

**REPORT TO THE THIRTIETH LEGISLATURE  
STATE OF HAWAII  
2020**

**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,  
Fiscal Year 2018-2019**

**PREPARED BY:  
STATE OF HAWAII  
DEPARTMENT OF HEALTH  
BOARD OF CERTIFICATION OF OPERATING PERSONNEL IN  
WASTEWATER TREATMENT FACILITIES  
NOVEMBER 2019**

# **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 fiscal year (FY) 2018-2019. 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 was able to update the website and successfully continued a new 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).

The Board is burdened with performing tasks that could be done by dedicated support staff under a wastewater operator certification program. Over the years, the Board had administrative support from Department of Health staff.

Written operator certification examinations were administered by Board members statewide in the month of August 2018 to 27 applicants, with 5 successfully passing the examinations, for an overall passing rate of 19%. The FY 2018-2019 passing rate was lower (19% vs 24%) than last FY 2017-2018 and quite a bit lower than FY 2016-17 (34%). The number of written test takers has been decreasing since we began offering the CBT in 2013-14. There were only 27 last year, 62 in 2017-18, 89 in 2016-17, 111 in 2015-16, 105 in 2014-15, 140 in 2013-14, 136 in 2012-13, 169 in 2011-12, and 149 in 2010-11. In the coming fiscal year, the written test will only be offered one time (August). Beginning this year, computer-based-tests (CBTs) have become available on all islands. This past year, there were 67 applicants with 31 passing their examinations for a passing rate of 46%. These numbers are larger and improved passing as compared to last year (58 tests with 21 passing), and the year before (57 tests with 28 passing). More CBT exams are anticipated for the coming year. Overall, fewer examinees applied for operator certification tests this 2017-2018 FY (120) than last FY 2016-2017 (146). 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 338 WWTP operators have permanent Grade 1 through Grade 4 operator certificates in Hawaii (2016-2018). This is down from 346 in 2014-16, 385 in 2012-14, and 405 in 2010-12; indicating a downward trend. 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 the FY 2018-2019 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

#### Funding Source for the Board

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 FY 2018-2019, \$20,805.00 in revenues was collected. At the end of the fiscal year, a cash balance of \$31,495.01 existed in the fund.

#### Status of Training of Operating Personnel in Wastewater Treatment Facilities

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. From September 2010 through June 2015, operator training was coordinated by the University of Hawaii at Manoa, Water Resources Research Center (WRRC) on an interim basis and DOH handled the fiscal affairs of the SWOTC. From July 2015, DOH transferred the complete operation and management of the operator training program to WRRC which now independently runs the SWOTC and offers classes statewide funded by the counties.

**2020 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 the fiscal year (FY) 2017-2018. 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 | - Board Vice-Chair, Faculty, University of Hawaii at Manoa, College of Engineering |
| Kevin Nakamura   | - Certified Operator, State Department of Health                                   |
| Virgilio Viernes | - Certified Operator, County of Maui   |
| Emily Dong       | - Professional Engineer (PE), private practice                                     |
| Loren Tanigawa   | - Certified Operator, County of Kauai  |
| Ronald Hay       | - Certified Operator, private practice   |
| Gary Hutchinson  | - Hawaii Water Environment Association (HWEA).                                     |
| Vacant           | - Certified Operator, County of Hawaii   |

The Board member seat representing the county of Hawaii has been vacant since the March 2010 Board meeting. The terms of four members ran out in July 2019 (Babcock, Nakamura, Souza, Tanigawa) and therefore, new appointments were made as follows: Robert Souza was reappointed, Jon Nakashima was appointed as the Kauai representative.

## BOARD MEETINGS DURING FISCAL YEAR 2018–2019

During the FY 2018-2019, the Board held six meetings on:

September 6-7, 2018	November 1-2, 2018
December 6-7, 2018	March 7-8, 2019
May 17, 2019	June 27-28, 2019

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 FY 18-19. The exam was held in August 2018. The results of this examination are depicted in the following table:

<b>Grade</b>	<b>Pass</b>	<b>Applicants</b>	<b>Passing %</b>
1	2	6	33
2	1	5	20
3	0	6	0
4	2	10	20
Total	5	27	19

The Board also facilitated continuous CBTs for all grades of operators at AMP Corp in Honolulu during FY 17-18. Several operators took CBTs as depicted in the following table:

<b>Grade</b>	<b>Pass</b>	<b>Applicants</b>	<b>Passing %</b>
1	12	23	52
2	6	11	55
3	4	15	27
4	9	18	50
Total	31	67	46

## **COMPARISON OF PASSING PERCENTAGES**

### **Statewide**

<b>Date of Exam</b>	<b>Grade 1</b>	<b>Grade 2</b>	<b>Grade 3</b>	<b>Grade 4</b>
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 27 paper examinations were taken in FY 2018-2019 of which 5 operators passed their exams for an overall passing rate of 19%. A total of 67 CBTs were taken in FY 2018-19 of which 31 operators passed their exams for an overall passing rate of 46%. If the paper and CBTs results are combined, there were 94 exams and 36 passes for a 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 17% 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	18-19	17-18	16-17	15-16	14-15	13-14
Total number of operator certifications renewed: Permanent Certifications	338	325	325	346	346	385
Requests for Temporary Certifications	13	6	10	14	16	28
Requests for Reciprocity Certifications	9	5	7	12	16	9
Evaluation of college transcripts, etc. for CEUs	10	15	37	38	12	11
Requests for Training Course Review	44	28	17	16	36	11
Direct Responsible Charge notifications	29	20	20	27	44	20
Classification of Treatment Plants	1	2	1	11	7	9

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 FY 2018-2019, 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;

- 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 2019. 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 2020 HWEA conference;

- 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). Beginning in 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;
- 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;
- Continued to review and update all forms and related instructional sheets;
- 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 Fiscal Year 2019-2020

The Board plans to schedule meetings approximately every other month with additional meetings as necessary and conducting a presentation at the 2020 HWEA conference in February. Meetings scheduled for FY 2019-20 are as follows:

September 19, 2019	October 17-18, 2019	December 5-6, 2019
March 2020 (TBD)	May 2020 (TBD)	June 2020 (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.

## REVENUES AND EXPENSES

### Expenses During the Fiscal Year (July 2018 to June 2019):

Object Code	Title	Cost
3020	ABC Examinations	\$1,226.00
3510	Membership Dues	\$900.00
3810	Telephone & Telegraph	\$436.73
4290	Intra-State Transportation-Others	\$5,896.86
4390	Subsistence Allowance, Intra-State-- Others	\$5,736.50
4395	Excess Lodging, Intra-State--Others	\$1,797.23
4690	Hire of Passenger Cars--Others	\$811.00
5620	Rental of Office Equipment	\$242.32
7210	Trng. Costs & Registration Fees	\$1,600.00
7290	Other Misc. Current Expenditures	\$1,315.26
	Total	\$20,975.55

## 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 FY 2018-2019, revenues from application fees were \$20,805.00.00 as compared to last fiscal year's revenues of \$8,230.00.00. Revenues vary each year and are typically more during operator certificate renewal years.

## Fiscal Situation

The Board's annual budget of \$21,021.00 was in effect for fiscal year 2018-2019. Total expenses were \$20,975.55, which was less than revenues of \$20,805.00 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 FY 2019-2020, the Board has an annual budget of \$21,021.00. 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 FY 2018-2019, there was a cash balance of \$31,495.01 in the special fund account.