00	11-Jan-2204:00	70.8	63.0	63.0
11-Jan-22	5:00:00	11-Jan-2205:00	70.0	62.6	62.7
11-Jan-22	5:30:00	11-Jan-2205:00	70.0	62.0	62.2
11-Jan-22	6:00:00	11-Jan-2206:00	69.1	61.9	62.0

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

11-Jan-22	6:30:00	11-Jan-2206:00	69.0	61.0	61.2
11-Jan-22	7:00:00	11-Jan-2207:00	68.1	60.3	60.2
11-Jan-22	7:30:00	11-Jan-2207:00	67.5	59.7	59.6
11-Jan-22	8:00:00	11-Jan-2208:00	67.2	59.1	59.2
11-Jan-22	8:30:00	11-Jan-2208:00	70.8	62.2	61.8
11-Jan-22	9:00:00	11-Jan-2209:00	70.9	62.0	62.0
11-Jan-22	9:30:00	11-Jan-2209:00	71.0	62.0	62.0
11-Jan-22	10:00:00	11-Jan-2210:00	71.0	62.0	62.0
11-Jan-22	10:30:00	11-Jan-2210:00	71.0	62.0	62.0
11-Jan-22	11:00:00	11-Jan-2211:00	71.0	62.3	62.0
11-Jan-22	11:30:00	11-Jan-2211:00	71.9	62.8	62.0
11-Jan-22	12:00:00	11-Jan-2212:00	71.6	62.4	62.0
11-Jan-22	12:30:00	11-Jan-2212:00	71.4	62.8	62.7
11-Jan-22	13:00:00	11-Jan-2213:00	72.0	63.0	63.0
11-Jan-22	13:30:00	11-Jan-2213:00	71.7	63.0	62.9
11-Jan-22	14:00:00	11-Jan-2214:00	72.0	63.0	62.8
11-Jan-22	14:30:00	11-Jan-2214:00	72.0	63.0	63.0
11-Jan-22	15:00:00	11-Jan-2215:00	72.0	63.0	63.0
11-Jan-22	15:30:00	11-Jan-2215:00	72.0	63.0	63.0
11-Jan-22	16:00:00	11-Jan-2216:00	72.0	63.0	63.0
11-Jan-22	16:30:00	11-Jan-2216:00	72.0	63.0	63.0
11-Jan-22	17:00:00	11-Jan-2217:00	72.0	63.0	63.0
11-Jan-22	17:30:00	11-Jan-2217:00	72.0	63.0	63.0
11-Jan-22	18:00:00	11-Jan-2218:00	71.4	63.0	63.0
11-Jan-22	18:30:00	11-Jan-2218:00	71.3	63.0	63.0
11-Jan-22	19:00:00	11-Jan-2219:00	71.2	62.1	62.4
11-Jan-22	19:30:00	11-Jan-2219:00	71.0	62.1	62.0
11-Jan-22	20:00:00	11-Jan-2220:00	71.0	62.1	62.0
11-Jan-22	20:30:00	11-Jan-2220:00	71.0	62.0	62.0
11-Jan-22	21:00:00	11-Jan-2221:00	71.0	62.0	62.0
11-Jan-22	21:30:00	11-Jan-2221:00	71.0	62.1	62.0
11-Jan-22	22:00:00	11-Jan-2222:00	71.0	62.7	62.5
11-Jan-22	22:30:00	11-Jan-2222:00	71.0	63.0	62.7
11-Jan-22	23:00:00	11-Jan-2223:00	71.0	63.0	62.7
11-Jan-22	23:30:00	11-Jan-2223:00	71.3	63.0	63.0
12-Jan-22	0:00:00	12-Jan-2200:00	71.0	63.0	63.0
12-Jan-22	0:30:00	12-Jan-2200:00	71.3	63.0	63.0
12-Jan-22	1:00:00	12-Jan-2201:00	71.7	63.0	63.0
12-Jan-22	1:30:00	12-Jan-2201:00	72.0	63.0	63.0
12-Jan-22	2:00:00	12-Jan-2202:00	72.0	63.0	63.0
12-Jan-22	2:30:00	12-Jan-2202:00	72.0	63.0	63.0
12-Jan-22	3:00:00	12-Jan-2203:00	72.0	63.0	63.0
12-Jan-22	3:30:00	12-Jan-2203:00	72.0	63.5	63.2
12-Jan-22	4:00:00	12-Jan-2204:00	72.0	63.1	63.1
12-Jan-22	4:30:00	12-Jan-2204:00	72.0	63.0	63.0
12-Jan-22	5:00:00	12-Jan-2205:00	72.0	63.0	63.0
12-Jan-22	5:30:00	12-Jan-2205:00	72.0	63.0	63.0
12-Jan-22	6:00:00	12-Jan-2206:00	72.0	63.0	63.0
12-Jan-22	6:30:00	12-Jan-2206:00	72.0	63.1	63.1
12-Jan-22	7:00:00	12-Jan-2207:00	72.5	64.0	64.0
12-Jan-22	7:30:00	12-Jan-2207:00	72.1	64.0	64.0
12-Jan-22	8:00:00	12-Jan-2208:00	72.0	63.8	64.0
12-Jan-22	8:30:00	12-Jan-2208:00	72.0	63.9	64.0
12-Jan-22	9:00:00	12-Jan-2209:00	72.0	64.0	64.0
12-Jan-22	9:30:00	12-Jan-2209:00	72.3	64.3	64.6
12-Jan-22	10:00:00	12-Jan-2210:00	72.4	64.2	64.0
12-Jan-22	10:30:00	12-Jan-2210:00	73.0	64.7	64.3
12-Jan-22	11:00:00	12-Jan-2211:00	73.0	64.7	64.7

# ENCL (3) NAVFAC SCADA Data Zone D1 28 Dec 2021 to 12 Jan 2022

12-Jan-22	11:30:00	12-Jan-2211:00	73.0	65.0	65.0
12-Jan-22	12:00:00	12-Jan-2212:00	73.0	65.0	65.0
12-Jan-22	12:30:00	12-Jan-2212:00	73.7	65.0	65.0
12-Jan-22	13:00:00	12-Jan-2213:00	74.2	65.9	65.6
12-Jan-22	13:30:00	12-Jan-2213:00	75.0	67.0	66.0
12-Jan-22	14:00:00	12-Jan-2214:00	73.6	65.0	64.8
12-Jan-22	14:30:00	12-Jan-2214:00	71.3	64.0	64.0
12-Jan-22	15:00:00	12-Jan-2215:00	71.0	64.0	64.0
12-Jan-22	15:30:00	12-Jan-2215:00	71.0	64.0	64.0
12-Jan-22	16:00:00	12-Jan-2216:00	71.0	64.0	64.0
12-Jan-22	16:30:00	12-Jan-2216:00	71.0	63.8	63.3
12-Jan-22	17:00:00	12-Jan-2217:00	71.0	63.0	63.0
12-Jan-22	17:30:00	12-Jan-2217:00	70.0	62.3	62.6
12-Jan-22	18:00:00	12-Jan-2218:00	69.2	61.7	62.0
12-Jan-22	18:30:00	12-Jan-2218:00	69.1	61.3	61.6
12-Jan-22	19:00:00	12-Jan-2219:00	72.0	63.4	63.4
12-Jan-22	19:30:00	12-Jan-2219:00	72.0	63.7	64.0
12-Jan-22	20:00:00	12-Jan-2220:00	72.0	64.0	64.0
12-Jan-22	20:30:00	12-Jan-2220:00	72.8	64.0	64.0
12-Jan-22	21:00:00	12-Jan-2221:00	73.0	64.0	64.0
12-Jan-22	21:30:00	12-Jan-2221:00	73.0	64.0	64.3
12-Jan-22	22:00:00	12-Jan-2222:00	73.9	65.0	65.0
12-Jan-22	22:30:00	12-Jan-2222:00	74.0	65.0	65.0
12-Jan-22	23:00:00	12-Jan-2223:00	74.0	65.1	65.1
12-Jan-22	23:30:00	12-Jan-2223:00	74.0	66.0	66.0

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-ABEN3327	D1-BENO3330	D1-BENO3330	D1-BLDG0930	D1-BLDG0930	D1-BLDG1314	D1-BLDGD1-22	D1-BLDGD1-22
Location Type:	Residence	Residence	Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	3327A Benoit Place	3330 Benoit Place	3330 Benoit Place	Building 930,CHILD DEVELOPMENT CENTER (HALE MOKU)	Building 930,CHILD DEVELOPMENT CENTER (HALE MOKU)	Building 1314,CLUB PEARL, 915 N Rd	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY
Field Sample ID:	220109-D1-BT04	220110-D1-BT01	220110-D1-BT03	220109-D1-FT05	220109-D1-FT06	220110-D1-ET12	220109-D1-ET01	220109-D1-ET02
Sample Date:	2022-01-09	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09
Sample Type:	N	N	FD	N	N	N	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	180 U	190 U	180 U	190 U	180 U	190 U	180 U	180 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 UJ	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 U	100 U	100 U	100 U	100 U	100 UJ	100 U	100 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Barium	220	220	2000	2000	2.00	1.90 J	1.90 J	2.30	2.30	1.90 J	2.00	2.00
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	1.90 J	2.00	1.90 J	2.00	1.90 J	2.30	2.00	2.10
Copper	2.9	2.9	1300	1300	22.0	27.0	27.0	20.0	13.0	21.0	200	210
Lead	15	5.6	15	15	0.140 J	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.190 J	0.590
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.250 U	0.240 U	0.240 U	0.240 U	0.250 U	0.250 UJ	0.240 U	0.240 U



Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-BLDGD1-22	D1-BLDGD1-22	D1-BLDGD1-22	D1-BORL3322	D1-BOTH0401	D1-BOTH0409	D1-CCRU3346	D1-CHRI0320
Location Type:	Non-Residence	Non-Residence	Non-Residence	Residence	Residence	Residence	Residence	Residence
Residence:	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY	3322 Orlando Place	401 Bothne Court	409 Bothne Court	3346 Cruse Place	320 Christopher Court
Field Sample ID:	220109-D1-ET03	220109-D1-ET04	220109-D1-FT04	220110-D1-GT01	220109-D1-GT07	220109-D1-AT03	220110-D1-CT01	220110-D1-AT08
Sample Date:	2022-01-09	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N	N	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.260 J	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	180 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Barium	220	220	2000	2000	2.30	1.90 J	2.20	2.00	1.90 J	1.80 J	1.80 J	2.10
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	2.00	2.20	2.00	2.00	2.20	2.10	1.90 J	2.00
Copper	2.9	2.9	1300	1300	79.0	120	150	42.0	140	68.0	27.0	83.0
Lead	15	5.6	15	15	0.240 J	0.280 J	0.470 J	0.130 U	0.250 J	0.130 U	0.130 U	0.280 J
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0620 J	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.250 U	0.250 U	0.250 U	0.240 U	0.250 U	0.240 U	0.240 U	0.240 U

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
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Location ID:	D1-CSTO3316	D1-DUNL0207	D1-E2ND0930	D1-E2ND0930	D1-EOUT1005	D1-EOUT1005	D1-EOUT1006	D1-EOUT1007
Location Type:	Residence	Residence	Child Development Center	Child Development Center	Residence	Residence	Residence	Residence
Residence:	3316C Stommes Place	207 Dunlap Court	5204 Ashley Avenue	5204 Ashley Avenue	1005 East Outerbridge Court	1005 East Outerbridge Court	1006 East Outerbridge Court	1007 East Outerbridge Court
Field Sample ID:	220110-D1-CT13	220109-D1-GT05	220109-D1-DT03	220109-D1-DT06	220129D1GT01	220130D1FT03	220110-D1-ET03	220110-D1-CT10
Sample Date:	2022-01-10	2022-01-09	2022-01-09	2022-01-09	2022-01-29	2022-01-30	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N	N	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: C22A062_DP	SDG: C22A070_DP	SDG: DA40762	SDG: DA40816
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.200 U	0.200 U	1.90	1.53	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA41377A	SDG: 580-109791-1	SDG: DA40762	SDG: DA40816
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	180 U	180 U	190 U	190 U	92.0 U	180 U	268
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 UJ	40.0 U	40.0 U	40.0 U	40.0 U	31.0 U	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 UJ	240 U	100 U	100 U	190 U	180 U	100 U	237 J

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0250 U	0.0900 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.100 U	0.120 J	0.100 U	0.100 U	0.210 U	0.100 U	0.100 U
Arsenic	10	10	10	10	2.00 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.610 J
Barium	220	220	2000	2000	2.10	1.80 J	2.00	1.90 J	1.80 J	1.70	1.90 J	1.90 J
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.0700 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.120 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	2.30	2.00	2.10	2.10	1.30 J	1.40 J	2.10	2.50
Copper	2.9	2.9	1300	1300	25.0	130	180	220	58.7	64.6	35.0	50.0
Lead	15	5.6	15	15	0.130 U	0.130 U	0.380 J	0.340 J	0.130 U	0.220 U	0.130 U	0.130 U
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	1.10	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0500 U	0.0670 J	0.0500 U	0.500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.240 UJ	0.250 U	0.250 U	0.250 U	0.240 U	0.170 U	0.240 U	0.240 U

Residential Sampling Report for Flushing Zone  
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Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-EOUT1007	D1-EOUT1007	D1-EOUT1009	D1-EOUT1010	D1-EOUT1018	D1-FISL1810	D1-GOMB1411	D1-GRAH0505
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1007 East Outerbridge Court	1007 East Outerbridge Court	1009 East Outerbridge Court	1010 East Outerbridge Court	1018 East Outerbridge Court	1810 Fisler Court	1411 Gombasy Court	505 Graham Court
Field Sample ID:	220129D1HT01	220130D1HT01	220110-D1-DT06	220110-D1-ET04	220109-D1-FT07	220109-D1-GT01	220110-D1-FT16	220109-D1-DT08
Sample Date:	2022-01-29	2022-01-30	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09
Sample Type:	N	N	N	N	N	N	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A062_DP	SDG: C22A070_DP	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	3.87	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 580-109791-1	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	91.0 U	180 U	190 U	190 U	190 U	190 U	180 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	31.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 UJ	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 U	180 U	100 U	190 U	100 U	100 U	100 UJ	100 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 810-13442-1	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0250 U	0.0560 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 810-13442-1	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.0570 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.890 U	0.500 U	0.500 U	0.500 U	0.500 U	2.00 U	0.500 U
Barium	220	220	2000	2000	1.90 J	1.90 J	1.90 J	1.90 J	1.90 J	1.90 J	1.90 J	1.80 J
Beryllium	0.66	0.66	4	4	0.150 U	0.0830 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.140 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	1.20 J	1.80	2.10	2.00	2.10	2.40	2.50	1.90 J
Copper	2.9	2.9	1300	1300	55.2	46.0	91.0	80.0	42.0	89.0	35.0	27.0
Lead	15	5.6	15	15	0.130 U	0.130 J	0.460 J	0.170 J	0.130 U	0.240 J	0.130 J	0.130 J
Selenium	5	5	50	50	0.300 U	1.60 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.160 U	0.0500 U	0.0640 J	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 810-13442-1	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.0200 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 UJ	0.250 U

Residential Sampling Report for Flushing Zone  
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Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-HOOP3303F	D1-HUTT0905	D1-HUTT0914	D1-HUTT0914	D1-HUTT0921	D1-KAUF1507	D1-LARS1904	D1-LEAL3332
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3303F Hooper Place	905 Huttenberg Court	914 Huttenberg Court	914 Huttenberg Court	921 Huttenberg Court	1507 Kaufman Court	1904 Larson Court	3332 Leal Place
Field Sample ID:	220110-D1-ET02	220110-D1-AT10	220109-D1-CT05	220109-D1-CT07	220110-D1-GT07	220109-D1-GT03	220109-D1-DT01	220110-D1-FT10
Sample Date:	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09	2022-01-10
Sample Type:	N	N	N	FD	N	N	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	190 U	200 U	190 U	190 U	190 U	190 U	180 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 U	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Barium	220	220	2000	2000	3.50	1.90 J	1.80 J	1.90 J	1.90 J	1.80 J	1.80 J	2.00
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	2.10	2.20	2.20	2.10	2.30	2.10	2.20	2.00
Copper	2.9	2.9	1300	1300	9.30	110	91.0	76.0	95.0	97.0	17.0	38.0
Lead	15	5.6	15	15	0.160 J	0.450 J	0.460 J	0.510	0.130 U	0.130 U	0.130 U	0.190 J
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 U

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
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Location ID:	D1-LEAL3333	D1-LEAL3335	D1-MCMU1300	D1-MCMU1303	D1-MCMU1312	D1-MCMU1318	D1-MCMU1318	D1-MEAD1204
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3333 Leal Place	3335 Leal Place	1300 McMurtry Court	1303 McMurtry Court	1312 McMurtry Court	1318 McMurtry Court	1318 McMurtry Court	1204 Mead Place
Field Sample ID:	220110-D1-FT07	220110-D1-ET05	220110-D1-AT01	220109-D1-AT01	220109-D1-ET09	220110-D1-AT04	220110-D1-AT06	220109-D1-DT11
Sample Date:	2022-01-10	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-09
Sample Type:	N	N	N	N	N	N	FD	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 U	190 U	190 U	180 U	180 U	180 U	180 U	180 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.620 J	0.500 U	0.500 U	0.500 U	0.500 U	0.510 J	0.500 U
Barium	220	220	2000	2000	1.90 J	1.90 J	2.30	1.90 J	1.90 J	1.80 J	1.90 J	1.90 J
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	2.10	2.40	2.20	2.20	2.00	2.10	2.10	2.10
Copper	2.9	2.9	1300	1300	18.0	34.0	72.0	45.0	39.0	100	71.0	38.0
Lead	15	5.6	15	15	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.140 J
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 U	0.240 U	0.240 U

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-MEAD1204	D1-MEAD1204	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1204 Mead Place	1204 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place
Field Sample ID:	220129D1GT02	220130D1FT04	220109-D1-CT01	220111-D1-CT01	220129D1HT02	220130D1HT02	D1-TW-0000895-22045-N-R1	D1-TW-0000895-22045-N-R2	
Sample Date:	2022-01-29	2022-01-30	2022-01-09	2022-01-11	2022-01-29	2022-01-30	2022-02-14	2022-02-14	
Sample Type:	N	N	N	N (72 Hour Stagnation)	N	N	N	N	

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A062_DP	SDG: C22A070_DP	SDG: DA40762	SDG: DA40816AR_rev1	SDG: C22A062_DP	SDG: C22A070_DP	SDG: DA41923	SDG: DA41923
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	1.55	0.200 U	0.200 U	0.200 U	14.5	0.200 U	0.640

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 580-109791-1	SDG: DA40762	SDG: DA40816AR_rev1	SDG: DA41377A	SDG: 580-109791-1	SDG: DA41923	SDG: DA41923
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 UJ	92.0 U	190 U	190 UJ	190 U	92.0 U	52.0 U	82.2 J
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	31.0 U	40.0 U	40.0 UJ	40.0 U	31.0 U	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	190 UJ	180 U	100 U	100 U	190 U	180 U	52.0 U	52.0 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816AR_rev1	SDG: DA41377A	SDG: 810-13442-1		
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0250 U	0.0900 U	0.0500 U	0.0500 U	0.0250 U	0.0620 J	--	--

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816AR_rev1	SDG: DA41377A	SDG: 810-13442-1		
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.210 U	0.100 U	0.100 U	0.100 U	0.0570 U	--	--
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.890 U	--	--
Barium	220	220	2000	2000	1.90 J	1.80	2.00	1.90 J	1.90 J	1.90 J	--	--
Beryllium	0.66	0.66	4	4	0.150 U	0.0700 U	0.150 U	0.150 U	0.150 U	0.0830 U	--	--
Cadmium	3	3	5	5	0.0500 U	0.120 U	0.0500 U	0.0500 U	0.0500 U	0.140 U	--	--
Chromium	11	11	100	100	1.30 J	1.50 J	2.00	2.40	1.30 J	1.80	--	--
Copper	2.9	2.9	1300	1300	27.5	20.2	230	66.0	107	78.0	--	--
Lead	15	5.6	15	15	0.130 U	0.220 U	0.130 J	0.510	0.140 J	0.190 J	--	--
Selenium	5	5	50	50	0.300 U	1.10	0.300 U	0.300 U	0.300 U	1.60 U	--	--
Thallium	2	2	2	2	0.0500 U	0.500 U	0.0500 U	0.0500 U	0.0500 U	0.160 U	--	--

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816AR_rev1	SDG: DA41377A	SDG: 810-13442-1		
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.170 U	0.250 U	0.250 UJ	0.250 U	0.0200 U	--	--



Residential Sampling Report for Flushing Zone  
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Location ID:	D1-MEAD1206	D1-MEAD1206	D1-POWE3336	D1-SING0126	D1-SING0126	D1-SMIT3341	D1-SMIT3342	D1-SMIT3342
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1206 Mead Place	1206 Mead Place	3336 Powell Loop Apt C	126 Singleton Court	126 Singleton Court	3341 Smith Circle	3342 Smith Circle	3342 Smith Circle
Field Sample ID:	D1-TW-0000895-22045-N-R3	D1-TW-0000895-22045-N-R4	220110-D1-DT01	220109-D1-CT11	220111-D1-DT04	220110-D1-DT08	220110-D1-GT03	220110-D1-GT05
Sample Date:	2022-02-15	2022-02-15	2022-01-10	2022-01-09	2022-01-11	2022-01-10	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N (72 Hour Stagnation)	N	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41992	SDG: DA41992	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40816	SDG: DA40816	SDG: DA40816
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.560	0.240 J	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41992	SDG: DA41992	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40816	SDG: DA40816	SDG: DA40816
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	52.0 U	52.0 U	190 U	180 U	190 U	190 U	190 U	190 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	40.0 U	40.0 U	40.0 UJ	40.0 U	40.0 U	40.0 UJ
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	52.0 U	52.0 U	100 U	100 U	100 UJ	100 UJ	100 UJ	100 UJ

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40816	SDG: DA40816	SDG: DA40816
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	--	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40816	SDG: DA40816	SDG: DA40816
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	--	--	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	--	--	0.500 U	0.500 U	0.850 J	0.500 U	0.630 J	0.810 J
Barium	220	220	2000	2000	--	--	1.80 J	2.00	1.80 J	1.90 J	1.90 J	1.90 J
Beryllium	0.66	0.66	4	4	--	--	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	--	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	--	--	2.00	2.10	2.40	2.30	2.20	2.50
Copper	2.9	2.9	1300	1300	--	--	19.0	88.0	51.0	9.30	18.0	89.0
Lead	15	5.6	15	15	--	--	0.160 J	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U
Selenium	5	5	50	50	--	--	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	--	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40816	SDG: DA40816	SDG: DA40816
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	--	--	0.240 U	0.250 U	0.240 UJ	0.240 UJ	0.240 U	0.240 UJ

Residential Sampling Report for Flushing Zone  
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Chemistry Results  
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Location ID:	D1-SMIT3344	D1-SMIT3344	D1-SMIT3344	D1-STOM3318	D1-TAUS1601	D1-TAUS1601	D1-TAUS1604	D1-TEAG3315
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3344 Smith Circle	3344 Smith Circle	3344 Smith Circle	3318 Stommes Place	1601 Taussig Court	1601 Taussig Court	1604 Taussig Court	3315 Teague Place
Field Sample ID:	220109-D1-AT05	220109-D1-AT06	220110-D1-BT04	220110-D1-BT06	220109-D1-CT03	220111-D1-DT01	220109-D1-ET05	220110-D1-FT04
Sample Date:	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-09	2022-01-11	2022-01-09	2022-01-10
Sample Type:	N	FD	N	N	N	N (72 Hour Stagnation)	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	180 U	190 U	180 U	190 U	190 U	190 UJ	180 U	180 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 U	100 U	100 U	100 U	100 U	100 UJ	100 U	100 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Barium	220	220	2000	2000	1.90 J	2.00	1.80 J	2.10	1.90 J	2.00	1.90 J	1.90 J
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	1.90 J	2.10	1.90 J	2.10	1.90 J	2.00 U	2.00	2.00
Copper	2.9	2.9	1300	1300	16.0	13.0	43.0	32.0	87.0	50.0	52.0	35.0
Lead	15	5.6	15	15	0.820 J	0.130 UJ	0.420 J	0.130 U	0.260 J	0.190 J	0.130 U	0.130 U
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.250 U	0.250 U	0.240 U	0.250 U	0.250 U	0.240 U	0.250 U	0.240 U

Residential Sampling Report for Flushing Zone  
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Chemistry Results  
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Location ID:	D1-THAT0613	D1-THAT0613	D1-VALD3306	D1-VALD3307	D1-WAGO1706	D1-WAGO1706	D1-WAGO1710	D1-WOUT1108
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	613 Thatcher Court	613 Thatcher Court	3306 Valdez Place	3307 Valdez Place	1706 Wagoner Court	1706 Wagoner Court	1710 Wagoner Court	1108 West Outerbridge Court
Field Sample ID:	220109-D1-BT06	220109-D1-BT08	220110-D1-ET01	220110-D1-BT08	220110-D1-CT04	220110-D1-CT07	220109-D1-CT09	220110-D1-FT13
Sample Date:	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-10	2022-01-10	2022-01-09	2022-01-10
Sample Type:	N	N	N	N	N	FD	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816
GENCHEM (mg/L)	Incident Specific Parameters											
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816
HC (µg/L)	Incident Specific Parameters											
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	180 U	180 U	180 U	180 U	190 U	190 U	180 U	190 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 U	40.0 UJ
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 U	100 U	100 U	100 U	100 U	100 U	100 U	192 J

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816
HG (µg/L)	Incident Specific Parameters											
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816
METAL (µg/L)	Incident Specific Parameters											
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	2.00 U
Barium	220	220	2000	2000	1.90 J	1.90 J	2.70	2.70	1.90 J	1.90 J	1.90 J	2.20
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	2.10	2.00	2.10	2.10	2.10	2.10	1.90 J	2.40
Copper	2.9	2.9	1300	1300	25.0	25.0	18.0	16.0	65.0	65.0	81.0	200
Lead	15	5.6	15	15	0.130 U	0.130 U	0.130 U	0.160 J	0.130 U	0.130 U	0.130 U	0.240 J
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0500 U	0.0620 J	0.0500 U	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816
SVOC (µg/L)	Incident Specific Parameters											
1-Methylnaphthalene	2.1	10	None	None	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.250 U	0.240 UJ

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
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Location ID:	D1-WOUT1115	D1-WTEA0811	D1-WTEA0814
Location Type:	Residence	Residence	Residence
Residence:	1115 West Outerbridge Court	811 West Teaff Court	814 West Teaff Court
Field Sample ID:	220110-D1-DT10	220110-D1-DT04	220109-D1-BT01
Sample Date:	2022-01-10	2022-01-10	2022-01-09
Sample Type:	N	N	N

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762
GENCHEM (mg/L)	Incident Specific Parameters						
Total Organic Carbon	2	None	None	None	0.200 U	0.200 U	0.200 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762
HC (µg/L)	Incident Specific Parameters						
Petroleum Hydrocarbons (as Diesel)	200	400	None	None	190 UJ	190 U	190 U
Petroleum Hydrocarbons (as Gasoline)	200	300	None	None	40.0 UJ	40.0 U	40.0 U
Petroleum Hydrocarbons (as Motor Oil)	200	500	None	None	100 UJ	100 U	100 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762
HG (µg/L)	Incident Specific Parameters						
Mercury	0.025	0.025	2	2	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762
METAL (µg/L)	Incident Specific Parameters						
Antimony	6	6	6	6	0.100 U	0.100 U	0.100 U
Arsenic	10	10	10	10	0.910 J	0.500 U	0.500 U
Barium	220	220	2000	2000	1.80 J	1.90 J	1.90 J
Beryllium	0.66	0.66	4	4	0.150 U	0.150 U	0.150 U
Cadmium	3	3	5	5	0.0500 U	0.0500 U	0.0500 U
Chromium	11	11	100	100	2.40	2.10	2.00
Copper	2.9	2.9	1300	1300	49.0	63.0	130
Lead	15	5.6	15	15	0.160 J	0.200 J	0.130 U
Selenium	5	5	50	50	0.300 U	0.300 U	0.300 U
Thallium	2	2	2	2	0.0500 U	0.0500 U	0.0500 U

		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762
SVOC (µg/L)	Incident Specific Parameters						
1-Methylnaphthalene	2.1	10	None	None	0.240 UJ	0.240 U	0.250 U

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-ABEN3327	D1-BENO3330	D1-BENO3330	D1-BLDG0930	D1-BLDG0930	D1-BLDG1314	D1-BLDGD1-22	D1-BLDGD1-22
Location Type:	Residence	Residence	Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	3327A Benoit Place	3330 Benoit Place	3330 Benoit Place	Building 930,CHILD DEVELOPMENT CENTER (HALE MOKU)	Building 930,CHILD DEVELOPMENT CENTER (HALE MOKU)	Building 1314,CLUB PEARL, 915 N Rd	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY
Field Sample ID:	220109-D1-BT04	220110-D1-BT01	220110-D1-BT03	220109-D1-FT05	220109-D1-FT06	220110-D1-ET12	220109-D1-ET01	220109-D1-ET02
Sample Date:	2022-01-09	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09
Sample Type:	N	N	FD	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
2-Methylnaphthalene	4.7	10	None	None	0.250 U	0.240 U	0.240 U	0.240 U	0.250 U	0.250 UJ	0.240 U	0.240 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00980 U	0.00950 U	0.00950 U	0.00980 U	0.00980 U	0.00990 U	0.00960 U	0.00950 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.380 U	0.380 U	0.390 U	0.390 U	0.400 U	0.380 U	0.380 U
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 UJ	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.250 U	0.240 U	0.240 U	0.240 U	0.250 U	0.250 UJ	0.240 U	0.240 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethane	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U

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Location ID:	D1-BLDGD1-22	D1-BLDGD1-22	D1-BLDGD1-22	D1-BORL3322	D1-BOTH0401	D1-BOTH0409	D1-CCRU3346	D1-CHRI0320
Location Type:	Non-Residence	Non-Residence	Non-Residence	Residence	Residence	Residence	Residence	Residence
Residence:	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY	3322 Orlando Place	401 Bothne Court	409 Bothne Court	3346 Cruse Place	320 Christopher Court
Field Sample ID:	220109-D1-ET03	220109-D1-ET04	220109-D1-FT04	220110-D1-GT01	220109-D1-GT07	220109-D1-AT03	220110-D1-CT01	220110-D1-AT08
Sample Date:	2022-01-09	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
2-Methylnaphthalene	4.7	10	None	None	0.250 U	0.250 U	0.250 U	0.240 U	0.250 U	0.240 U	0.240 U	0.240 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00990 U	0.00980 U	0.00980 U	0.00950 U	0.00980 U	0.00960 U	0.00960 U	0.00960 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.390 U	0.390 U	0.380 U	0.470 J	0.380 U	0.380 U	1.90
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.250 U	0.250 U	0.250 U	0.240 U	0.250 U	0.240 U	0.240 U	0.240 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethane	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U



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Location ID:	D1-CSTO3316	D1-DUNL0207	D1-E2ND0930	D1-E2ND0930	D1-EOUT1005	D1-EOUT1005	D1-EOUT1006	D1-EOUT1007
Location Type:	Residence	Residence	Child Development Center	Child Development Center	Residence	Residence	Residence	Residence
Residence:	3316C Stommes Place	207 Dunlap Court	5204 Ashley Avenue	5204 Ashley Avenue	1005 East Outerbridge Court	1005 East Outerbridge Court	1006 East Outerbridge Court	1007 East Outerbridge Court
Field Sample ID:	220110-D1-CT13	220109-D1-GT05	220109-D1-DT03	220109-D1-DT06	220129D1GT01	220130D1FT03	220110-D1-ET03	220110-D1-CT10
Sample Date:	2022-01-10	2022-01-09	2022-01-09	2022-01-09	2022-01-29	2022-01-30	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816
2-Methylnaphthalene	4.7	10	None	None	0.240 UJ	0.250 U	0.250 U	0.250 U	0.240 U	0.180 U	0.240 U	0.240 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00970 U	0.00980 U	0.00980 U	0.00990 U	0.00950 U	0.0190 U	0.00960 U	0.00950 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.390 U	0.390 U	0.400 U	0.570 U	0.470 U	0.380 U	0.380 U
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 UJ	0.0200 U	0.0200 U	0.0200 U	--	--	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U	0.0400 U	--	--	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.240 UJ	0.250 U	0.250 U	0.250 U	0.240 U	0.170 U	0.240 U	0.240 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A005	SDG: C22A062_DP	SDG: C22A070_DP	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethane	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0700 J	0.0570 U	0.0700 J	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U

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Location ID:	D1-EOUT1007	D1-EOUT1007	D1-EOUT1009	D1-EOUT1010	D1-EOUT1018	D1-FISL1810	D1-GOMB1411	D1-GRAH0505
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1007 East Outerbridge Court	1007 East Outerbridge Court	1009 East Outerbridge Court	1010 East Outerbridge Court	1018 East Outerbridge Court	1810 Fisler Court	1411 Gombasy Court	505 Graham Court
Field Sample ID:	220129D1HT01	220130D1HT01	220110-D1-DT06	220110-D1-ET04	220109-D1-FT07	220109-D1-GT01	220110-D1-FT16	220109-D1-DT08
Sample Date:	2022-01-29	2022-01-30	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09
Sample Type:	N	N	N	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 810-13442-1	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.0200 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 UJ	0.250 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00950 U	0.00980 U	0.00960 U	0.00960 U	0.00980 U	0.00980 U	0.00960 U	0.00990 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.570 U	0.590 U	0.380 U	0.380 U	0.390 U	0.390 U	0.380 J	0.390 U
Hexachlorobenzene	0.0003	0.0003	1	1	--	--	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 UJ	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	--	--	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.240 U	0.0200 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 UJ	0.250 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A062_DP	SDG: C22A070_DP	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethene	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U

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Location ID:	D1-HOOP3303F	D1-HUTT0905	D1-HUTT0914	D1-HUTT0914	D1-HUTT0921	D1-KAUF1507	D1-LARS1904	D1-LEAL3332
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3303F Hooper Place	905 Huttenberg Court	914 Huttenberg Court	914 Huttenberg Court	921 Huttenberg Court	1507 Kaufman Court	1904 Larson Court	3332 Leal Place
Field Sample ID:	220110-D1-ET02	220110-D1-AT10	220109-D1-CT05	220109-D1-CT07	220110-D1-GT07	220109-D1-GT03	220109-D1-DT01	220110-D1-FT10
Sample Date:	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09	2022-01-10
Sample Type:	N	N	N	FD	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00970 U	0.00970 U	0.00960 U	0.00970 U	0.00950 U	0.0100 U	0.00980 U	0.00950 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.390 U	0.440 J	1.90	0.610	0.380 U	0.930	0.730	0.380 U
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethane	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0700 J	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U

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Location ID:	D1-LEAL3333	D1-LEAL3335	D1-MCMU1300	D1-MCMU1303	D1-MCMU1312	D1-MCMU1318	D1-MCMU1318	D1-MCMU1318	D1-MEAD1204
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3333 Leal Place	3335 Leal Place	1300 McMurtry Court	1303 McMurtry Court	1312 McMurtry Court	1318 McMurtry Court	1318 McMurtry Court	1318 McMurtry Court	1204 Mead Place
Field Sample ID:	220110-D1-FT07	220110-D1-ET05	220110-D1-AT01	220109-D1-AT01	220109-D1-ET09	220110-D1-AT04	220110-D1-AT06	220109-D1-DT11	
Sample Date:	2022-01-10	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-09	
Sample Type:	N	N	N	N	N	N	FD	N	

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 U	0.240 U	0.240 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00950 U	0.00970 U	0.00960 U	0.0100 U	0.00980 U	0.00960 U	0.00960 U	0.00960 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.380 U	0.390 U	0.680	0.530 J	0.390 U	0.380 U	0.380 U	0.380 U
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.240 U	0.240 U	0.240 U	0.250 U	0.250 U	0.240 U	0.240 U	0.240 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethene	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U

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Location ID:	D1-MEAD1204	D1-MEAD1204	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1204 Mead Place	1204 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place
Field Sample ID:	220129D1GT02	220130D1FT04	220109-D1-CT01	220111-D1-CT01	220129D1HT02	220130D1HT02	D1-TW-0000895-22045-N-R1	D1-TW-0000895-22045-N-R2	
Sample Date:	2022-01-29	2022-01-30	2022-01-09	2022-01-11	2022-01-29	2022-01-30	2022-02-14	2022-02-14	
Sample Type:	N	N	N	N (72 Hour Stagnation)	N	N	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA41377A	SDG: 35693537	SDG: DA40762	SDG: DA40816AR_rev1	SDG: DA41377A	SDG: 810-13442-1		
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.180 U	0.250 U	0.250 UJ	0.250 U	0.0200 U	--	--
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00950 U	0.0190 U	0.00980 U	0.0100 U	0.00980 U	0.00980 U	--	--
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.570 U	0.460 U	0.820	6.30 J	1.80 U	0.590 U	--	--
Hexachlorobenzene	0.0003	0.0003	1	1	--	--	0.0200 U	0.0200 U	--	--	--	--
Hexachlorocyclopentadiene	50	None	50	50	--	--	0.0400 U	0.0400 U	--	--	--	--
Naphthalene	12	17	None	None	0.240 U	0.170 U	0.250 U	0.250 UJ	0.250 U	0.0200 U	--	--

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A062_DP	SDG: C22A070_DP	SDG: C22A005	SDG: C22A009	SDG: C22A062_DP	SDG: C22A070_DP		
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	--	--
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	--	--
1,1-Dichloroethene	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	--	--
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	--	--
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	--	--
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	--	--
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	--	--
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	--	--
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	--	--
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	--	--
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	--	--
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	--	--
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	--	--
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	--	--
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	--	--
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	--	--
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	--	--
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	--	--
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	--	--
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	--	--
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	--	--
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	--	--

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Location ID:	D1-MEAD1206	D1-MEAD1206	D1-POWE3336	D1-SING0126	D1-SING0126	D1-SMIT3341	D1-SMIT3342	D1-SMIT3342
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1206 Mead Place	1206 Mead Place	3336 Powell Loop Apt C	126 Singleton Court	126 Singleton Court	3341 Smith Circle	3342 Smith Circle	3342 Smith Circle
Field Sample ID:	D1-TW-0000895-22045-N-R3	D1-TW-0000895-22045-N-R4	220110-D1-DT01	220109-D1-CT11	220111-D1-DT04	220110-D1-DT08	220110-D1-GT03	220110-D1-GT05
Sample Date:	2022-02-15	2022-02-15	2022-01-10	2022-01-09	2022-01-11	2022-01-10	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N (72 Hour Stagnation)	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40816	SDG: DA40816	SDG: DA40816
2-Methylnaphthalene	4.7	10	None	None	--	--	0.240 U	0.250 U	0.240 UJ	0.240 UJ	0.240 U	0.240 UJ
Benzo(a)pyrene	0.06	0.06	0.2	0.2	--	--	0.00950 U	0.00990 U	0.00960 U	0.00950 U	0.00950 U	0.00970 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	--	--	0.380 U	0.400 U	0.380 U	0.380 U	0.380 U	0.390 U
Hexachlorobenzene	0.0003	0.0003	1	1	--	--	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	--	--	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	--	--	0.240 U	0.250 U	0.240 UJ	0.240 UJ	0.240 U	0.240 UJ

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A009	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554
1,1,1-Trichloroethane	11	11	200	200	--	--	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	--	--	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethene	7	7	7	7	--	--	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	--	--	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	--	--	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	--	--	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	--	--	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	--	--	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	--	--	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	--	--	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	--	--	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	--	--	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	--	--	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	--	--	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	--	--	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	--	--	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	--	--	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	--	--	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	--	--	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	--	--	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	--	--	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	--	--	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U



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Location ID:	D1-SMIT3344	D1-SMIT3344	D1-SMIT3344	D1-STOM3318	D1-TAUS1601	D1-TAUS1601	D1-TAUS1604	D1-TEAG3315
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3344 Smith Circle	3344 Smith Circle	3344 Smith Circle	3318 Stommes Place	1601 Taussig Court	1601 Taussig Court	1604 Taussig Court	3315 Teague Place
Field Sample ID:	220109-D1-AT05	220109-D1-AT06	220110-D1-BT04	220110-D1-BT06	220109-D1-CT03	220111-D1-DT01	220109-D1-ET05	220110-D1-FT04
Sample Date:	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-09	2022-01-11	2022-01-09	2022-01-10
Sample Type:	N	FD	N	N	N	N (72 Hour Stagnation)	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816	SDG: DA40762	SDG: DA40762
2-Methylnaphthalene	4.7	10	None	None	0.250 U	0.250 U	0.240 U	0.250 U	0.250 U	0.240 U	0.250 U	0.240 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00980 U	0.00980 U	0.00950 U	0.00980 U	0.0100 UJ	0.00960 U	0.00990 U	0.00950 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.920	1.10	0.380 U	0.390 U	2.20 J	0.400 U	0.400 U	0.380 U
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.250 U	0.250 U	0.240 U	0.250 U	0.250 U	0.240 U	0.250 U	0.240 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A009	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethane	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U

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Location ID:	D1-THAT0613	D1-THAT0613	D1-VALD3306	D1-VALD3307	D1-WAGO1706	D1-WAGO1706	D1-WAGO1710	D1-WOUT1108
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	613 Thatcher Court	613 Thatcher Court	3306 Valdez Place	3307 Valdez Place	1706 Wagoner Court	1706 Wagoner Court	1710 Wagoner Court	1108 West Outerbridge Court
Field Sample ID:	220109-D1-BT06	220109-D1-BT08	220110-D1-ET01	220110-D1-BT08	220110-D1-CT04	220110-D1-CT07	220109-D1-CT09	220110-D1-FT13
Sample Date:	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-10	2022-01-10	2022-01-09	2022-01-10
Sample Type:	N	N	N	N	N	FD	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40762	SDG: DA40816
2-Methylnaphthalene	4.7	10	None	None	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.250 U	0.240 UJ
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00950 U	0.00960 UJ	0.0300	0.00950 U	0.00960 U	0.00950 U	0.0100 U	0.00960 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.380 U	0.380 U	0.380 U	0.380 U	0.380 U	0.460 J	0.400 U	0.550 J
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.240 U	0.250 U	0.240 UJ

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U	0.288 U
1,1-Dichloroethane	7	7	7	7	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U	0.611 U

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Location ID:	D1-WOUT1115	D1-WTEA0811	D1-WTEA0814
Location Type:	Residence	Residence	Residence
Residence:	1115 West Outerbridge Court	811 West Teaff Court	814 West Teaff Court
Field Sample ID:	220110-D1-DT10	220110-D1-DT04	220109-D1-BT01
Sample Date:	2022-01-10	2022-01-10	2022-01-09
Sample Type:	N	N	N

SVOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: DA40816	SDG: DA40762	SDG: DA40762
2-Methylnaphthalene	4.7	10	None	None	0.240 UJ	0.240 U	0.250 U
Benzo(a)pyrene	0.06	0.06	0.2	0.2	0.00960 U	0.00950 U	0.00980 U
Bis(2-ethylhexyl)phthalate	3	3	6	6	0.380 U	0.660	2.30
Hexachlorobenzene	0.0003	0.0003	1	1	0.0200 U	0.0200 U	0.0200 U
Hexachlorocyclopentadiene	50	None	50	50	0.0400 U	0.0400 U	0.0400 U
Naphthalene	12	17	None	None	0.240 UJ	0.240 U	0.250 U

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005
1,1,1-Trichloroethane	11	11	200	200	0.119 U	0.119 U	0.119 U
1,1,2-Trichloroethane	5	5	3	5	0.288 U	0.288 U	0.288 U
1,1-Dichloroethene	7	7	7	7	0.128 U	0.128 U	0.128 U
1,2,4-Trichlorobenzene	70	70	70	70	0.318 U	0.318 U	0.318 U
1,2-Dichlorobenzene	10	10	600	600	0.272 U	0.272 U	0.272 U
1,2-Dichloroethane	5	5	5	5	0.0884 U	0.0884 U	0.0884 U
1,2-Dichloropropane	5	5	5	5	0.129 U	0.129 U	0.129 U
1,4-Dichlorobenzene	5	5	75	None	0.245 U	0.245 U	0.245 U
Benzene	5	5	5	5	0.0846 U	0.0846 U	0.0846 U
Carbon Tetrachloride	5	5	5	5	0.165 U	0.165 U	0.165 U
Chlorobenzene	25	25	100	100	0.146 U	0.146 U	0.146 U
cis-1,2-Dichloroethene	70	70	70	70	0.0570 U	0.0570 U	0.0570 U
Ethylbenzene	700	7.3	700	700	0.141 U	0.141 U	0.141 U
m,p-Xylene	10000	13	None	None	0.317 U	0.317 U	0.317 U
Methylene chloride	5	5	5	5	2.15 U	2.15 U	2.15 U
o-Xylene	10000	13	None	None	0.157 U	0.157 U	0.157 U
Styrene	10	10	100	100	0.224 U	0.224 U	0.224 U
Tetrachloroethene (PCE)	5	5	5	5	0.125 U	0.125 U	0.125 U
Toluene	1000	9.8	1000	1000	0.120 U	0.120 U	0.120 U
trans-1,2-Dichloroethene	100	100	100	100	0.0958 U	0.0958 U	0.0958 U
Trichloroethene (TCE)	5	5	5	5	0.0574 U	0.0574 U	0.0574 U
Vinyl chloride	2	2	2	2	0.611 U	0.611 U	0.611 U

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Location ID:	D1-ABEN3327	D1-BENO3330	D1-BENO3330	D1-BLDG0930	D1-BLDG0930	D1-BLDG1314	D1-BLDGD1-22	D1-BLDGD1-22
Location Type:	Residence	Residence	Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence	Non-Residence
Residence:	3327A Benoit Place	3330 Benoit Place	3330 Benoit Place	Building 930,CHILD DEVELOPMENT CENTER (HALE MOKU)	Building 930,CHILD DEVELOPMENT CENTER (HALE MOKU)	Building 1314,CLUB PEARL, 915 N Rd	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY
Field Sample ID:	220109-D1-BT04	220110-D1-BT01	220110-D1-BT03	220109-D1-FT05	220109-D1-FT06	220110-D1-ET12	220109-D1-ET01	220109-D1-ET02
Sample Date:	2022-01-09	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09
Sample Type:	N	N	FD	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Notes:

-- indicates that the sample was Not Analyzed for the analyte

Results highlighted yellow exceed the ISP  
Results in purple font also exceed the EALs  
Results in green font also exceed the DOH MCL  
Results in blue font also exceed the EPA MCL

µg/L = Micrograms per Liter

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-BLDGD1-22	D1-BLDGD1-22	D1-BLDGD1-22	D1-BORL3322	D1-BOTH0401	D1-BOTH0409	D1-CCRU3346	D1-CHRI0320
Location Type:	Non-Residence	Non-Residence	Non-Residence	Residence	Residence	Residence	Residence	Residence
Residence:	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY	Building D1-22,PEARL HARBOR KAI ELEMENTARY	3322 Orlando Place	401 Bothne Court	409 Bothne Court	3346 Cruse Place	320 Christopher Court
Field Sample ID:	220109-D1-ET03	220109-D1-ET04	220109-D1-FT04	220110-D1-GT01	220109-D1-GT07	220109-D1-AT03	220110-D1-CT01	220110-D1-AT08
Sample Date:	2022-01-09	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-CSTO3316	D1-DUNL0207	D1-E2ND0930	D1-E2ND0930	D1-EOUT1005	D1-EOUT1005	D1-EOUT1006	D1-EOUT1007
Location Type:	Residence	Residence	Child Development Center	Child Development Center	Residence	Residence	Residence	Residence
Residence:	3316C Stommes Place	207 Dunlap Court	5204 Ashley Avenue	5204 Ashley Avenue	1005 East Outerbridge Court	1005 East Outerbridge Court	1006 East Outerbridge Court	1007 East Outerbridge Court
Field Sample ID:	220110-D1-CT13	220109-D1-GT05	220109-D1-DT03	220109-D1-DT06	220129D1GT01	220130D1FT03	220110-D1-ET03	220110-D1-CT10
Sample Date:	2022-01-10	2022-01-09	2022-01-09	2022-01-09	2022-01-29	2022-01-30	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A005	SDG: C22A062_DP	SDG: C22A070_DP	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U	0.472 U	--	--	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone



Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-EOUT1007	D1-EOUT1007	D1-EOUT1009	D1-EOUT1010	D1-EOUT1018	D1-FISL1810	D1-GOMB1411	D1-GRAH0505
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1007 East Outerbridge Court	1007 East Outerbridge Court	1009 East Outerbridge Court	1010 East Outerbridge Court	1018 East Outerbridge Court	1810 Fisler Court	1411 Gombasy Court	505 Graham Court
Field Sample ID:	220129D1HT01	220130D1HT01	220110-D1-DT06	220110-D1-ET04	220109-D1-FT07	220109-D1-GT01	220110-D1-FT16	220109-D1-DT08
Sample Date:	2022-01-29	2022-01-30	2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09
Sample Type:	N	N	N	N	N	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A062_DP	SDG: C22A070_DP	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005
Xylenes, Total	10000	13	10000	10000	--	--	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:					D1-HOOP3303F	D1-HUTT0905	D1-HUTT0914	D1-HUTT0914	D1-HUTT0921	D1-KAUF1507	D1-LARS1904	D1-LEAL3332
Location Type:					Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:					3303F Hooper Place	905 Huttenberg Court	914 Huttenberg Court	914 Huttenberg Court	921 Huttenberg Court	1507 Kaufman Court	1904 Larson Court	3332 Leal Place
Field Sample ID:					220110-D1-ET02	220110-D1-AT10	220109-D1-CT05	220109-D1-CT07	220110-D1-GT07	220109-D1-GT03	220109-D1-DT01	220110-D1-FT10
Sample Date:					2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-09	2022-01-09	2022-01-10
Sample Type:					N	N	N	FD	N	N	N	N
		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554
VOC (µg/L)	Incident Specific Parameters											
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-LEAL3333		D1-LEAL3335	D1-MCMU1300	D1-MCMU1303	D1-MCMU1312	D1-MCMU1318	D1-MCMU1318	D1-MEAD1204
Location Type:	Residence		Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3333 Leal Place		3335 Leal Place	1300 McMurtry Court	1303 McMurtry Court	1312 McMurtry Court	1318 McMurtry Court	1318 McMurtry Court	1204 Mead Place
Field Sample ID:	220110-D1-FT07		220110-D1-ET05	220110-D1-AT01	220109-D1-AT01	220109-D1-ET09	220110-D1-AT04	220110-D1-AT06	220109-D1-DT11
Sample Date:	2022-01-10		2022-01-10	2022-01-10	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-09
Sample Type:	N		N	N	N	N	N	FD	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-MEAD1204	D1-MEAD1204	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206	D1-MEAD1206
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1204 Mead Place	1204 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place	1206 Mead Place
Field Sample ID:	220129D1GT02	220130D1FT04	220109-D1-CT01	220111-D1-CT01	220129D1HT02	220130D1HT02	D1-TW-0000895-22045-N-R1	D1-TW-0000895-22045-N-R2	
Sample Date:	2022-01-29	2022-01-30	2022-01-09	2022-01-11	2022-01-29	2022-01-30	2022-02-14	2022-02-14	
Sample Type:	N	N	N	N (72 Hour Stagnation)	N	N	N	N	

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A062_DP	SDG: C22A070_DP	SDG: C22A005	SDG: C22A009	SDG: C22A062_DP	SDG: C22A070_DP		
Xylenes, Total	10000	13	10000	10000	--	--	0.472 U	0.472 U	--	--	--	--

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-MEAD1206	D1-MEAD1206	D1-POWE3336	D1-SING0126	D1-SING0126	D1-SMIT3341	D1-SMIT3342	D1-SMIT3342
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	1206 Mead Place	1206 Mead Place	3336 Powell Loop Apt C	126 Singleton Court	126 Singleton Court	3341 Smith Circle	3342 Smith Circle	3342 Smith Circle
Field Sample ID:	D1-TW-0000895-22045-N-R3	D1-TW-0000895-22045-N-R4	220110-D1-DT01	220109-D1-CT11	220111-D1-DT04	220110-D1-DT08	220110-D1-GT03	220110-D1-GT05
Sample Date:	2022-02-15	2022-02-15	2022-01-10	2022-01-09	2022-01-11	2022-01-10	2022-01-10	2022-01-10
Sample Type:	N	N	N	N	N (72 Hour Stagnation)	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels			SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A009	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554
Xylenes, Total	10000	13	10000	10000	--	--	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-SMIT3344	D1-SMIT3344	D1-SMIT3344	D1-STOM3318	D1-TAUS1601	D1-TAUS1601	D1-TAUS1604	D1-TEAG3315
Location Type:	Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:	3344 Smith Circle	3344 Smith Circle	3344 Smith Circle	3318 Stommes Place	1601 Taussig Court	1601 Taussig Court	1604 Taussig Court	3315 Teague Place
Field Sample ID:	220109-D1-AT05	220109-D1-AT06	220110-D1-BT04	220110-D1-BT06	220109-D1-CT03	220111-D1-DT01	220109-D1-ET05	220110-D1-FT04
Sample Date:	2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-09	2022-01-11	2022-01-09	2022-01-10
Sample Type:	N	FD	N	N	N	N (72 Hour Stagnation)	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A009	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone



Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:					D1-THAT0613	D1-THAT0613	D1-VALD3306	D1-VALD3307	D1-WAGO1706	D1-WAGO1706	D1-WAGO1710	D1-WOUT1108
Location Type:					Residence	Residence	Residence	Residence	Residence	Residence	Residence	Residence
Residence:					613 Thatcher Court	613 Thatcher Court	3306 Valdez Place	3307 Valdez Place	1706 Wagoner Court	1706 Wagoner Court	1710 Wagoner Court	1108 West Outerbridge Court
Field Sample ID:					220109-D1-BT06	220109-D1-BT08	220110-D1-ET01	220110-D1-BT08	220110-D1-CT04	220110-D1-CT07	220109-D1-CT09	220110-D1-FT13
Sample Date:					2022-01-09	2022-01-09	2022-01-10	2022-01-10	2022-01-10	2022-01-10	2022-01-09	2022-01-10
Sample Type:					N	N	N	N	N	FD	N	N
		DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A005	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005	SDG: C22A007 DRAFT 12 Jan 22 1554
VOC (µg/L)	Incident Specific Parameters											
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone

Residential Sampling Report for Flushing Zone  
D1 Zone Residential DW Sampling  
Chemistry Results  
Drinking Water Sampling, JBPHH, Oahu Hawaii

Location ID:	D1-WOUT1115	D1-WTEA0811	D1-WTEA0814
Location Type:	Residence	Residence	Residence
Residence:	1115 West Outerbridge Court	811 West Teaff Court	814 West Teaff Court
Field Sample ID:	220110-D1-DT10	220110-D1-DT04	220109-D1-BT01
Sample Date:	2022-01-10	2022-01-10	2022-01-09
Sample Type:	N	N	N

VOC (µg/L)	Incident Specific Parameters	DOH Environmental Action Levels Table D-1A Groundwater Action Levels	DOH Safe Drinking Water Branch (SDWB) Regulatory Constituents	Environmental Protection Agency Maximum Contaminant Levels	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A007 DRAFT 12 Jan 22 1554	SDG: C22A005
Xylenes, Total	10000	13	10000	10000	0.472 U	0.472 U	0.472 U

Section 2b 2 Residential Sampling Report for Flushing Zone

February 25, 2022

From: Naval Facilities Engineering Systems Command Representative, IDWS Team  
To: Interagency Drinking Water System Team

SUBJ: ZONE D1 EXCEEDANCE INVESTIGATION SUMMARY AND RESULTS

Encl: (1) Zone D1 Exceedance Investigation Sample Results from EDMS  
(2) Eurofins Laboratory Report 980422 dtd 22 JAN 2022  
(3) Hawaii State Department of Health Petroleum Hydrocarbons in Water Health Effects  
(4) AECOM Bis(2-ethylhexyl)phthalate exceedance results letter dtd 20 FEB 2022  
(5) National Primary Drinking Water Regulation, EPA 816-F-09-004

1. This letter documents the Zone D1 TPH-oil exceedance and TPH-diesel at 1007 East Outbridge Court, actions taken to address the exceedance, and subsequent test results. Enclosure (1) contains the exceedance sample result and subsequent sample results. Additionally, this letter documents the TPH and bis(2-ethylhexyl)phthalate exceedances at 1206 Mead Place, actions taken to address the exceedances, and subsequent test results. Enclosure (1) contains the exceedance sample result and subsequent sample results. Enclosure (2) contains the exceedance sample result taken by the Hawaii Department of Health (DoH).

2. The sample result taken at 1007 East Outbridge Court on January 10, 2022 was 237J parts per billion (ppb) for TPH-oil and 268 ppb for TPH-diesel. This was in exceedance of the incident specific parameter of 211 ppb. In response to this exceedance, the duplex residence which included 1005 and 1007 East Outbridge Court was resampled on January 29, 2022, the unit was reflushed on January 29, 2022, and resampled again on January 30, 2022. All resamples were non-detect for TPH-oil and TPH-diesel. Enclosure (3) contains the health effects of petroleum hydrocarbons in water.

3. DoH sampled 1206 Mead Place on January 9<sup>th</sup> for TPH and the sample result was 260 ppb. This value exceeded the incident parameter for TPH. The sample result taken at 1206 Mead Place on January 11, 2022 was 6.3J ppb for bis(2-ethylhexyl)phthalate. This was in exceedance of the EPA maximum contaminant level of 6 ppb. In response to this exceedance, the duplex residence which included 1204 and 1206 Mead Place was resampled on January 29, 2022, the unit was reflushed on January 29, 2022, and resampled again on January 30, 2022. All resamples were non-detect for bis(2-ethylhexyl)phthalate and TPH. Enclosure (4) documents that the bis(2-ethylhexyl)phthalate exceedance was most likely attributable to laboratory contamination. Enclosure (5) provides the potential health effects from long-term exposure above the MCL for bis(2-ethylhexyl)phthalate. As a precaution, 1206 Mead Place was investigated further by the Navy in coordination with DoH due to the elevated total organic carbon (TOC) sample from January 30<sup>th</sup> which was 14.5 parts per million (ppm). Additional samples were taken for TOC and TPH. The sample results were below the ISPs for TOC and TPH. Once available, the additional DoH sample results will be posted at <https://jbphh-safewaters.org/>.

4. I certify under penalty of law that I have personally examined and I am familiar with the information submitted and the submitted information is true, accurate, and complete.

MENO.MICHAELWAYNE  
EL.WAYNE.JR.  
1088310035  
Digitally signed by  
MENO.MICHAELWAYNE  
EJR.1088310035  
Date: 2022.02.25  
13:15:06 -10'00'

M. W. Meno  
Captain, U.S. Navy Civil Engineer Corps

**Chemistry Results**  
Drinking Water Sampling, JBPHH, Oahu Hawaii  
Location ID:

Page 1 of 1

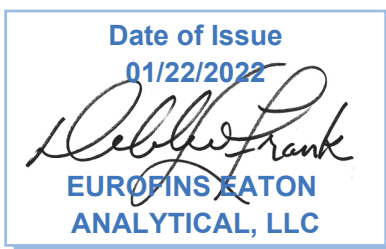
750 Royal Oaks Drive, Suite 100  
Monrovia, California 91016-3629  
Tel: (626) 386-1100  
Fax: (866) 988-3757  
1 800 566 LABS (1 800 566 5227)

## Laboratory Report

for

State of Hawaii DOH  
2385 Waimano Home Road  
Pearl City, HI 96782  
Attention: Melvin Tokuda  
Fax: 808-586-4351

REPORT REVISED,  
replaces the original report.



DEB: Debbie L Frank  
Project Manager



Utah ELCP CA00006

Report: 980422  
Project: RED-HILL-INCIDENT  
Group: RUSH TPH 8015 - (Extractable  
GRO-DRO-ORO-Response Sampling)

\* Accredited in accordance with TNI 2016 and ISO/IEC 17025:2017.

\* Laboratory certifies that the test results meet all **TNI 2016 and ISO/IEC 17025:2017** requirements unless noted under the individual analysis.

\* As applicable, this report consists of the cover page, State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms.

\* Test results relate only to the sample(s) tested.

\* Test results apply to the sample(s) as received, unless otherwise noted in the comments report (ISO/IEC 17025:2017).

\* This report shall not be reproduced except in full, without the written approval of the laboratory.

\* This report includes ISO/IEC 17025 and non-ISO 17025 accredited methods.

## STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	Montana	Cert 0035
Arizona	AZ0778	Nebraska	NE-OS-21-13
Arkansas	CA00006	Nevada	CA00006
California	2813	New Hampshire *	2959
Colorado	CA00006	New Jersey *	CA 008
Connecticut	PH-0107	New Mexico	CA00006
Delaware	CA 006	New York *	11320
Florida *	E871024	North Carolina	06701
Georgia	947	North Dakota	R-009
Guam	21-008R	Ohio - 537.1	87786
Hawaii	CA00006	Oregon *	4034
Idaho	CA00006	Pennsylvania *	68-00565
Illinois	200033	Puerto Rico	CA00006
Indiana	C-CA-01	Rhode Island	LAO00326
Iowa – Asbestos	413	South Carolina	87016
Kansas *	E-10268	South Dakota	CA11320
Kentucky	90107	Tennessee	TN02839
Louisiana *	LA008	Texas *	T104704230-20-18
Maine	CA00006	Utah (Primary AB) *	CA00006
Maryland	224	Vermont	VT0114
Marianas Islands	MP0004	Virginia *	460260
Massachusetts	M-CA006	Washington	C838
Michigan	9906	EPA Region 5	CA00006
Mississippi	CA00006	Los Angeles County Sanitation Districts	10264

\* NELAP/TNI Recognized Accreditation Bodies

ISO/IEC 17025:2017 Accredited Method List

The test listed below are accredited and met the requirements of ISO/IEC 17025 as verify by A2LA.

Refer to our certificates and scope of accreditations (no. 5890-1 and 5890-2) found at:

<https://www.eurofinsus.com/Eaton>

Test(s)	Method(s)	Potable Water *	Waste Water
Enterococci	Enterolert	x	x
<i>Escherichia coli</i> (Enumeration)	SM 9221 B.1 SM 9221 F	x	
Fecal Coliform (P/A and Enumeration)	SM 9221 C (MTF/EC), SM 9221 E (MTF/EC)	x	x
Fecal Streptococci and Enterococci	SM 9230 B	x	x
Heterotrophic Bacteria	SM 9215 B	x	
Legionella	Legiolert®	x	
<i>Pseudomonas aeruginosa</i>	Idexx Pseudalart	x	
Total Coliform (P/A and Enumeration)	SM 9221A, SM 9221B, SM 9221 C	x	x
Total Coliform, Total Coliform with Chlorine Present	SM 9221 B	x	x
Total Coliform/E. coli (P/A and Enumeration, Idexx Colilert, Idexx Colilert 18, Colisure)	SM 9223	x	
Total Microcystins and Nodularins	EPA 546	X	
Yeast and Mold	SM 9610	x	
1,2,3-Trichloropropane (TCP) at 5 PPT	CA SRL 524M-TCP	x	
1,4-Dioxane	EPA 522	x	
2,3,7,8-TCDD	Modified EPA 1613 B	x	
Acrylamide	* LCMS 2440)	x	
Algal Toxins/Microcystin	* LCMS 3570	x	
Alkalinity	SM 2320B	x	x
Ammonia	EPA 350.1, SM 4500-NH3 H		x
Asbestos	EPA 100.2	x	x
Bicarbonate Alkalinity as HCO3	SM 2330 B	x	x
BOD/CBOD	SM 5210 B		x
Bromate	* LCMS- 2447	x	
Carbonate as CO3	SM 2330 B	x	x
Carbonyls	EPA 556	x	x
Chemical Oxygen Demand	EPA 410.4, SM 5220D		x
Chlorinated Acids	EPA 515.4	x	
Chlorine Dioxide	Palin Test Chlordio X Plus, SM 4500-CLO2 D	x	
Chlorine, Free, Combined, Total Residual, Chloramines	SM 4500-CI G	x	
Color	SM2120B	x	
Conductivity	EPA 120.1, SM 2510B	x	x
Corrosivity (Langelier Index), Carbonate as CO3, Hydroxide as OH Calculated	SM 2330 B	x	
Cyanide (Amenable)	SM 4500-CN G	x	x
Cyanide (Free)	SM 4500CN F	x	x
Cyanide (Total)	EPA 335.4	x	x
Cyanogen Chloride (Screen)	* 335 Mod (WC-24467)	x	
Diquat and Paraquat	EPA 549.2	x	
DBP and HAA	SM 6251 B	x	
Dissolved Organic Carbon	SM 5310 C	x	
Dissolved Oxygen	SM 4500-O G		x
EDB/DCBP/TCP	EPA 504.1	x	
EDB/DBCP and Disinfection Byproducts	EPA 551.1	x	
EDTA and NTA	* WC-2454	x	
Endothall	EPA 548.1, *(LCMS-2445)	x	
Fluoride	SM 4500F C	x	x
Glyphosate	EPA 547	x	
Glyphosate and AMPA	* LCMS-3618	x	
Gross Alpha and Gross Beta	EPA 900.0	x	x

Test(s)	Method(s)	Potable Water *	Waste Water
Gross Alpha coprecipitation	SM 7110 C	x	x
Hardness	SM 2340 B	x	x
Hexavalent Chromium	EPA 218.6,	x	x
Hexavalent Chromium	EPA 218.7,	x	
Hexavalent Chromium	SM 3500-Cr B		x
Inorganic Anions and DBPs	EPA 300.0	x	x
Norganic Anions and DBPs	EPA 300.1	x	
Kjeldahl Nitrogen	EPA 351.2		x
Metals	EPA 200.7, EPA200.8	x	x
Nitrosamines	EEA-Agilent 521.1 (GCMS-24250)	x	
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x
Odor	SM2150B	x	
Organohalide Pesticides and PCB	EPA 505	x	
Ortho Phosphate	SM 4500P E	x	
Oxyhalides Disinfection Byproducts	EPA 317.0	x	
Perchlorate	EPA 331.0	x	
Perchlorate (Low and High Levels)	EPA 314.0	x	
Perfluorinated Alkyl Acids	EPA 533, EPA 537, EPA 537.1	x	
PPCP and EDC	* LCMS-2443	x	
pH	EPA 150.1 SM 4500-H+ B	x	x
Phenolics – Low Level	*WC 2493 (EPA 420.2 and EPA 420.4 MOD)	x	x
Phenylurea Pesticides/Herbicides	* LCMS-2448	x	
Radium-226, Radium-228	GA Tech (Rad-2374)	x	
Radon-222	SM 7500RN	x	
Residue (Filterable)	SM 2540C	x	x
Residue (Non-Filterable)	SM 2540D		x
Residue (Total)	SM 2540B		x
Residue (Volatile)	EPA 160.4		x
Semi-Volatile Compounds	EPA 525.2	x	
Silica	SM 4500-SiO2 C	x	x
Sulfide	SM 4500-S D		x
Sulfite	SM 4500-SO3 B	x	x
Surfactants	SM 5540C	x	x
Taste and Odor	SM 6040 E	x	
Total Organic Carbon	SM 5310 C	x	x
Total Phenols	EPA 420.1		x
Total Phenols	EPA 420.4	x	x
Triazine Pesticides and their Degradates	* LCMS-3617	x	
Turbidity	EPA 180.1	x	x
Uranium by ICP/MS	EPA 200.8	x	
UV 254 Organic Constituents	SM 5910B	x	
VOCs	EPA 524.2	x	
VOCs	* (GCMS 2412) by EPA 524.2 modified	x	

(\*) includes: Bottled Water, Drinking Water and Water as Component of Food & Beverage.

(+) In-House Method



## Acknowledgement of Samples Received

Addr: **State of Hawaii DOH**  
2385 Waimano Home Road  
Pearl City, HI 96782

Attn: Melvin Tokuda  
Phone: 808-586-4280

Client ID: HAWAII-DOH  
Folder #: 980422  
Project: RED-HILL-INCIDENT  
Sample Group: RUSH TPH 8015 - (Extractable  
GRO-DRO-ORO-Response Sampling)  
Project Manager: Debbie L Frank  
Phone: (626) 386-1149  
PO #: P-CARD

The following samples were received from you on **January 13, 2022 at 0948**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical, LLC.

Sample #	Sample ID	Sample Date
202201140025	010922-34-01	01/09/2022 1007
	@8015_C8-C44_ASSETS	
202201140026	RUSH	01/09/2022 1007
	RUSH	

### Test Description

@8015\_C8-C44\_ASSETS -- 8015 C8-C44



Tel: (626) 386-1100  
Fax: (866) 988-3757  
1 800 566 LABS (1 800 566 5227)

**Laboratory Comments**

**Report:** 980422  
**Project:** RED-HILL-INCIDENT  
**Group:** RUSH TPH 8015 - (Extractable  
GRO-DRO-ORO-Response  
Sampling)

State of Hawaii DOH  
Melvin Tokuda  
2385 Waimano Home Road  
Pearl City, HI 96782

---

**Folder Comments**

Results for TPH Carbon Chain are submitted by Asset Laboratoreis

Report revised. Sample ID updated from "-04-" to "-34-" . deb012222

Temperature discrepancy.

Temperature recorded over the preferred limit 6°C. proceed with testing per Iris Van Der Zander and DEB.

Tel: (626) 386-1100  
Fax: (866) 988-3757  
1 800 566 LABS (1 800 566 5227)

Laboratory Hits

**Report:** 980422  
**Project:** RED-HILL-INCIDENT  
**Group:** RUSH TPH 8015 - (Extractable  
GRO-DRO-ORO-Response  
Sampling)

**State of Hawaii DOH**  
Melvin Tokuda  
2385 Waimano Home Road  
Pearl City, HI 96782

Samples Received on:  
01/13/2022 0948

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	<b>202201140025</b>	<b><u>010922-34-01</u></b>				
01/13/2022 22:31	C8		210		ug/L	50
01/13/2022 22:31	C8-C44		260		ug/L	50
01/13/2022 22:31	Gas Range Organics C8-C10		230		ug/L	50

**SUMMARY OF POSITIVE DATA ONLY**

ENCL (2)

Tel: (626) 386-1100  
Fax: (866) 988-3757  
1 800 566 LABS (1 800 566 5227)

## Laboratory Data

**Report:** 980422  
**Project:** RED-HILL-INCIDENT  
**Group:** RUSH TPH 8015 - (Extractable  
GRO-DRO-ORO-Response Sampling)

**State of Hawaii DOH**  
Melvin Tokuda  
2385 Waimano Home Road  
Pearl City, HI 96782

Samples Received on:  
01/13/2022 0948

Prepared	Analyzed	Prep Batch	Analyzed Batch	Method	Analyte	Result	Units	MDL	MRL	Dilution
<b>010922-34-01 (202201140025)</b>						<b>Sampled on 01/09/2022 1007</b>				
<b>EPA 8015 - 8015 C8-C44</b>										
	01/13/22 22:31			(EPA 8015)	C11-C12	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C13-C14	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C15-C16	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C17-C18	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C19-C20	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C21-C22	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C23-C24	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C25-C26	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C29-C32	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C33-C36	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C37-C40	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C41-C44	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C8	210	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C8-C44	260	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	C9-C10	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	Diesel Range Organics (DRO) -C10-C28	ND	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	Gas Range Organics C8-C10	230	ug/L	33	50	1
	01/13/22 22:31			(EPA 8015)	Oil Range Organics (C28-C40)	ND	ug/L	33	50	1

Rounding on totals after summation.

ND - Analyte was not detected at the calculated MDL.

J - The analyte was either detected at or greater than the MDL and less than the MRL, or did not meet any one of the required QC criteria.

(c) - indicates calculated results. Analysis is a calculated result. Reported results are not rounded until the final step before reporting. Therefore methods that use a test result with further calculation may have slight differences in final result than the component analyses.

January 14, 2022

Debbie Frank  
Eurofins  
750 Royal Oaks Drive Suite 100  
Monrovia, CA 91016-3629  
TEL: (626) 386-1158  
FAX:

Workorder No.: N048792

RE: HAWAII-DOH

Attention: Debbie Frank

Enclosed are the results for sample(s) received on January 13, 2022 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,



Nancy Sibucan  
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and ASSET Laboratories - Las Vegas.



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ORELAP/NELAP Cert 4046

**CLIENT:** Eurofins  
**Project:** HAWAII-DOH  
**Lab Order:** N048792

**CASE NARRATIVE****SAMPLE RECEIVING/GENERAL COMMENTS:**

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.



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## ASSET Laboratories

Date: 14-Jan-22

CLIENT: Eurofins  
Project: HAWAII-DOH  
Lab Order: N048792  
Contract No:

### Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N048792-001A	980422_202201140025_0109 22-04-01	Water	1/9/2022 10:07:00 AM	1/13/2022	1/14/2022



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## ASSET Laboratories

## ANALYTICAL RESULTS

Print Date: 14-Jan-22

CLIENT: Eurofins

Client Sample ID: 980422\_202201140025\_010922-04-01

Lab Order: N048792

Collection Date: 1/9/2022 10:07:00 AM

Project: HAWAII-DOH

Matrix: WATER

Lab ID: N048792-001

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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## TPH CARBON CHAIN EPA 8015

## EPA 3510C

## EPA 8015B(M)

RunID: NV00922-GC3\_220113A

QC Batch: 91038

PrepDate:

1/13/2022

Analyst: PL

Diesel Range Organics (C10-C28)	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C11-C12	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C13-C14	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C15-C16	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C17-C18	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C19-C20	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C21-C22	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C23-C24	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C25-C26	ND	33	50	ug/L	1	1/13/2022 10:31 PM
Oil Range Organics (C28-C40)	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C29-C32	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C33-C36	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C37-C40	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C41-C44	ND	33	50	ug/L	1	1/13/2022 10:31 PM
C8 as C8	210	33	50	ug/L	1	1/13/2022 10:31 PM
Gas Range Organics (extractable) (C8-C10)	230	33	50	ug/L	1	1/13/2022 10:31 PM
C8-C44	260	33	50	ug/L	1	1/13/2022 10:31 PM
C9-C10	ND	33	50	ug/L	1	1/13/2022 10:31 PM
Surr: p-Terphenyl	76.6	0	33-138	%REC	1	1/13/2022 10:31 PM

**Qualifiers:** B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
Results are wet unless otherwise specified

E Value above quantitation range  
J Analyte detected below quantitation limits  
S Spike/Surrogate outside of limits due to matrix interference  
DO Surrogate Diluted Out



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## ASSET Laboratories

Date: 14-Jan-22

## ANALYTICAL QC SUMMARY REPORT

CLIENT: Eurofins

Work Order: N048792

Project: HAWAII-DOH

TestCode: 8015DM\_W\_CC

Sample ID: MB-91038	SampType: MBLK	TestCode: 8015DM_W_C	Units: ug/L	Prep Date: 1/13/2022	RunNo: 159531						
Client ID: PBW	Batch ID: 91038	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 1/13/2022	SeqNo: 4497660						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (C10-C28)	ND	50									
C11-C12	ND	50									
C13-C14	ND	50									
C15-C16	ND	50									
C17-C18	ND	50									
C19-C20	ND	50									
C21-C22	ND	50									
C23-C24	ND	50									
C25-C26	ND	50									
Oil Range Organics (C28-C40)	ND	50									
C29-C32	ND	50									
C33-C36	ND	50									
C37-C40	ND	50									
C41-C44	ND	50									
C8 as C8	ND	50									
Gas Range Organics (extractable) (C8-C	ND	50									
C8-C44	ND	50									
C9-C10	ND	50									
Surr: p-Terphenyl	64.899		80.00		81.1	33	138				

Sample ID: LCS-91038	SampType: LCS	TestCode: 8015DM_W_C	Units: ug/L	Prep Date: 1/13/2022	RunNo: 159531						
Client ID: LCSW	Batch ID: 91038	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 1/13/2022	SeqNo: 4497661						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (C10-C28)	627.415	50	1000	0	62.7	48	120				
Surr: p-Terphenyl	65.208		80.00		81.5	33	138				

## Qualifiers:

B Analyte detected in the associated Method Blank  
 J Analyte detected below quantitation limits  
 S Spike/Surrogate outside of limits due to matrix interference  
 E Value above quantitation range  
 ND Not Detected at the Reporting Limit  
 DO Surrogate Diluted Out  
 H Holding times for preparation or analysis exceeded  
 R RPD outside accepted recovery limits  
 Calculations are based on raw values



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ENCL (2)

CLIENT: Eurofins

Work Order: N048792

Project: HAWAII-DOH

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015DM\_W\_CC

Sample ID: LCSD-91038	SampType: LCSD	TestCode: 8015DM_W_C	Units: ug/L	Prep Date: 1/13/2022	RunNo: 159531						
Client ID: LCSS02	Batch ID: 91038	TestNo: EPA 8015B(M	EPA 3510C	Analysis Date: 1/13/2022	SeqNo: 4497779						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (C10-C28)	644.411	50	1000	0	64.4	48	120	627.4	2.67	20	
Surr: p-Terphenyl	62.742		80.00		78.4	33	138		0	0	

Qualifiers:					
B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values



ASSET LABORATORIES  
ANALYTICAL SERVICES • QUALITY ASSURANCE • REGULATORY COMPLIANCE

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ELAP Cert 2921 ELAP Cert 2676 I NV Cert NV00922

EPA ID CA01638 ORELAP/NELAP Cert 4046

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## ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 1/13/2022 Workorder: N048792  
 Rep sample Temp (Deg C): 11.2 IR Gun ID: 3  
 Temp Blank: ☐ Yes ☒ No  
 Carrier name: FedEx  
 Last 4 digits of Tracking No.: 8458 Packing Material Used: Bubble Wrap  
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

### Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>

Comments:

For:

Checklist Completed By: YR GGarcia 1/13/2022

Reviewed By: ABC 1/14/2022

ASSET Laboratories

WORK ORDER Summary

14-Jan-22

WorkOrder: N048792

Client ID: EUROFO1

QC Level: RTNE

Date Received: 1/13/2022

Project: HAWAII-DOH

Comments:	J-flag results									
Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N048792-001A	980422_202201140025_0109 22 04 01	1/9/2022 10:07:00 AM	1/17/2022	Water	EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N048792-002A	FOLDER	1/17/2022	1/17/2022		EPA 8015B(M)	TPH Carbon Chain EPA 8015	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
					Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			1/17/2022		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



ORIGIN ID: NAXA (808) 586-4258  
SEILA ARONI  
DEPARTMENT OF HEALTH/SDWB  
2385 WAIMANO HOME RD.  
ULUAKUPU BLDG. 4  
PEARL CITY, HI 96782  
UNITED STATES US

SHIP DATE: 10JAN22  
ACTWGT: 75.00 LB  
CAD: 101971153/NET4400

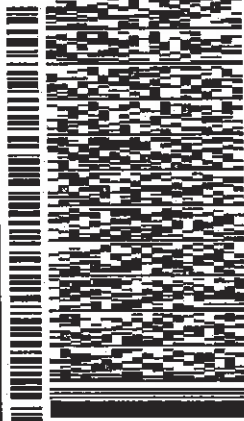
BILL SENDER

TO MARLON CARTIN  
ASSET LABORATORIES  
3151 W POST RD

LAS VEGAS NV 89118  
(702) 307-2659 REF:

56D1201EFFE4A

DEPT.



TUE - 11 JAN 10:30A  
PRIORITY OVERNIGHT

1 of 2  
TRK# 7757 0764 8458  
## MASTER ##

89118  
LAS  
NV-US

WR LASA



11.2  
5

**After printing this label:**  
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.  
2. Fold the printed page along the horizontal line.  
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.  
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



# Petroleum Hydrocarbons in Water: Health Effects



## What happens if I swallow water with petroleum?

Drinking water containing petroleum hydrocarbons can cause an upset stomach, stomach cramping, nausea, vomiting, and diarrhea. Your throat and mouth may also get irritated.



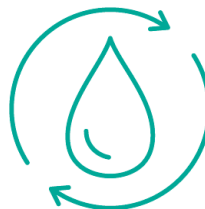
## What happens if water with petroleum gets on my skin?

Petroleum hydrocarbons can irritate the skin (dermal exposure). Continuous exposure can cause itchy rash with red and peeling skin. After skin contact, always wash with soap and clean water.



## What happens if I breathe air that smells like petroleum?

Breathing petroleum vapors (also called inhalational exposure) can cause headaches, dizziness, tiredness and respiratory problems like cough and difficulty breathing. Nosebleeds are possible.



## How can this affect my future health?

Evaluation of the possibility of long-term health effects is ongoing. Based on current information, people exposed to contaminated drinking water from the Joint Base Pearl Harbor-Hickam Drinking Water System in this incident are not expected to experience long-term health effects.

## What should I do if I have symptoms after exposure to contaminated water?

- If there is a strong petroleum smell, **leave the area and get fresh air.**
- If you develop respiratory problems or other severe symptoms, **seek urgent medical evaluation.**
- **Contact your primary care doctor** for an appointment.
- **Avoid exposure to the water.** Do not drink or use the water for cooking or brushing teeth. Do not bathe in the water. If skin contact, always wash with soap and clean water
- **Call the Hawaii Poison Center (800) 222-1222 for questions.**



- **Primary Care Doctor**
- **Hawaii Poison Center (800) 222-1222**

**For more information, visit [health.hawaii.gov/NavyWater](https://health.hawaii.gov/NavyWater)**

February 20, 2022

NAVFAC Hawaii  
400 Marshall Road  
JBPHH HI 96860-3139

**Subject: Red Hill Bulk Fuel Storage Facility  
Bis(2-ethylhexyl)phthalate Exceedance Results**

Attention Engineering Working Group:

The table below summarizes the bis(2-ethylhexyl) phthalate (B2EHP) exceedance results with respect to the Incident-Specific Parameter concentrations for this analyte in multiple samples. Mass spectral and chromatographic data were reviewed to determine if the detections were supported by the raw data. All the detections appear to meet qualitative and quantitative method criteria.

SDG	Laboratory Sample ID	Field Sample ID	Zone	Address	Date Collected	Date Extracted	Date Analyzed	Sample B2EHP Result	MB B2EHP Result	Units
DA41377	DA41377-4	220129B1AT03	B1	Trip Blank	1/29/2022	02/01/22	02/02/22	13.2	17.3	ug/L
DA41377R	DA41377-5R	220129B1AT04	B1	2855 B Kae Loop	1/29/2022	02/01/22	02/02/22	42.4	17.3	ug/L
DA41416R	DA41416-2R	220131C3ET01	C3	690 Cushing St.	1/31/2022	02/04/22	02/04/22	26.4	11.7	ug/L
DA41509R	DA41509-7R	220202D4DT01	D4	625 Mamala Bay Dr	2/2/2022	02/05/22	02/07/22	3	0.60 U	ug/L
DA41509R	DA41509-2R	220202D4DT03	D4	386 Mamala Bay Dr	2/2/2022	02/05/22	02/07/22	4.2	0.60 U	ug/L
DA41509	DA41509-6	220202D4AT07	D4	Trip Blank	2/2/2022	02/04/22	02/05/22	21.6	11.7	ug/L
DA41510	DA41510-4	220202H1FT05	H1	Trip Blank	2/2/2022	02/04/22	02/05/22	28.9	0.64 J	ug/L
DA41395R	DA41395-2R	220129F2CT03	F2	3349 Catlin Drive	01/29/22	02/04/22	02/04/22	23.8	11.7	ug/L
DA41395R	DA41395-5R	220129F2CT01	F2	811 Murray Dr	01/29/22	02/04/22	02/04/22	18.3	11.7	ug/L
DA40816AR	DA40816-38	220111-D1-CT01	D1	1206 Mead Pl	01/11/22	01/17/22	01/18/22	6.3	0.58 J	ug/L

ug/L = micrograms per liter U = the analyte was not detected J = estimated values

B2EHP is a common laboratory contaminant and used as a plasticizer in many plastic materials, including tubing commonly used by laboratories. B2EHP contamination of laboratory extraction equipment and glassware surfaces is a common cause of false positive sample results in semi-volatile methods such as EPA 525.2

The pattern of exceedance results occurs at a single laboratory (SGS-Wheat Ridge) and within a relatively narrow window of time (all laboratory extractions between 02/01/22 and 02/05/22, except for one on 01/17/22). Eight out of ten exceedance results are associated with preparatory batches having B2EHP detections in the method blanks (MB). In six of those eight cases the MB result is more than 40% of the sample result for B2EHP.

Although three of the ten exceedance results are from Trip Blanks, many of the associated field samples collected and shipped together did not contain detectable B2EHP, indicating that the field sampling procedures or containers themselves are an unlikely source of the contamination.

An investigation of the SGS-Wheat Ridge 525.2 QC results for all Red Hill samples confirmed that 23% of the MB records in EDMS contained reported concentrations of B2EHP ranging from 0.58 to 17.3 ug/L. Many of the associated matrix spikes in these batches exceeded control limits for B2EHP by up to 800% indicating sporadic cases of B2EHP contamination in all QC samples.

During a review of the laboratory raw data it was noted that all of the highest concentration B2EHP detections are associated with bis (2-ethylhexyl) adipate (B2EHA) detections at concentrations ~ 3% of the B2EHP. B2EHA is another common plasticizer and sometimes used as a replacement for phthalates such as B2EHP. The pattern of B2EHP + B2EHA association in samples from very different field locations is another indicator that the contamination has a common source and is from inside the laboratory, not from the drinking water samples.

The overall pattern of erratic detections in in a single laboratory over a narrow window of time indicates that intermittent laboratory contamination explains all of the reported B2EHP exceedances in the table above, including those results where the associated method blank appeared to be clean or the MB is < 10X the sample result.

The weight of evidence suggests are all the exceedance results are false positives attributable to laboratory contamination, and therefore no further action is warranted at this time.

Questions regarding this letter should be addressed to the DW Task  
Manager, Reid Campbell.

Yours sincerely,



Robert Kennedy  
AVP, Senior Project Chemist  
robert.kennedy@aecom.com

















Robin Cababa  
CLEAN Program Manager  
robin.cababa@aecom.com

c: Reid Campbell, AECOM Task Manager  
Ken Vinson, AECOM Senior VP Program Manager  
Jim Refermat, AECOM Senior Program Chemist  
Contracting Officer  
Victor Gonzalez, NAVFAC


















# National Primary Drinking Water Regulations



Contaminant	MCL or TT <sup>1</sup> (mg/L) <sup>2</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
 Acrylamide	TT <sup>4</sup>	Nervous system or blood problems; increased risk of cancer	Added to water during sewage/wastewater treatment	<b>zero</b>
 Alachlor	0.002	Eye, liver, kidney, or spleen problems; anemia; increased risk of cancer	Runoff from herbicide used on row crops	<b>zero</b>
 Alpha/photon emitters	15 picocuries per Liter (pCi/L)	Increased risk of cancer	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation	<b>zero</b>
 Antimony	0.006	Increase in blood cholesterol; decrease in blood sugar	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	<b>0.006</b>
 Arsenic	0.010	Skin damage or problems with circulatory systems, and may have increased risk of getting cancer	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes	<b>0</b>
 Asbestos (fibers >10 micrometers)	7 million fibers per Liter (MFL)	Increased risk of developing benign intestinal polyps	Decay of asbestos cement in water mains; erosion of natural deposits	<b>7 MFL</b>
 Atrazine	0.003	Cardiovascular system or reproductive problems	Runoff from herbicide used on row crops	<b>0.003</b>
 Barium	2	Increase in blood pressure	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	<b>2</b>
 Benzene	0.005	Anemia; decrease in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage tanks and landfills	<b>zero</b>
 Benzo(a)pyrene (PAHs)	0.0002	Reproductive difficulties; increased risk of cancer	Leaching from linings of water storage tanks and distribution lines	<b>zero</b>
 Beryllium	0.004	Intestinal lesions	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	<b>0.004</b>
 Beta photon emitters	4 millirems per year	Increased risk of cancer	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation	<b>zero</b>
 Bromate	0.010	Increased risk of cancer	Byproduct of drinking water disinfection	<b>zero</b>
 Cadmium	0.005	Kidney damage	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	<b>0.005</b>
 Carbofuran	0.04	Problems with blood, nervous system, or reproductive system	Leaching of soil fumigant used on rice and alfalfa	<b>0.04</b>

## LEGEND



Contaminant	MCL or TT <sup>1</sup> (mg/L) <sup>2</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
 Carbon tetrachloride	0.005	Liver problems; increased risk of cancer	Discharge from chemical plants and other industrial activities	<b>zero</b>
 Chloramines (as Cl <sub>2</sub> )	MRDL=4.0 <sup>1</sup>	Eye/nose irritation; stomach discomfort; anemia	Water additive used to control microbes	<b>MRDLG=4<sup>1</sup></b>
 Chlordane	0.002	Liver or nervous system problems; increased risk of cancer	Residue of banned termiticide	<b>zero</b>
 Chlorine (as Cl <sub>2</sub> )	MRDL=4.0 <sup>1</sup>	Eye/nose irritation; stomach discomfort	Water additive used to control microbes	<b>MRDLG=4<sup>1</sup></b>
 Chlorine dioxide (as ClO <sub>2</sub> )	MRDL=0.8 <sup>1</sup>	Anemia; infants, young children, and fetuses of pregnant women: nervous system effects	Water additive used to control microbes	<b>MRDLG=0.8<sup>1</sup></b>
 Chlorite	1.0	Anemia; infants, young children, and fetuses of pregnant women: nervous system effects	Byproduct of drinking water disinfection	<b>0.8</b>
 Chlorobenzene	0.1	Liver or kidney problems	Discharge from chemical and agricultural chemical factories	<b>0.1</b>
 Chromium (total)	0.1	Allergic dermatitis	Discharge from steel and pulp mills; erosion of natural deposits	<b>0.1</b>
 Copper	TT <sup>5</sup> ; Action Level=1.3	Short-term exposure: Gastrointestinal distress. Long-term exposure: Liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level	Corrosion of household plumbing systems; erosion of natural deposits	<b>1.3</b>
 <i>Cryptosporidium</i>	TT <sup>7</sup>	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	<b>zero</b>
 Cyanide (as free cyanide)	0.2	Nerve damage or thyroid problems	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	<b>0.2</b>
 2,4-D	0.07	Kidney, liver, or adrenal gland problems	Runoff from herbicide used on row crops	<b>0.07</b>
 Dalapon	0.2	Minor kidney changes	Runoff from herbicide used on rights of way	<b>0.2</b>
 1,2-Dibromo-3-chloropropane (DBCP)	0.0002	Reproductive difficulties; increased risk of cancer	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	<b>zero</b>
 o-Dichlorobenzene	0.6	Liver, kidney, or circulatory system problems	Discharge from industrial chemical factories	<b>0.6</b>
 p-Dichlorobenzene	0.075	Anemia; liver, kidney, or spleen damage; changes in blood	Discharge from industrial chemical factories	<b>0.075</b>
 1,2-Dichloroethane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	<b>zero</b>

## LEGEND



DISINFECTANT

















DISINFECTION  
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RADIONUCLIDES



Contaminant	MCL or TT <sup>1</sup> (mg/L) <sup>2</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
 1,1-Dichloroethylene	0.007	Liver problems	Discharge from industrial chemical factories	<b>0.007</b>
 cis-1,2-Dichloroethylene	0.07	Liver problems	Discharge from industrial chemical factories	<b>0.07</b>
 trans-1,2-Dichloroethylene	0.1	Liver problems	Discharge from industrial chemical factories	<b>0.1</b>
 Dichloromethane	0.005	Liver problems; increased risk of cancer	Discharge from industrial chemical factories	<b>zero</b>
 1,2-Dichloropropane	0.005	Increased risk of cancer	Discharge from industrial chemical factories	<b>zero</b>
 Di(2-ethylhexyl) adipate	0.4	Weight loss, liver problems, or possible reproductive difficulties	Discharge from chemical factories	<b>0.4</b>
 Di(2-ethylhexyl) phthalate	0.006	Reproductive difficulties; liver problems; increased risk of cancer	Discharge from rubber and chemical factories	<b>zero</b>
 Dinoseb	0.007	Reproductive difficulties	Runoff from herbicide used on soybeans and vegetables	<b>0.007</b>
 Dioxin (2,3,7,8-TCDD)	0.00000003	Reproductive difficulties; increased risk of cancer	Emissions from waste incineration and other combustion; discharge from chemical factories	<b>zero</b>
 Diquat	0.02	Cataracts	Runoff from herbicide use	<b>0.02</b>
 Endothall	0.1	Stomach and intestinal problems	Runoff from herbicide use	<b>0.1</b>
 Endrin	0.002	Liver problems	Residue of banned insecticide	<b>0.002</b>
 Epichlorohydrin	TT <sup>4</sup>	Increased cancer risk; stomach problems	Discharge from industrial chemical factories; an impurity of some water treatment chemicals	<b>zero</b>
 Ethylbenzene	0.7	Liver or kidney problems	Discharge from petroleum refineries	<b>0.7</b>
 Ethylene dibromide	0.00005	Problems with liver, stomach, reproductive system, or kidneys; increased risk of cancer	Discharge from petroleum refineries	<b>zero</b>
 Fecal coliform and <i>E. coli</i>	MCL <sup>6</sup>	Fecal coliforms and <i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes may cause short term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.	Human and animal fecal waste	<b>zero<sup>6</sup></b>

## LEGEND



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Contaminant	MCL or TT <sup>1</sup> (mg/L) <sup>2</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
 Fluoride	4.0	Bone disease (pain and tenderness of the bones); children may get mottled teeth	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	<b>4.0</b>
 <i>Giardia lamblia</i>	TT <sup>7</sup>	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	<b>zero</b>
 Glyphosate	0.7	Kidney problems; reproductive difficulties	Runoff from herbicide use	<b>0.7</b>
 Haloacetic acids (HAA5)	0.060	Increased risk of cancer	Byproduct of drinking water disinfection	<b>n/a<sup>9</sup></b>
 Heptachlor	0.0004	Liver damage; increased risk of cancer	Residue of banned termiticide	<b>zero</b>
 Heptachlor epoxide	0.0002	Liver damage; increased risk of cancer	Breakdown of heptachlor	<b>zero</b>
 Heterotrophic plate count (HPC)	TT <sup>7</sup>	HPC has no health effects; it is an analytic method used to measure the variety of bacteria that are common in water. The lower the concentration of bacteria in drinking water, the better maintained the water system is.	HPC measures a range of bacteria that are naturally present in the environment	<b>n/a</b>
 Hexachlorobenzene	0.001	Liver or kidney problems; reproductive difficulties; increased risk of cancer	Discharge from metal refineries and agricultural chemical factories	<b>zero</b>
 Hexachloro-cyclopentadiene	0.05	Kidney or stomach problems	Discharge from chemical factories	<b>0.05</b>
 Lead	TT <sup>5</sup> ; Action Level=0.015	Infants and children: Delays in physical or mental development; children could show slight deficits in attention span and learning abilities; Adults: Kidney problems; high blood pressure	Corrosion of household plumbing systems; erosion of natural deposits	<b>zero</b>
 <i>Legionella</i>	TT <sup>7</sup>	Legionnaire's Disease, a type of pneumonia	Found naturally in water; multiplies in heating systems	<b>zero</b>
 Lindane	0.0002	Liver or kidney problems	Runoff/leaching from insecticide used on cattle, lumber, and gardens	<b>0.0002</b>
 Mercury (inorganic)	0.002	Kidney damage	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands	<b>0.002</b>
 Methoxychlor	0.04	Reproductive difficulties	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, and livestock	<b>0.04</b>
 Nitrate (measured as Nitrogen)	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	<b>10</b>

## LEGEND




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Contaminant	MCL or TT <sup>1</sup> (mg/L) <sup>2</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
 Nitrite (measured as Nitrogen)	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	<b>1</b>
 Oxamyl (Vydate)	0.2	Slight nervous system effects	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes	<b>0.2</b>
 Pentachlorophenol	0.001	Liver or kidney problems; increased cancer risk	Discharge from wood-preserving factories	<b>zero</b>
 Picloram	0.5	Liver problems	Herbicide runoff	<b>0.5</b>
 Polychlorinated biphenyls (PCBs)	0.0005	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals	<b>zero</b>
 Radium 226 and Radium 228 (combined)	5 pCi/L	Increased risk of cancer	Erosion of natural deposits	<b>zero</b>
 Selenium	0.05	Hair or fingernail loss; numbness in fingers or toes; circulatory problems	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	<b>0.05</b>
 Simazine	0.004	Problems with blood	Herbicide runoff	<b>0.004</b>
 Styrene	0.1	Liver, kidney, or circulatory system problems	Discharge from rubber and plastic factories; leaching from landfills	<b>0.1</b>
 Tetrachloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from factories and dry cleaners	<b>zero</b>
 Thallium	0.002	Hair loss; changes in blood; kidney, intestine, or liver problems	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	<b>0.0005</b>
 Toluene	1	Nervous system, kidney, or liver problems	Discharge from petroleum factories	<b>1</b>
 Total Coliforms	5.0 percent <sup>8</sup>	Coliforms are bacteria that indicate that other, potentially harmful bacteria may be present. See fecal coliforms and <i>E. coli</i>	Naturally present in the environment	<b>zero</b>
 Total Trihalomethanes (TTHMs)	0.080	Liver, kidney, or central nervous system problems; increased risk of cancer	Byproduct of drinking water disinfection	<b>n/a<sup>9</sup></b>
 Toxaphene	0.003	Kidney, liver, or thyroid problems; increased risk of cancer	Runoff/leaching from insecticide used on cotton and cattle	<b>zero</b>
 2,4,5-TP (Silvex)	0.05	Liver problems	Residue of banned herbicide	<b>0.05</b>
 1,2,4- Trichlorobenzene	0.07	Changes in adrenal glands	Discharge from textile finishing factories	<b>0.07</b>

## LEGEND

















DISINFECTANT

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RADIONUCLIDES

Contaminant	MCL or TT <sup>1</sup> (mg/L) <sup>2</sup>	Potential health effects from long-term <sup>3</sup> exposure above the MCL	Common sources of contaminant in drinking water	Public Health Goal (mg/L) <sup>2</sup>
 1,1,1-Trichloroethane	0.2	Liver, nervous system, or circulatory problems	Discharge from metal degreasing sites and other factories	<b>0.2</b>
 1,1,2-Trichloroethane	0.005	Liver, kidney, or immune system problems	Discharge from industrial chemical factories	<b>0.003</b>
 Trichloroethylene	0.005	Liver problems; increased risk of cancer	Discharge from metal degreasing sites and other factories	<b>zero</b>
 Turbidity	TT <sup>7</sup>	Turbidity is a measure of the cloudiness of water. It is used to indicate water quality and filtration effectiveness (e.g., whether disease-causing organisms are present). Higher turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites, and some bacteria. These organisms can cause short term symptoms such as nausea, cramps, diarrhea, and associated headaches.	Soil runoff	<b>n/a</b>
 Uranium	30µg/L	Increased risk of cancer, kidney toxicity	Erosion of natural deposits	<b>zero</b>
 Vinyl chloride	0.002	Increased risk of cancer	Leaching from PVC pipes; discharge from plastic factories	<b>zero</b>
 Viruses (enteric)	TT <sup>7</sup>	Short-term exposure: Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	<b>zero</b>
 Xylenes (total)	10	Nervous system damage	Discharge from petroleum factories; discharge from chemical factories	<b>10</b>
<b>LEGEND</b>  <b>DISINFECTANT</b>  <b>DISINFECTION BYPRODUCT</b>  <b>INORGANIC CHEMICAL</b>  <b>MICROORGANISM</b>  <b>ORGANIC CHEMICAL</b>  <b>RADIONUCLIDES</b>				

## NOTES

### 1 Definitions

- Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
- Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
- Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**2** Units are in milligrams per liter (mg/L) unless otherwise noted. Milligrams per liter are equivalent to parts per million (ppm).

**3** Health effects are from long-term exposure unless specified as short-term exposure.

**4** Each water system must certify annually, in writing, to the state (using third-party or manufacturers certification) that when it uses acrylamide and/or epichlorohydrin to treat water, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Acrylamide = 0.05 percent dosed at 1 mg/L (or equivalent); Epichlorohydrin = 0.01 percent dosed at 20 mg/L (or equivalent).

**5** Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10 percent of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.

**6** A routine sample that is fecal coliform-positive or E. coli-positive triggers repeat samples—if any repeat sample is total coliform-positive, the system has an acute MCL violation. A routine sample that is total coliform-positive and fecal coliform-negative or E. coli-negative triggers repeat samples—if any repeat sample is fecal coliform-positive or E. coli-positive, the system has an acute MCL violation. See also Total Coliforms.

**7** EPA's surface water treatment rules require systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water or meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels:

- Cryptosporidium:** 99 percent removal for systems that filter. Unfiltered systems are required to include Cryptosporidium in their existing watershed control provisions.

- Giardia lamblia:** 99.9 percent removal/inactivation
- Viruses:** 99.9 percent removal/inactivation
- Legionella:** No limit, but EPA believes that if *Giardia* and viruses are removed/inactivated, according to the treatment techniques in the surface water treatment rule, *Legionella* will also be controlled.
- Turbidity:** For systems that use conventional or direct filtration, at no time can turbidity (cloudiness of water) go higher than 1 nephelometric turbidity unit (NTU), and samples for turbidity must be less than or equal to 0.3 NTU in at least 95 percent of the samples in any month. Systems that use filtration other than the conventional or direct filtration must follow state limits, which must include turbidity at no time exceeding 5 NTU.
- HPC:** No more than 500 bacterial colonies per milliliter
- Long Term 1 Enhanced Surface Water Treatment:** Surface water systems or ground water systems under the direct influence of surface water serving fewer than 10,000 people must comply with the applicable Long Term 1 Enhanced Surface Water Treatment Rule provisions (e.g. turbidity standards, individual filter monitoring, *Cryptosporidium* removal requirements, updated watershed control requirements for unfiltered systems).
- Long Term 2 Enhanced Surface Water Treatment:** This rule applies to all surface water systems or ground water systems under the direct influence of surface water. The rule targets additional *Cryptosporidium* treatment requirements for higher risk systems and includes provisions to reduce risks from uncovered finished water storages facilities and to ensure that the systems maintain microbial protection as they take steps to reduce the formation of disinfection byproducts. (Monitoring start dates are staggered by system size. The largest systems (serving at least 100,000 people) will begin monitoring in October 2006 and the smallest systems (serving fewer than 10,000 people) will not begin monitoring until October 2008. After completing monitoring and determining their treatment bin, systems generally have three years to comply with any additional treatment requirements.)
- Filter Backwash Recycling:** The Filter Backwash Recycling Rule requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.
- 8** No more than 5.0 percent samples total coliform-positive in a month. (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform-positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or E. coli. If two consecutive TC-positive samples, and one is also positive for E. coli or fecal coliforms, system has an acute MCL violation.

**9** Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants:

- Halooacetic acids:** dichloroacetic acid (zero); trichloroacetic acid (0.3 mg/L)
- Trihalomethanes:** bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L)

## NATIONAL SECONDARY DRINKING WATER REGULATION

National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, some states may choose to adopt them as enforceable standards.

Contaminant	Secondary Maximum Contaminant Level
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 (color units)
Copper	1.0 mg/L
Corrosivity	Noncorrosive
Fluoride	2.0 mg/L
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pH	6.5-8.5
Silver	0.10 mg/L
Sulfate	250 mg/L
Total Dissolved Solids	500 mg/L
Zinc	5 mg/L

FOR MORE INFORMATION ON EPA'S  
SAFE DRINKING WATER:



visit: [epa.gov/safewater](https://epa.gov/safewater)



call: (800) 426-4791

### ADDITIONAL INFORMATION:

To order additional posters or other ground water and drinking water publications, please contact the National Service Center for Environmental Publications at: **(800) 490-9198**, or email: [nscep@bps-lmit.com](mailto:nscep@bps-lmit.com).



OFFICE OF GROUND WATER  
AND DRINKING WATER



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JBPHH, HAWAII 96860-3139

11000  
Ser PWO/0092  
February 10, 2022

Interagency Drinking Water System Team

SUBJECT: CERTIFICATION OF IRRIGATION LINE FLUSHING – JOINT BASE  
PEARL HARBOR-HICKAM - ZONE D1

On behalf of the United States Department of the Navy, operator of the Joint Base Pearl Harbor-Hickam Public Water System (PWS ID No. 360 Water System), and in connection with and pursuant to the removal action required by the DOH Hazard Evaluation and Emergency Response Office Incident Case No. 20211128-1848, the undersigned certifies that the Navy has made all necessary inquiry into their Water System and represents and warrants as set forth below.

Landscape irrigation systems in Zone D1, including Hale Moku and Hokulani housing areas, have been operated and flushed following Dept. of Health guidance, and subsequent to the approved distribution line flushing conducted in December, 2021.

The undersigned has due authority to deliver this Certification on behalf of the Navy.

Sincerely,

HARMEYER.RANDALL  
.ERNEST.1186692663

Digitally signed by  
HARMEYER.RANDALL.ERNEST.11  
86692663  
Date: 2022.02.17 10:18:15 -10'00'

R. E. HARMEYER  
Captain, CEC, U.S. Navy  
Public Works Officer  
By Direction  
of the Commanding Officer

### DOH Guidance for Active Irrigation Line Purging and Flushing

Given the minimal quantities and concentration of fuel contamination in the irrigation lines, along with the expected degradation due to time, the following guidance lines are being provided:

System operator responsibility:

- Determine what the irrigation system pipe size is (for volume calculations).
- Calculate the approximate amount of time needed to complete 3 volumetric turnovers of the subject line (est. duration per foot).
- Assess how long each line will need to be purged/flushed based on the above estimates.
- Notify community.
- Cover or otherwise minimize any spray from the system (traffic cone) in order to prevent contact.
- Purge irrigation system under supervision for the estimated duration.
- Allow ground to absorb and dry.
- Notify residents to avoid area for the next 24 hours.
- Prevent/minimize any runoff.
- Prevent contact with the irrigation water.

Navy/Army must develop a standard operating procedure incorporating the above guidance and provide training to personnel responsible for execution of the irrigation line purging/flushing.