



**STATE OF HAWAII**  
**DEPARTMENT OF HEALTH**  
P. O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:

December 23, 2021

The Honorable Ronald D. Kouchi,  
President and Members of the Senate  
Thirty-first State Legislature  
State Capitol, Room 409  
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker  
and Members of the House of  
Representatives  
Thirty-first State Legislature  
State Capitol, Room 431  
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the "Annual Report of the Activities of the Board of Certification of Operating Personnel in the Wastewater Treatment Facilities, State Fiscal Year 2021," pursuant to Section 340B-12, Hawaii State Revised Statutes (HRS).

In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at:

<https://health.hawaii.gov/opppd/departments-of-health-reports-to-2022-legislature/>

Sincerely,

A handwritten signature in black ink, appearing to read "Elizabeth A. Char", followed by a horizontal line.

Elizabeth A. Char, M.D.  
Director of Health

Enclosures

c: Legislative Reference Bureau  
Hawaii State Library System (2)  
Hamilton Library

**REPORT TO THE THIRTY-FIRST LEGISLATURE  
STATE OF HAWAII  
2022**

**PURSUANT TO SECTION 340B-12, HAWAII REVISED STATUTES,  
REQUIRING THE DEPARTMENT OF HEALTH TO PROVIDE  
AN ANNUAL REPORT OF THE ACTIVITIES OF THE  
BOARD OF CERTIFICATION OF OPERATING PERSONNEL IN  
WASTEWATER TREATMENT FACILITIES,  
STATE FISCAL YEAR 2021**

**PREPARED BY:  
STATE OF HAWAII  
DEPARTMENT OF HEALTH  
BOARD OF CERTIFICATION OF OPERATING PERSONNEL IN  
WASTEWATER TREATMENT FACILITIES  
DECEMBER 2021**

# **BOARD OF CERTIFICATION OF OPERATING PERSONNEL IN WASTEWATER TREATMENT PLANT FACILITIES**

## **EXECUTIVE SUMMARY**

The Board of Certification of Operating Personnel in Wastewater Treatment Plants (Board) conducted six meetings during the state fiscal year (SFY) 2021. In these meetings there were abundant agenda items, time constraints, and budget concerns. The Board was able to make progress on but not complete tasks seen as important including organizing its files/records. The Board continued offering computer-based testing model (CBT) for operator certification exams. The CBT exams are an option to paper exams that are recently became available on Oahu, Maui, Kauai and Hawaii islands. There was no time available to discuss proposed changes to certification rules under chapter 11-61, Hawaii Administrative Rules (HAR).

Written operator certification examinations were administered by Board members statewide in the month of August 2020 to 22 applicants, with three (3) successfully passing the examinations, for an overall passing rate of 14%. The SFY 2020 passing rate was slightly lower at 11%.

In SFY 2022, the written test will only be offered one time in August. Computer-based-tests (CBTs) have become much more popular than written tests. For SFY 2021, there were 73 applicants with 21 passing their examinations for a passing rate of 29%. The passing rate is lower than last year with 66 applicants and 33 passing their examinations for a passing rate of 50%.

- SFY 2021: 95 tests
- SFY 2020: 85 tests
- SFY 2019: 94 tests
- SFY 2018: 120 tests
- SFY 2017: 146 tests

Passing rates for each grade fluctuate over the years. Average passing rates for operators taking Grade 3 and Grade 4 exams are typically lower than for operators taking Grade 1 and Grade 2 exams. This is because Grade 3 and Grade 4 exams require the operator to have more advanced knowledge of the operation and maintenance of a wide variety of WWTP processes (including many that the operators may not have first-hand experience with) and contain more complex problems than the Grade 1 and 2 exams. The passing rates for CBT are much greater than the paper examinations.

A total of 294 WWTP operators have permanent Grade 1 through Grade 4 operator certificates in Hawaii (20120-2022), which is experiencing a downward trend:

- 2020-22: 294
- 2018-20: 312
- 2016-18: 325
- 2014-16: 346
- 2012-14: 385
- 2010-12: 405

This trend is expected to continue, and in the next several years it is anticipated that treatment plants will face a critical shortage of operators due to expected retirements of 37% of the workforce (January 2009 ABC Conference). Nationwide projections for the next four to six years indicate that for every 10 operators retiring only four will be replaced (January 2009 ABC Conference). Incentives and additional training opportunities must be developed to retain senior operators longer, and to recruit and impart the skills needed for junior operators to pass their certification exams.

Significant Board actions during SFY 2021 include:

- Reviewing applications for examinations;
- Conducting one written wastewater operator certification examinations;
- Conducting continuous computer-based, operator certification examinations;
- Classifying WWTPs;
- Evaluating applications for issuing reciprocity certifications;
- Evaluating operator college transcripts, outside training courses, and workshops for granting continuing educational units;
- Implementing chapter 11-61, HAR, for the mandatory certification of operating personnel in WWTPs; and
- Issuing permanent and temporary operator certificates

The State Department of Health established the Statewide Wastewater Operator Training Center (SWOTC) in September 1988. State budget cuts forced elimination of the SWOTC Coordinator position in November 2009. In July 2015, DOH transferred the complete operation and management of the operator training program to the University of Hawaii at Manoa, Water Resources Research Center (WRRC) which now independently runs the SWOTC and offers classes statewide funded by the counties.

Act 238, Session Laws of Hawaii (SLH) 1999 amended chapter 340B Hawaii Revised Statutes to establish the Wastewater Treatment Certification Board Special Fund. The revenues for this fund are generated from monies collected for registration, certificate renewal, reciprocity, and temporary certificates are used specifically for defraying the costs of the operations of the Board. In SFY 2021, \$20,392.97 in revenues was collected. At the end of the fiscal year, a cash balance of \$55,993.91 existed in the fund.

# **SFY 2021 ANNUAL REPORT**

## **BOARD OF CERTIFICATION OF OPERATING PERSONNEL IN WASTEWATER TREATMENT FACILITIES**

### **INTRODUCTION**

Effective operation and maintenance of wastewater treatment works are essential to prevent pollution of the waters of the state and protect public health. Also, the efficient management of wastewater treatment works is an important economic asset to the public, to county and state officials, and to operators. Furthermore, certification of wastewater treatment works operators assures the employment of personnel competent to provide proper operation and maintenance, and efficient and cost effective management of wastewater treatment works.

This Annual Report summarizes the Board of Certification of Operating Personnel in Wastewater Treatment Plants (Board) activities and accomplishments during SFY 2021. It also provides information about the Board's organizational structure.

### **ORGANIZATIONAL STRUCTURE**

The Board is placed, for administrative purposes, in the State Department of Health. The nine members of the Board are appointed by the Governor and confirmed by the Legislature for four-year terms. The present Board is comprised of the following members which include representatives from each of the major counties of the State, as required by section 340B Hawaii Revised Statutes (HRS):

Robert Souza	- Board Chair, Certified Operator, City and County of Honolulu
Roger Babcock Jr	- Faculty, University of Hawaii at Manoa, College of Engineering
Kevin Nakamura	- Certified Operator, private practice
Virgilio Viernes	- Certified Operator, County of Maui
Emily Dong	- Professional Engineer (PE), private practice
Jon Nakashima	- Certified Operator, County of Kauai
Gary Hutchinson	- Hawaii Water Environment Association (HWEA).
Vacant	- Certified Operator, County of Hawaii
Vacant	- Department of Health

The Board member seat representing the county of Hawaii has been vacant since the March 2010 Board meeting. The Board member seat representing the Department of Health has been vacant since November 2020.

### **BOARD MEETINGS DURING SFY 2021**

During SFY 2021, the Board held six meetings on:

September 18, 2020	March 25, 2021
October 30, 2020	May 7, 2021
December 11, 2020	June 24-25, 2021

There has been a noticeable increase in meeting agenda items as operators have become more involved on certification issues than in the past. These additional agenda items require more of the Board's time and have limited the Board's ability to discuss revisions to chapter 11-61, Hawaii Administrative Rules (HAR), which governs the operator certification program.

## SUMMARY OF CERTIFICATION EXAMINATIONS

The Board conducted one paper examination statewide for all grades of wastewater treatment plant (WWTP) operators during SFY 2021. The exam was held in August 2020. The results of this examination are depicted in the following table:

<b>August 2020 Examination</b>			
<b>Grade</b>	<b>Pass</b>	<b>Applicants</b>	<b>Passing %</b>
1	2	7	29
2	1	3	33
3	0	8	0
4	0	4	0
Total	3	22	14

The Board also facilitated continuous CBTs for all grades of operators. Three times as many operators took CBTs as written exams this year as depicted in the following table:

<b>Computer-Based Tests taken during SFY 2021</b>			
<b>Grade</b>	<b>Pass</b>	<b>Applicants</b>	<b>Passing %</b>
1	12	24	50
2	3	15	20
3	5	24	21
4	1	10	10
Total	21	73	29

# COMPARISON OF PASSING PERCENTAGES ON WRITTEN EXAMS

## Statewide

Date of Exam	Grade 1	Grade 2	Grade 3	Grade 4
August 2020	29	33	0	0
August 2019	50	0	0	0
August 2018	33	20	0	20
February 2018	70	17	22	11
August 2017	17	43	13	0
February 2017	46	50	17	31
August 2016	31	17	75	7
February 2016	44	40	18	11
August 2015	43	36	22	0
February 2015	44	28	16	11
August 2014	47	17	18	7
February 2014	57	50	19	8
August 2013	36	39	14	5
February 2013	50	55	62	9
August 2012	60	50	17	29
February 2012	35	25	56	14
August 2011	67	67	42	50
February 2011	55	50	32	4
August 2010	27	24	20	0
February 2010	79	64	31	10
August 2009	46	24	8	5
February 2009	52	45	57	10
August 2008	50	41	10	6
February 2008	50	31	22	9
August 2007	80	40	25	25

## Statistics:

A total of 22 paper examinations were taken in SFY 2021 of which three (3) operators passed their exams for an overall passing rate of 14%. A total of 73 CBTs were taken in SFY 2021 of which 21 operators passed their exams for an overall passing rate of 29%. If the paper and CBTs results are combined, there were 95 exams and 24 passes for a rate of 25%. This is lower than the SFY 2020 passing rate of 38%.

As shown in the table above, the passing percentages for all grades have fluctuated over the years.

In the past five fiscal years, passing percentages for Grade 1 ranged from 17% to 70%, Grade 2 ranged from 0% to 55%, Grade 3 ranged from 0% to 75%, and Grade 4 ranged from 0% to 31%. In general, Grades 1 and 2 have higher passing rates than for Grades 3 and 4. This is because Grade 3 and Grade 4 exams require the operator to have more advanced knowledge of the operation and maintenance of a wide variety of WWTP processes (including many that the operators may not have first-hand experience with) and contain more complex problems than the Grade 1 and 2 exams.

Operators are encouraged to enroll in courses offered by the Statewide Wastewater Operator Training Center and correspondence courses provided by California State University Sacramento (CSUS). Additional training courses from other sources including online web-based courses are evaluated and approved by the Board to enhance the operator's learning progress.

The Association of Boards of Certification (ABC) Certification Examination questions reference the courses offered by CSUS. Analysis has proven that the majority of the operators who have completed the CSUS courses and taken courses offered by the Training Center are passing the ABC Certification examinations.

## Statewide Wastewater Operator Training Center (SWOTC)

The State Department of Health established the training center 30 years ago in September 1988. Due to budget constraints, the State eliminated the SWOTC Coordinator position in November 2009. From September 2010 through June 2015, operator training was coordinated by the University of Hawaii at Manoa, Water Resources Research Center (WRRC) with DOH maintaining control of financial matters. DOH turned over the operation and management completely to WRRC on July 1, 2015 which is now being operated by WRRC with financial support from the Counties (website: <http://www.wrrc.hawaii.edu/swotc.shtml>).

Training courses included introductory basic wastewater courses to more complex advanced courses in activated sludge, sludge conditioning, and anaerobic digestion.

Exam participants who have successfully completed WWTP operator courses with the training center have traditionally performed better on exams than those who did not participate in the training program. The SWOTC provides an important role in the certification of WWTP operators statewide.



## Wastewater Branch, State Department of Health

The Construction and Operations Section of the Wastewater Branch has assisted the Board by providing information and vital data for all WWTPs requiring classification. Wastewater Branch inspection reports of WWTPs are used by the Board to classify new plants as they are constructed. This ensures that certified operators possessing skills commensurate with a plant's classification rating are operating the plants. The Board currently maintains a database of approximately 180 classified WWTPs in the state.

### OTHER SERVICES PROVIDED BY THE BOARD

Services	20-21	19-20	18-19	17-18	16-17	15-16
Total number of operator certifications renewed: Permanent Certifications	294	312	312	325	325	346
Requests for Temporary Certifications	18	17	13	6	10	14
Requests for Reciprocity Certifications	15	4	9	5	7	12
Evaluation of college transcripts, etc. for CEUs	6	9	10	15	37	38
Requests for Training Course Review	20	39	44	28	17	16
Direct Responsible Charge notifications	45	15	29	20	20	27
Classification of Treatment Plants	6	2	1	2	1	11

The Board reviews operator requests to evaluate college transcripts, certificates of completion for workshops, conferences, and short training courses for approval of allowable CEU credits. These CEUs are needed by operators to show that the applicant has met the educational requirements for operator certification examinations. Applicants must also show appropriate years of WWTP operating experience was obtained in order to qualify for various grade levels of certification.

The January 2002 amendments to chapter 11-61, HAR, changed the renewal period for active operator certificates to every two years instead of annually. This change allowed the Board to reduce paperwork and the cost associated with annual renewals which is comparable with other ABC member states. The amendments also require operators to obtain two (2) CEU credits prior to renewing their operator certificates. In recent years, this requirement resulted in a substantial increase in the number of operator requests for Board review to determine allowable CEU credits for college transcripts, workshops, and short courses attended by operators.

### Significant Board Actions

The primary goal of the certification program is to ensure that all WWTPs are operated by qualified personnel. During the SFY 2021, the Board achieved the following objectives:

1. Continued to review and determine the number of CEUs allowed for satisfactory completion of new training courses offered by other institutions;
2. Resolved operator concerns on applications, qualifications for examination, and

certificate renewal requirements;

3. Continued to inform operators of the Board's functions and decisions via minutes of the Board meetings and by conducting a special forum at the HWEA annual conference in February 2021. Board minutes are accessible to operators and are available on the Board's website at,

<http://health.hawaii.gov/wastewater/home/boc>

Meetings are open to any operator interested in attending or making a presentation before the Board. The Board intends to conduct another forum session at the upcoming 2022 HWEA conference (virtual format);

4. Continued contracting with ABC Services for the development and scoring of operator certification examinations. The ABC Services examinations consist of 100 questions selected by experts and validated to create nationally standardized examinations that are used in all 50 states. Scoring 70% or higher on the exam is required to pass the exams. The ABC paper tests will from now on only be offered annually on all islands in August. Since 2013-14 the Board has contracted with AMP Corp to offer computer-based tests (CBT) in Honolulu as an option available to all operators at an additional cost to the operator (\$90). In the Fall 2018, the CBTs were offered in all counties (Kauai, Honolulu, Maui, Hawaii). Operators are now allowed to take a test up to three times in a calendar year using any combination of paper and CBT;
7. Continued to provide information to operators and other agencies about Hawaii's certification program. Provided listings of operator CEUs earned, training completed and issued new certified operator certificates;
8. Continued to review and update all forms and related instructional sheets; and
9. Implemented amendments to Title 11, Chapter 61, HAR, Mandatory Certification of Operating Personnel in Wastewater Treatment Facilities, dated January 20, 2002.

### Schedule of Meetings for SFY 2022

The Board plans to schedule meetings approximately every other month with additional meetings as necessary and conducting a presentation at the 2022 HWEA conference in February. Meetings scheduled for SFY 2022 are as follows:

September 17, 2021	November 19, 2021	December 9-10, 2021
March 2022 (TBD)	May 2022 (TBD)	June 2022 (TBD)

General business conducted at these meetings includes:

1. Providing an informational meeting for operators in attendance;
2. Reviewing and processing applications for certification examinations, selecting Certification exam questions and discussing the results of the exams;

3. Reviewing and preparing responses to correspondence received from operating personnel and other agencies;
4. Reviewing, and approving or denying operator applications for Temporary Certificates;
5. Reviewing and issuing Reciprocity Certificates to qualifying operators moving to Hawaii from other states; and
6. Reviewing, and approving or denying operator certificate renewals.

### Resource Issue

The Board would benefit by having full time staff to administer the Operator Certification program. The January 2002 amendments to chapter 11-61, HAR, and an influx of newly hired operators have resulted in large volumes of correspondence, applications, and operator requests for the Board to review. At the time of the Board's inception under chapter 340B HRS, no positions were created in the Department of Health to support Board functions. As a result, Wastewater Branch staff have shared their time and efforts to support Board functions. Now that the program has grown, it has become a heavy burden for staff to continue providing this support. Many of the elements of the certification program are time sensitive as deadlines are established in chapter 11-61, HAR. Additional administrative support is needed by Board to ensure the quality of competent, certified WWTP operators in the workforce.

The Legislature passed a budget in 2019 that included a new position that would support Board. The State Department of Health is currently in the process of preparing the necessary paperwork that is needed to establish the position. However, due to the COVID-19 pandemic, restrictions have been placed to establish and fill new and existing vacant positions. Governor's approval would be needed to establish this position. The State Department of Health anticipates that there will be delays with the establishment and hiring of this new position due to the current restrictions.

## REVENUES AND EXPENSES

### Expenses During the Fiscal Year (July 2020 to June 2021):

Object Code	Title	Cost
3020	ABC Examinations	\$1,546.00
3210	Stationery & Office Supplies	\$26.15
3510	Membership Dues	\$900.00
3710	Postage	\$54.97
3810	Telephone & Telegraph	\$488.61
5620	Rental of Office Equipment	\$157.69
7210	Trng. Costs & Registration Fees	\$230.00
7290	Other Misc. Current Expenditures	\$995.64
	Total	\$4,399.06

### Funding for the Board

Act 238, Session Laws of Hawaii (SLH) 1999 amended chapter 340B HRS which established the Wastewater Treatment Certification Board Special Fund. The revenues for this fund are generated from moneys collected for registrations, renewals, reciprocity and new certificates and are to be used specifically for financing the operations of the Board. During SFY 2021, revenues from application fees were \$20,392.97 as compared to last fiscal year's revenues of \$8,320.80. Revenues vary each year and are typically more during operator certificate renewal years.

### Fiscal Situation

The Board's annual budget of \$21,021 was in effect for fiscal year SFY 2021. Total expenses were \$4,399.06, which was less than revenues of \$20,392.97 accounting for the Board's efforts to reduce backlog of agenda items by holding more meetings on the outer islands. The Board will continue to use appropriate procedures to manage its budget.

For SFY 2021, the Board has an annual budget of \$21,021. Any current or future budget restrictions will hamper Board efforts to schedule additional meetings for rule amendments and to administer chapter 11-61, HAR, entitled "Mandatory Certification of Wastewater Treatment Personnel in Wastewater Treatment Plants." Further budget reductions will severely restrict the Board's ability to administer the operator certification program.

At the close of the SFY 2021, there was a cash balance of \$55,993.91 in the special fund account.

### Recommendation

The Board is in need of administrative support personnel to administer chapter 11-61, HAR. Currently, the Board is a “working board” that must screen and review each of the hundreds of applications for certificate renewals, exams, requests for reciprocity and CEUs which consume much of the Board’s time and effort at meetings. Second day meetings are needed to address the deferment of agenda items and developing important and much needed amendments to chapter 11-61, HAR. Ideally, as done in other states, a certification program coordinator with dedicated support staff should be established to administer the program.