

THE WATER SPOT

HAWAII STATE DEPARTMENT OF HEALTH • SAFE DRINKING WATER BRANCH

ANNOUNCING WATER LOSS AUDIT PROGRAM PHASE 2: PRIVATE, STATE & FEDERAL SYSTEMS

NEAL FUJII

COMMISSION ON WATER RESOURCE MANAGEMENT

The Commission on Water Resource Management (CWRM) recently completed Phase 1 of its water audit program culminating in the receipt of validated AWWA water audits from 45 discrete county-owned Public Water Systems (PWSs). CWRM will soon begin Phase 2 of the program focusing on the second group of PWSs, which includes private, state and federal systems serving a population of 1,000 or more and those within water management areas (WMA).

In 2017 the CWRM initiated its water audit program with \$600,000.00 of funding from the Drinking Water State Revolving Fund Local Assistance 15% Set-Aside and \$100,000.00 of private funding. Act 169, Session Laws of Hawaii 2016, requires CWRM to establish a water audit program to provide technical assistance to around 100 PWSs in Hawaii. Act 169 also requires these affected PWSs to complete and submit annual water audits to CWRM. Act 169 identifies two groups of PWSs that are required to submit audits: (1) county-owned PWSs, and (2) large capacity PWSs (1,000 or more population served) and those within water management areas.

Act 169 Requirements



What is a Water Audit?

A water audit is a mass balance analysis starting with the volume of water entering the system and the volume of water leaving the system. Key in the analysis is the source meter and customer meter data which form the foundation of the water balance. All

SEE WATER LOSS AUDIT PHASE 2, PAGE 2

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In this issue:

Training Opportunities	2-3	Operator Certification	5-7
Quarterly Calendar	4	DWSRF	7

WATER LOSS AUDIT PHASE 2

CONTINUED FROM PAGE 1

the water entering and leaving the system can be accounted for using meter data while making careful estimates and deductions regarding system variables. This makes the term “unaccounted-for water” obsolete since all water is now accounted for when following the AWWA water audit methodology. System losses can be categorized into real and apparent losses. Real losses are the physical leaks. Apparent losses can be attributed to many factors, but are commonly caused by inaccurate meters and data handling errors. AWWA has standardized the water balance in its M36 publication.

The AWWA method systematically breaks down the water balance into its fundamental elements. To simplify data inputs, AWWA also developed free water audit software based on Microsoft Excel to facilitate water audit completion. The software produces a suite of outputs which will help utility managers identify actions that can be taken to reduce system losses and improve data validity. Important outputs include system performance indicators, cost (in dollars) to the utility from real and apparent water losses, and prioritized action recommendations.

How Does the Water Audit Program Work?

CWRM’s water audit program is comprised of four elements (Waves) and will provide free training and technical assistance to utilities for completing AWWA water audits. The program is designed to build a utility’s internal capacity and provide a fundamental understanding of water audits and loss control programs. The goal is to enable all affected utilities to submit annual, validated water audits to CWRM on a timely basis. The Phase 2 water audit program is tentatively scheduled as follows:

Phase 2 Tentative Schedule		
Waves	Timeframe	Content
Wave 1 Outreach & Introductory Hands-on Workshops	1 st quarter 2019	<ul style="list-style-type: none"> ◆ Water audit basics ◆ Data validity ◆ Water audit exercise ◆ System boundaries ◆ Tabletop exercise
Wave 2 Follow-up Conference Calls with Each Utility	2 nd quarter 2019	<ul style="list-style-type: none"> ◆ Data validity score evaluation ◆ Supporting documentation ◆ Technical memos for each sub-system
Wave 3 Outreach & Intermediate Hands-on Workshops	1 st quarter 2020	<ul style="list-style-type: none"> ◆ Audit review ◆ Data validation ◆ Data compilation ◆ “Official” audit prep
Wave 4 Follow-up Conference Calls with Each Utility	2 nd quarter 2020	<ul style="list-style-type: none"> ◆ Level 1 validation ◆ Audit review ◆ Completed Level 1 validated audit for submission to CWRM

WATER LOSS AUDIT PHASE 2

CONTINUED FROM PAGE 2

By the end of this training, each utility will be able to complete an AWWA water audit for each of their public water systems and submit them to the Commission on an annual basis.

Workshops will be held on each island beginning in the 1st quarter of 2019. CWRM will be sending workshop invitations with dates and locations and conduct a kickoff webinar to provide more information and answer questions on this exciting program.

So I Have a Completed Water Audit, What's Next?

Water audits are an important first step in designing a comprehensive water loss control program. The water audits will provide a utility with important information on how best to proceed. It is common for utilities who have completed their first AWWA water audit to discover that they need to work on improving their data management. Some utilities may find that it would be important to begin leak detection or customer meter management to recover real or apparent losses, respectively. You may also wish to contact a water loss professional for help with intervention measures. Each utility is unique, and the audits are a powerful tool to help utilities design a cost-effective water loss control program that meets their needs and will ultimately result in both water and cost savings.

HRWA
CEU Training Program
 for
Water System Operators



Contact hrwaoffice@hawaiiirwa.org or 808-315-8925 for registration information.

Course	CEUs	Date	Location	Fee PWS Employee
Overview of Water Storage Facilities O&M & BMPs	0.6	10/30/18	Hilo	\$320
Overview of Water Storage Facilities O&M & BMPs	0.6	11/1/18	Kauai	\$320
Overview of Water Storage Facilities O&M & BMPs	0.6	11/13/18	Oahu	\$320
Overview of Water Storage Facilities O&M & BMPs	0.6	11/14/18	Maui	\$320
Overview of Water Storage Facilities O&M & BMPs	0.6	11/15/18	Molokai	\$320

DSO Exam Review Class ^{by} HRWA

- October 1-5 ♦ Oahu ♦ Grades 1-4 ♦ SDWB, Pearl City
- October 2-3 ♦ Big Island ♦ Grades 1-2 ♦ Waimea Center, Kamuela
- October 8-9 ♦ Kauai ♦ Grades 1-2 ♦ Kauai County DOW, Lihue
- October 15-19 ♦ Oahu ♦ Grades 1-4 ♦ Pacific Pipe, Pearl City

Contact HRWA at hrwaoffice@hawaiiirwa.org or 808-315-8925 for details and registration information.

QUARTERLY CALENDAR

- ◆ **10/1-5 Oahu DSO Exam Review**
- ◆ **10/2-3 Waimea DSO Exam Review**
- ◆ **10/8-9 Kauai DSO Exam Review**
- ◆ **10/10 CT Report Due**
Surface Water Systems
- ◆ **10/10 MRDL Report Due**
Disinfection Systems who complete their own tests
- ◆ **10/10 TCR Report Due**
Systems who complete their own tests
- ◆ **10/10 Chemical Quarterly Monitoring Report Due**
Systems with quarterly monitoring requirements
- ◆ **10/15-19 Oahu DSO Exam Review**
- ◆ **10/22-24 DSO Exam**
Kona, Maui, Oahu, Hilo & Kauai
- ◆ **10/22 WTPO Applications Due**
January Examinees
- ◆ **10/22 WTPO Exam Registrations Due**
January Examinees
- ◆ **11/9 CT Report Due**
Surface Water Systems
- ◆ **11/9 TCR Report Due**
Systems who complete their own tests
- ◆ **11/16 DSO & WTPO Renewals Due**
Selected Operators
- ◆ **11/27 Board of Certification Meeting**
SDWB Pearl City, 10:00 am
- ◆ **12/10 CT Report Due**
Surface Water Systems
- ◆ **12/10 TCR Report Due**
Systems who complete their own tests

OCTOBER 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Oahu DSO Exam Review	2 Oahu & Waimea DSO Exam Review	3 Oahu & Waimea DSO Exam Review	4 Oahu DSO Exam Review	5 Oahu DSO Exam Review	6
7	8 Kauai DSO Exam Review	9 Kauai DSO Exam Review	10 CT Report Due MRDL Report Due TCR Report Due Chemical Quarterly Monitoring Report Due	11	12	13
14	15 Oahu DSO Exam Review	16 Oahu DSO Exam Review	17 Oahu DSO Exam Review	18 Oahu DSO Exam Review	19 Oahu DSO Exam Review	20
21	22 Kona & Maui DSO Exam WTPO Applications Due WTPO Exam Registrations Due	23 Oahu & Hilo DSO Exam	24 Kauai DSO Exam	25	26	27
28	29	30	31			

NOVEMBER 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6 HOLIDAY	7	8	9 CT Report Due TCR Report Due	10
11	12 HOLIDAY	13	14	15	16 DSO & WTPO Renewals Due	17
18	19	20	21	22	23	24
25	26	27 Board of Certification Meeting	28	29 HOLIDAY	30	

DECEMBER 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10 CT Report Due TCR Report Due	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25 HOLIDAY	26	27	28	29
30	31					

HAR 11-25, RULES RELATING TO CERTIFICATION OF PUBLIC WATER SYSTEM OPERATORS, AMENDED

The amendments to Hawaii Administrative Rules Title 11, Chapter 25, “Rules Relating to Certification of Public Water System Operators” has been approved by the governor. The public hearing for revisions to Chapter 25 was held on May 8, 2018, and the public comment period closed on May 9, 2018, with one comment made in strong support for the proposed changes. The rules were adopted upon the governor’s final approval and took effect on August 10, 2018.

The significant changes are summarized as follows:

1. The continuing education unit definition was revised to bring Hawaii’s standards into line with the national standard, however the number of contact hours that an operator needs to earn to maintain certification did not change.
2. The initial certification period after examination was altered after an operator passes an exam in order to place the operator in their correct certification expiration year as soon as possible.
3. Certification fees were increased for the first time since program initiation in 1993 to make the program better supported financially.

	New Fee
Certification Application	\$30
Exam Registration	\$70
Reciprocity Application	\$100
Renewal	\$20/year

The original fees published on all 2018 applications, exam registrations, and renewals will be in effect until the end of the year. New fees listed in the table to the left will be effective in 2019 starting with the Water Treatment Plant Operator exam in January.

WTPO PASS RATE OF 25% FOR NEW EXAM

Examinees sat for the newly issued Water Treatment Plant Operator (WTPO) standardized exams from the Association of Boards of Certification (ABC) in July. The overall pass rate was 25%. Congratulations to those who passed!

Grade	Passed	Examinees	Passing Rate
1	2	10	20%
2	2	6	33%
4	1	4	25%
Total	5	20	25%

Studying efforts were directed to the new Need-to-Know Criteria, and many borrowed the American Water Works Association (AWWA) Water System Operations training material from the Operator Library to study from.

For those who would like to re-take the exam in January, please submit your exam registration form and \$70 fee. The fee has been increased upon the adoption of amendments to Hawaii Administrative Rules Title 11, Chapter 25. Registration and fee payment is due by October 22, 2018.

OPERATOR CERTIFICATION



PASS YOUR CERTIFICATION EXAM

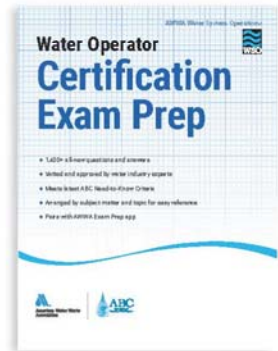
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- Vetted and approved by experts
- Meets latest ABC Need-to-Know Criteria
- Arranged by subject matter and topic for easy reference



AWWAexamprep.com



American Water Works Association



OPERATOR CERTIFICATION

DWSRF

2018 DSO & WTPO RENEWALS

DSO and WTPO certifications will be expiring on November 30, 2018. If your certification is one of them, the final renewal notice was mailed to you in September. Take a look at your ID cards now and renew before the deadline of November 16, 2018.

Don't delay in renewing. After December 31, 2018, the renewal fee doubles. After November 30, 2019, you will lose your certification and will need to re-take and pass the exam to become certified again.

**2018
DSO & WTPO
RENEWALS
DUE
11/16/18**

Renewal fees of \$10 per year, which were published on all 2018 renewal forms, will be accepted until the end of the year. Renewal fees submitted in 2019 and beyond will be doubled to \$20 per year, in accordance with the newly amended Hawaii Administrative Rules Title 11, Chapter 25.

DWSRF - FREE OPPORTUNITY FOR PRIVATELY-OWNED PUBLIC WATER SYSTEMS

The Drinking Water State Revolving Fund (DWSRF) is continuing to work toward its goal of executing its first privately-owned public water system loan in State Fiscal Year 2019, which ends on June 30, 2019. There has been an exciting amount of interest from private water systems, especially for the principal forgiveness (zero percent loans) incentive in this first year. Proposed projects include finished storage tank replacements, waterline replacements, water meter replacements, SCADA upgrades, and more.

The Engineering Services Contract (ESC) is also in the works, providing private systems with an opportunity to receive free professional engineering services for their water system. This includes pre-construction work such as a full drinking water system assessment, proposing upgrades, performing the required environmental reviews for projects, and design for the project. This is perfect for those water systems that realize the importance of updating their water infrastructure but aren't sure where or how to start.

If there are any private water systems interested in learning more about the DWSRF and taking advantage of the limited ESC opportunity, please contact Joan Corrigan of the Safe Drinking Water Branch at joan.corrigan@doh.hawaii.gov or 808-586-4258.

**Be prepared for the next hurricane -
Click for [EPA's Hurricane Incident Action Checklist](#)**



**HAWAII STATE
DEPARTMENT OF HEALTH
SAFE DRINKING WATER
BRANCH**

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Director of Health

KEITH E. KAWAOKA, D. Env.
Deputy Director for Environmental Health

The mission of the Safe Drinking Water Branch of the Department of Health is to safeguard public health by protecting Hawaii's drinking water sources (surface water and groundwater) from contamination and assure that owners and operators of public water systems provide safe drinking water to the community. This mission is accomplished through the administration of the Safe Drinking Water Program, Underground Injection Control Program (UIC), Groundwater Protection Program (GWPP), and the Drinking Water State Revolving Fund (DWSRF).

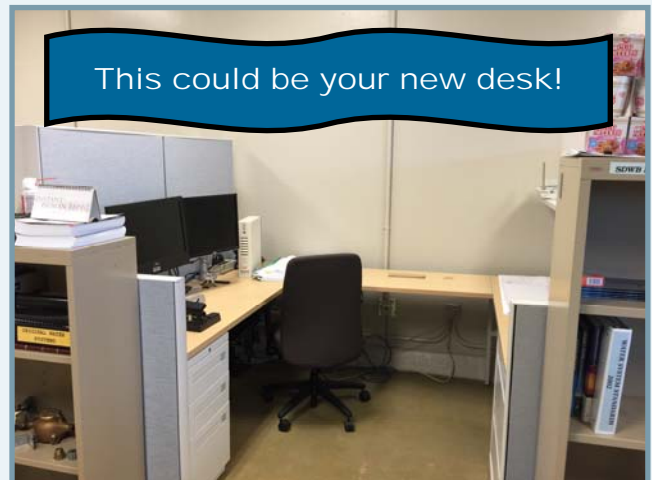
We're on the Web!

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

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**ENGINEERING EMPLOYMENT
OPPORTUNITY AT SDWB**

Tired of fighting traffic (and the sun) every day from Leeward Oahu into town and back? Think the grind in town is shortening your life span? Looking for a better pace and quality of life in a regular 8-hour workday, while working in a fulfilling, mission-oriented State agency?



Contact Joanna Seto, Mike Miyahira, or Ann Zane at the Hawaii Department of Health Safe Drinking Water Branch, located on beautiful Waimano Ridge in upper Pearl City at 808-586-4258. Get A Life!