

State of Hawaii ANNUAL PUBLIC WATER SYSTEM COMPLIANCE REPORT

Calendar Year 2020

July 19, 2021

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1. Overview of the Drinking Water Program

1.1 Federal Program

The U.S. Environmental Protection Agency (EPA) established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and the 1986 and 1996 Amendments, EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs). For some contaminants, EPA establishes Treatment Techniques (TTs) in lieu of an MCL to control unacceptable levels in water. The EPA also regulates how often public water systems (PWSs) monitor their water for contaminants and report the monitoring results to the states or EPA. Generally, the larger the population served by a water system, the more frequent the monitoring and reporting requirements. In addition, EPA requires PWSs to monitor for unregulated contaminants to provide data for future regulatory development. Finally, EPA requires PWSs to notify their consumers when they have violated these regulations. The 1996 Amendments to the SDWA require consumer notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation and the possibility of alternative water supplies during the violation.

The SDWA applies to the 50 states, the District of Columbia, Indian Lands, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

The SDWA allows states and territories to seek EPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called primary enforcement authority or primacy. For a state to receive primacy, EPA must determine that the state meets certain requirements laid out in the SDWA and the regulations, including the adoption of drinking water regulations that are at least as stringent as the Federal regulations and a demonstration that they can enforce the program requirements.

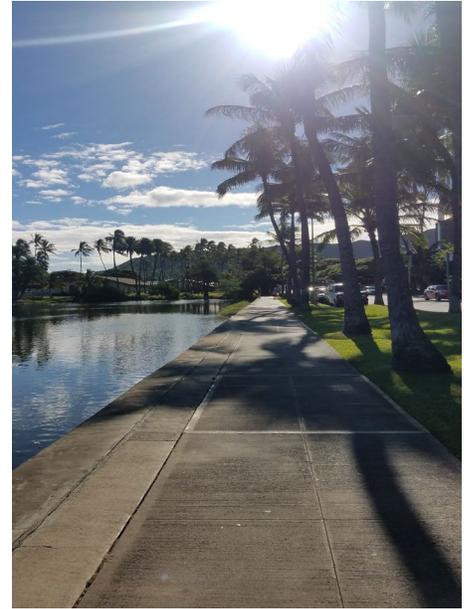
EPA can also set other requirements for states to qualify and maintain primacy. Once a state receives primacy, it has the responsibility to administer all applicable terms of the National Primary Drinking Water Regulations with EPA oversight. In addition, EPA can provide federal funding to states that have been given primacy.

Appendix A-2 lists the rules which EPA currently enforces and their effective dates.

1.2 Hawaii Program

Hawaii's drinking water program was created in 1976, when the state Safe Drinking Water Act (Chapter 340E, Hawaii Revised Statutes) was adopted. The state act is similar to the federal legislation and establishes two separate programs, one for supervision of public water systems, and the other for the protection of underground sources of drinking water from pollution.

The State of Hawaii Department of Health (DOH) was first granted primary enforcement authority over public water systems within the state pursuant to the federal SDWA in January 1978.



1.3 Public Water Systems¹

A public water system (PWS) is defined as a system that provides water for human consumption via piping or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people. The different types of water systems are defined below.

- **Community Water System (CWS)**

A PWS that serves the same people year-round. Examples include cities such as Wailuku and communities such as Hawaiian Beaches.

- **Non-Transient Non-Community Water System (NTNC)**

A PWS that serves the same people more than six (6) months per year, but not year-round. Examples include schools such as Punahou School and businesses such as Mililani Memorial Park.

- **Transient Non-Community Water System (TNC)**

A PWS that serves the public but not the same individuals for more than six (6) months. Examples include the Hawaii Nature Center and Polihale State Park.

- **Wholesale Water System**

¹ United States Code, Title 42, Section 300f (42 U.S.C. §300f et seq.)

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A PWS that supplies water to one or more PWSs for resale, such as the Honolulu Board of Water Supply, Honolulu-Windward-Pearl Harbor system that supplies water to the Marine Corps Base Hawaii.

- **Consecutive Water System**

A PWS that does not have its own drinking water source, but receives water from a wholesale water system. The Marine Corps Base Hawaii is a consecutive water system.

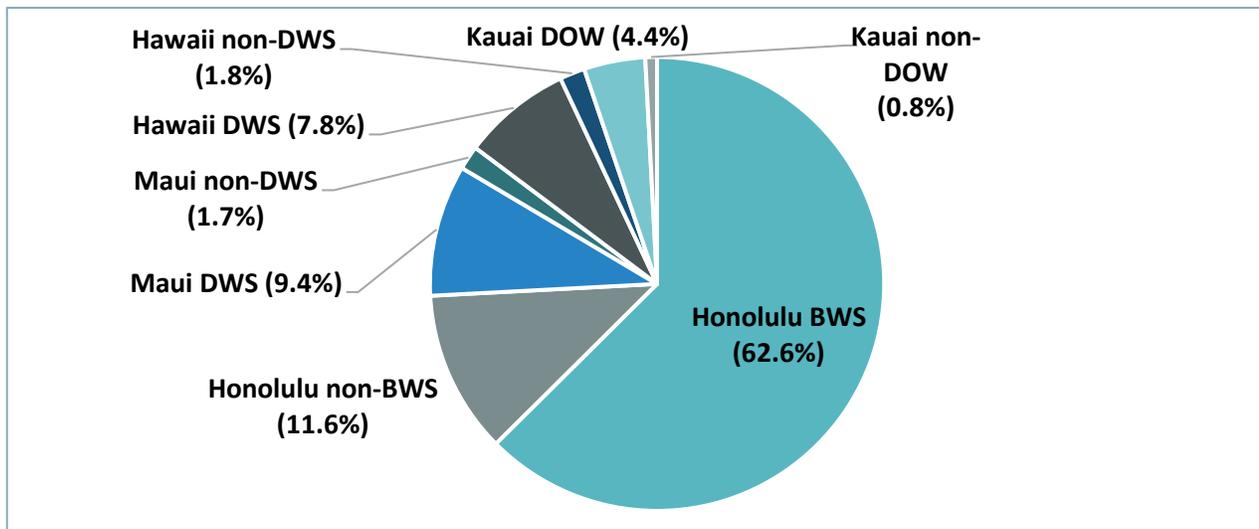
As of December 31, 2020, there were 138 regulated public water systems in Hawaii. Table 1 shows the number of systems in each county, by the number of county water department systems (such as Hawaii Department of Water Supply (DWS)), and non-county systems (state, federal and private water companies).

TABLE 1: NUMBER OF WATER SYSTEMS IN EACH COUNTY

County	Water Department	No. of Systems	Water Purveyor	No. of Systems
Hawaii	Hawaii DWS	23	Hawaii non-DWS	17
Maui	Maui DWS	12	Maui non-DWS	28
Honolulu	Honolulu BWS	8	Honolulu non-BWS	31
Kauai	Kauai DOW	9	Kauai non-DOW	10
	County Total	52	Non-County Total	86

Figure 1 shows Hawaii's service population broken down by county water department and non-county entity (state, federal or private water company).

FIGURE 1: HAWAII PWS BY SERVICE POPULATION



1.4 Sources of Drinking Water

Most Hawaii PWSs use ground water as their primary source of supply. Table 2 shows the number and percentage of systems that use ground and surface water, and the percentage of population served by each type of source water. Public water systems that use both ground water and surface water sources are categorized as surface water systems by convention. The population of systems served surface water is determined based on breakdowns of ground water vs. surface water served per system provided by the water departments.

TABLE 2: PRIMARY SOURCES OF DRINKING WATER USED BY PUBLIC WATER SYSTEMS

Source	No. of systems	Percent of Systems	Percent by population
Ground Water ²	128	92.8%	88.1%
Surface Water	10	7.2%	11.9%
Total Number of Systems	138		

1.5 Safe Drinking Water Act

Under the 1974 federal SDWA and subsequent reauthorizations in 1986 and 1996, the EPA set national limits on contaminant levels in drinking water for human consumption to protect the health of users. These limits are known as maximum contaminant levels (MCL) and maximum residual disinfectant levels (MRDL). For some regulations, treatment techniques (TTs) or action levels (ALs) have been established in lieu of an MCL to control levels of specific contaminants in drinking water. Water systems are also regulated as to the frequency of monitoring and the reporting (M/R) of water quality or rule compliance. Systems can incur a violation for failure to collect required samples during a monitoring period (monitoring violations) or failure to report sample results or rule compliance in the required manner (reporting violations).

There are three basic types of violations that a water system can incur:

- **MCL Violation**

Primary drinking water standards have been adopted by the DOH for contaminants that may be found in drinking water supplies in Hawaii. These limits are known as MCLs and are necessary to protect the public from acute and chronic health risks associated with consuming water containing these contaminants.

² Catchment systems are treated as groundwater systems.

- **TT Violation**

Treatment techniques and performance standards have been adopted to provide safe drinking water in instances where adoption of a specific MCL may be impractical or impossible. Treatment techniques are a proven means to reduce the risk from various contaminants by closely controlling the treatment processes.

- **Monitoring and/or Reporting Requirement (M/R) Violation**

A water system is required to monitor and verify that the levels of contaminants present in the drinking water supplies do not exceed an MCL. A monitoring violation occurs when a water system fails to have its water tested as required within a compliance period. A reporting violation occurs when a water system fails to report test results in a timely fashion to the regulatory agency, or fails to provide certification that mandated information was provided to the public, such as through the issuance of a public notice or the annual Consumer Confidence Report (CCR). A water system that fails to perform required monitoring for a group of chemicals (such as synthetic organic chemicals or volatile organic chemicals) would incur a violation of Monitoring and Reporting Requirements for each of the individual chemicals within this group.

The SDWA requires PWSs to notify their consumers when a drinking water standard has been violated, including MCL, TT, AL, and M/R requirements. Notifications must include:

- A clear and understandable explanation of the nature of the violation,
- The potential adverse health effects from the violation,
- The steps that the water system is undertaking to correct the violation, and
- The possible use of alternative water supplies available during the violation.

1.6 Annual Compliance Report

Section 1414(c)(3) of the federal Safe Drinking Water Act requires states to provide the EPA and the public with an annual report of violations of the federally-adopted primary drinking water standards. This report provides the numbers of violations in each of six categories: MCLs, MRDLs, TTs, variances and exemptions, significant monitoring and/or reporting violations, and significant public or consumer notification violations. Significant monitoring and/or reporting violations occur when no samples are taken, or no results are reported during a compliance period. A significant public notification or CCR notification violation occurs when a public water system completely fails to provide the required notification to its customers or to the public.

1.7 Data Presented in this Report

Each quarter, primacy states submit data to the Safe Drinking Water Information System (SDWIS/FED), an automated database maintained by EPA. The data submitted include, but are not limited to, PWS inventory information, the incidence of MCL, Maximum Residual Disinfectant Level,

monitoring, and TT violations for regulated contaminants; violations concerning public and consumer notification; information on enforcement activities related to these violations, and data associated with the Lead and Copper Rule. Data submitted to SDWIS/FED forms the basis of this Annual Compliance Report.

The 2020 Annual Compliance Report compiles violations for the following rule families:

- Revised Total Coliform Rule (RTCR)
- Surface Water Treatment Rule (SWTR), including the Filter Backwash Rule, Interim Enhanced SWTR, Long Term 1 Enhanced SWTR, and Long Term 2 Enhanced SWTR
- Ground Water Rule (GWR)
- Inorganic Contaminants (IOC)
- Synthetic Organic Contaminants (SOC)
- Volatile Organic Contaminants (VOC)
- Disinfectants and Disinfection By-Products Rule (DBPR), including Stage 1 DBPR and Stage 2 DBPR
- Lead and Copper Rule (LCR)
- Radionuclides Rule (RAD)
- Public Notification Rule (PN)
- Consumer Confidence Report Rule (CCR)
- Variances and Exemptions (V&E)

2. Review of 2020 Violation Data

2.1 Overview of Violations for Calendar Year 2020

In 2020, ten (10) violations were incurred by Hawaii public water systems. Three of the violations were for failing to meet an MCL or TT, six (6) were significant M/R violations. Table 3 shows the number of violations by category for MCL/TT and M/R requirements for calendar years 2020 and 2019.

TABLE 3: NUMBER OF VIOLATIONS BY CATEGORY FOR MCLs / TT, AND SIGNIFICANT M/R

Category	2020		2019	
	MCL/TT	M/R	MCL/TT	M/R
Revised Total Coliform Rule	0	1	0	0
Surface Water Treatment Rule	3	2	3	0
Synthetic Organic Contaminants Rule	0	0	0	5
Groundwater Rule	0	1	0	0
Disinfection By-Products Rule	0	2	0	2
Lead and Copper rule	1	0	0	0

2.2 Overview of Public Water System Compliance for Calendar Year 2020

This section provides an overview of violations incurred by public water systems for the federal violation categories described in section 1.7. In 2020, two (2) water systems violated at least one drinking water standard. Two (2) water systems violated a TT, and three water systems violated an M/R requirement.

A summary of the 2020 drinking water MCL, TT, and significant M/R violations, sorted by rule family, is shown in Table 4. For this Annual Compliance Report, EPA has deemed that significant M/R violations are reportable. A M/R violation is significant if no samples were collected in the monitoring period.

TABLE 4: SUMMARY OF VIOLATIONS BY RULE FAMILY

Rule Family	Rule	Violation Category	No. of Violations	No. of Water Systems
RTCR	Revised Total Coliform Rule	MCL Violation, E. coli	1	1
SWTR	Surface Water Treatment Rule	TT (could not determine if CT was met, or turbidity limit was met)	3	2
GWR	Groundwater Rule	Monitoring and Reporting	1	1
DBP	Stage 2 Disinfectants and Disinfection By-Products Rule	Monitoring and Reporting	1	1
LCR	Lead and Copper Rule	TT (90 th percentile value of lead exceeded the Action Level)	1	1

A summary of the violations, with the water system names and listed in the same rule order, is provided in Appendix A-3.

2.3 Discussion of Violations

Hawaii's annual compliance report is based on State records and the violations submitted to the federal EPA SDWIS database.

The state issued violation letters to all systems which incurred violations in 2020. The water purveyors subsequently issued public notices to inform the public of the violations.

Revised Total Coliform Rule

A PWS on Oahu incurred a RTCR violation for getting an *E. coli* positive sample following a total coliform positive. The system returned to compliance in January 2020.

Surface Water Treatment Rule

One water system on Oahu incurred two (2) TT violations, one in March 2020, and another in December 2020. For March 2020, the TT violation was due to failing to demonstrate that the residual disinfectant concentration in the water entering the distribution system was greater than or equal to 0.2 mg/L, and that the turbidity level of representative samples of the system's filtered water was less than or equal to 1 NTU at all times and less than or equal to 0.3 NTU in at least 95 per cent of the measurements taken each month. For December 2020, the TT violation was for failing to demonstrate that the system is meeting the disinfection criteria required to determine contact times and total inactivation ratio of 1.0 or greater and allowing the measured residual disinfectant concentration in the water entering the distribution system to be less than 0.2 mg/L for more than four (4) hours. That PWS returned to compliance in April 2020 and February 2021, respectively.

Another system incurred one (1) TT violation in May 2020 and returned to compliance that same month. The TT was for exceeding 1 NTU in the combined filter effluent.

Ground Water Rule

One PWS on Oahu incurred a GWR violation in January 2020 for failing to collect a Triggered Source Water Monitoring sample within 24 hours of being notified of a final total coliform positive sample result. The system returned to compliance in January 2020.

Inorganic Chemicals and Organic Chemicals

There were no MCL violations for any of the 69 contaminants regulated under the Phase I Volatile Organic Chemical, or Phases II and V Synthetic Organic/Inorganic Chemical Rules.

Disinfectant/Disinfectant By-Product Chemicals

One water system incurred significant monitoring violations for missing Total Trihalomethane and Total Haloacetic Acids (Five) sampling in the one-year compliance period ending in 2020. The system returned to compliance in February 2021.

Lead and Copper Rule

One water system incurred one (1) TT violation for a 90th percentile value of lead exceeding the action level in September 2020 and returned to compliance in May 2021.

Radiological Contaminants

There were no MCL violations for Radiological contaminants and no significant M/R violations. The next Radionuclides monitoring period for most CWS ends on December 31, 2025.

Public Notification Rule

There were no violations of the Public Notification Rule.

Consumer Confidence Report Rule

All community water systems complied with the rule by delivering an annual water quality or CCR.

Variations and Exemptions Rule

No variations or exemptions were granted by the State of Hawaii, and no variations or exemptions were already in existence. Therefore, there were no violations of variations or exemptions.

2.4 Hawaii-Specific Standards

One contaminant (1,2,3-Trichloropropane) is regulated by the State of Hawaii but not by the EPA, i.e. the contaminant has a state MCL but no federal MCL. Two contaminants (Ethylene dibromide and Dibromochloropropane) are regulated at a more stringent (lower) state MCL than the federal MCL.

TABLE 5: FEDERAL MCL VS. HAWAII STATE MCL

Contaminant	Federal MCL	State MCL
1,2,3-Trichloropropane	None	0.0006 milligrams/Liter (mg/L)
Ethylene Dibromide	0.00005 mg/L	0.00004 mg/L
Dibromochloropropane	0.0002 mg/L	0.00004 mg/L

There were no violations of the Hawaii-specific standards in 2020.

3. Conclusion

The DOH Safe Drinking Water Branch (SDWB) is the primacy agency responsible for administration and enforcement of the Safe Drinking Water Act requirements in Hawaii. The SDWB undertakes several activities to implement this program, including conducting sanitary surveys (inspections) of the water systems, monitoring for compliance with regulations, and taking enforcement action when violations are identified.

Water systems in Hawaii continue to have a very high rate of compliance with drinking water regulations.

The DOH continues to track compliance, ensure that the public is notified of violations, provide technical assistance to public water systems to address violations, and provide funding assistance to public water systems that are capable of undertaking planning or construction projects in order to address violations.

3.1 Drinking Water Compliance Activities

The DOH has implemented several projects to improve the tracking and reporting of water quality monitoring data, assist water systems with meeting their regulatory monitoring requirements, and ensure compliance with the drinking water regulations.

The DOH Environmental Health Administration, SDWB, and an information technology consultant partnered in 2012 to design and develop the Sample Analysis Tracking System (SATS) which implemented a data exchange from the DOH State Laboratories Division to the SDWB's SDWIS/State information management system.

The Sample Collection and Reservation System (SCRS) was developed in 2013 to provide PWSs with a comprehensive source of information and tools they need to meet their compliance monitoring obligations. A PWS can review its monitoring requirements and schedule analyses with the State Laboratories Division.

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The SDWIS Viewer was developed to give users the ability to query drinking water system, facility and sample point data and return results in a tabular and/or spatially enabled format.

In 2019, the branch began the process to implement the EPA's Compliance Monitoring Data Portal (CMDP), which will enable laboratories to electronically transmit water quality monitoring data to SDWIS/State. The portal will replace the current paper and CD-based methods of drinking water quality monitoring data reporting by external laboratories.

3.2 Obtaining a Copy of this Report

As required by the SDWA, Hawaii has made the 2020 Annual Public Water System Compliance Report available to the public. Interested individuals can obtain a copy of the 2020 Annual Public Water System Compliance Report for Hawaii by accessing the DOH/SDWB Website:

<http://health.hawaii.gov/sdwb/newsletters/>.

Responsible State Department

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Appendices

A-1. Glossary

A-2. Safe Drinking Water Rules and Effective Dates

A-3. Summary of Violations by Rule and Water System

A-1. Glossary

<u>Term</u>	<u>Definition</u>
Community Water System (CWS)	A PWS that serves the same people year-round.
Consumer Confidence Report (CCR)	An annual summary of water quality data collected during the year for a particular CWS, sent from the CWS to its consumers. The report includes educational material, information on the source water(s), levels of any detected contaminants, and any issues in complying with the drinking water regulations.
Disinfection Byproducts (DBP)	Also called trihalomethanes, are formed when chlorine and bromine interact with natural organic materials in water
Public Notification Rule (PNR)	This rule requires all PWS to notify its consumers any time a PWS violates a national primary drinking water regulation or has a situation posing a risk to public health. The timeframe in which a PWS must notify the public depends on the risk posed by the violation or situation. Notices must be provided to persons served (not just billing consumers).
Public Water System (PWS)	A system that provides water for human consumption via piping or other constructed conveyances to at least 15 service connections, or serves an average of at least 25 people. A public water system may be publicly or privately owned.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the MCL Goals as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water. In Hawaii, there is one MCL for a contaminant which EPA does not regulate: 1,2,3-Trichloropropane (TCP). In Hawaii, there are two MCLs for federally regulated contaminants that are lower than the federal MCL (more stringent). These MCLs are for 1,2-Dibromo-3-chloropropane (DBCP) and Ethylene dibromide (EDB).
Maximum Residual Disinfectant Level (MRDL)	The EPA sets national limits on residual disinfectant levels in drinking water to reduce the risk of exposure to disinfectant byproducts formed when public water systems add chemical disinfectant for either primary or residual treatment.

<u>Term</u>	<u>Definition</u>
Monitoring and Reporting (M/R)	A water system is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCLs. A monitoring violation occurs when the system fails to have its water tested as required or fails to report test results correctly to the DOH.
Non-transient noncommunity (NTNC)	A PWS that serves the same people more than six (6) months per year, but not year-round. This may include schools, businesses or other facilities.
Safe Drinking Water Act (SDWA)	A law established in 1974 to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources.
Significant Monitoring or Reporting Violations (M/R)	For this report, EPA defined significant monitoring or reporting violations as occurring when required samples were not taken, or results not reported.
Transient non-community (TNC)	A PWS that serves the public but not the same individuals for more than six (6) months.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water in lieu of an MCL. For example, TTs have been established for the treatment of surface waters to control the level of viruses and bacteria.

A-2. Safe Drinking Water Rules and Effective Dates

	RULE	PROMULGATION DATE	EFFECTIVE DATE
1	Phase I Volatile Organic Chemical Rule	7/8/1987	1/9/1989
2	Total Coliform Rule	6/29/1989	12/31/1990
3	Surface Water Treatment Rule	6/29/1989	12/31/1990
4	Lead and Copper Rule	6/7/1991	12/7/1992
5	Phase II Synthetic Organic/Inorganic Chemical Rule	1/30/1991	1/1/1993
6	Phase V Synthetic Organic/Inorganic Chemical Rule	7/17/1992	1/1/1993
7	Stage 1 Disinfectant/Disinfection By-Products Rule	1/16/1998	2/16/1999
8	Consumer Confidence Reports Rule	8/19/1998	10/19/1999
9	Lead and Copper Rule Minor Revisions	9/20/1999	4/11/2000
10	Public Notification Rule	5/4/2000	6/5/2000
11	Unregulated Contaminant Monitoring Rule	9/17/1999	1/1/2001
12	Interim Enhanced Surface Water Treatment Rule	12/16/1998	1/1/2002
13	Long Term 1 Enhanced Surface Water Treatment Rule	1/14/2002	2/13/2002
14	Revised Radionuclides Rule	12/7/2000	12/8/2003
15	Filter Backwash Rule	6/8/2001	6/8/2004
16	Arsenic and Clarifications to Compliance and New Source Monitoring Rule	1/22/2001	1/23/2006
17	Long Term 2 Enhanced Surface Water Treatment Rule	1/5/2006	3/6/2006
18	Stage 2 Disinfectant/Disinfection By-Products Rule	1/5/2006	3/6/2006
19	Ground Water Rule	10/11/2006	12/1/2009
20	Revised Total Coliform Rule	2/13/2013	4/1/2016

A-3. Summary of Violations by Rule and Water System

Monitoring Period (Year-Mo)	PWS ID	PWS Name	Violation Type (no. of violations)	Comments
RTCR				
2020-01	368	Waiahole	RTCR E. coli (1)	Total positive followed by an E. coli positive
SWTR				
2020-05	213	Makawao	SWTR TT (1)	Turbulence MCL exceeded
2020-03, 2020-12	320	Mililani Memorial Park	SWTR TT and M/R (2)	Did not monitor for part of the monitoring period
GWR				
2020-01	368	Waiahole	TSWM M/R (1)	Did not collect TSWM sample in a timely fashion
DBPs				
2020-12	230	Hoolehua	DBP M/R (1)	No samples were collected for Total THMs and Total HAA5s
LCR				
2020-09	144	Kilauea Military Camp	LCR RR (1)	90 th Percentile value of lead exceeded the Action Level