

DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

DEPT. COMM. NO. 131

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

In reply, please refer to:

December 19, 2017

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

The Honorable Scott K. Saiki, Speaker  
and Members of the House of  
Representatives  
Twenty-Ninth 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  
Wastewater Treatment Facilities FY 2016-17, §340B-12 Hawaii Revised Statutes (HRS).

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

<http://health.hawaii.gov/opppd/departments-of-health-reports-to-2018-legislature/>

Sincerely,

A handwritten signature in cursive script that reads "Virginia Pressler".

VIRGINIA PRESSLER

Director of Health

Enc.

c: Senate  
House  
Legislative Reference Bureau  
SOH Library System (7 copies)  
University of Hawaii

**REPORT TO THE TWENTY-NINTH LEGISLATURE  
STATE OF HAWAII  
2018**

**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 2016-2017**

**PREPARED BY:  
STATE OF HAWAII  
DEPARTMENT OF HEALTH  
BOARD OF CERTIFICATION OF OPERATING PERSONNEL IN  
WASTEWATER TREATMENT FACILITIES  
NOVEMBER 2017**

# **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 seven meetings during the fiscal year (FY) 2016-2017. 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 available on Oahu only. 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. As the economy improves, the Legislature should seriously consider providing adequate support staff for the operator certification program.

Operator certification examinations were administered by Board members statewide in the month of August 2017 and also in the month of February 2017 to 89 applicants, with 30 successfully passing the examinations, for an overall passing rate of 34%. The FY 2016-2017 passing rate was higher (34% vs. 26%) than last FY 2015-2016. This year, computer-based-tests (CBTs) were available on Oahu and there were 57 applicants with 28 passing their examinations for a passing rate of 49%. Overall, more examinees applied for operator certification tests this FY 2016-2017 (146) as last FY 2015-2016 (127). 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 325 WWTP operators have permanent Grade 1 through Grade 4 operator certificates in Hawaii. 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 2016-2017 include:

- Reviewing applications for examinations;
- Conducting two 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 2016-2017, \$21,703.70 in revenues was collected. At the end of the fiscal year, a cash balance of \$61,470.74 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.

# **2018 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 activities and accomplishments during the FY 2016-2017. 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,<br>College of Engineering |
| Kevin Nakamura   | - Certified Operator, State Department of Health                                      |
| Virgilio Viernes | - Certified Operator, County of Maui  |
| Lee Mansfield    | - Professional Engineer (PE), private practice  |
| Loren Tanigawa   | - Certified Operator, County of Kauai   |
| Ronald Hay       | - Certified Operator, private practice  |
| Vacant           | - 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. For next FY 2017-2018, Gary Hutchinson was nominated by HWEA to serve as the HWEA representative.

## BOARD MEETINGS DURING FISCAL YEAR 2016–2017

During the FY 2016-2017, the Board held seven meetings on:

|                      |                    |                     |
|----------------------|--------------------|---------------------|
| June 30-July 1, 2016 | September 22, 2016 | October 27-28, 2016 |
| December 15-16, 2016 | March 9-10, 2017   | May 4, 2017         |
| June 22-23, 2017     |                    |                     |

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 two paper examinations statewide for all grades of wastewater treatment plant (WWTP) operators during FY 16-17. The first was held in August 2016 and the second in February 2017. The results of these examinations are depicted in the following tables:

**August 2016 Examination**

| <b>Grade</b> | <b>Pass</b> | <b>Applicants</b> | <b>Passing %</b> |
|--------------|-------------|-------------------|------------------|
| 1            | 4           | 13                | 31               |
| 2            | 1           | 6                 | 17               |
| 3            | 6           | 8                 | 75               |
| 4            | 1           | 15                | 7                |
| Total        | 12          | 42                | 29               |

**February 2017 Examination**

| <b>Grade</b> | <b>Pass</b> | <b>Applicants</b> | <b>Passing %</b> |
|--------------|-------------|-------------------|------------------|
| 1            | 6           | 14                | 46               |
| 2            | 7           | 14                | 50               |
| 3            | 1           | 6                 | 17               |
| 4            | 4           | 13                | 31               |
| Total        | 18          | 47                | 38               |

The Board also facilitated continuous CBTs for all grades of operators at AMP Corp in Honolulu during FY 16-17. Several operators took CBTs as depicted in the following table:

**Computer-Based Tests 2016-17**

| <b>Grade</b> | <b>Pass</b> | <b>Applicants</b> | <b>Passing %</b> |
|--------------|-------------|-------------------|------------------|
| 1            | 8           | 14                | 57               |
| 2            | 9           | 13                | 69               |
| 3            | 4           | 8                 | 50               |
| 4            | 7           | 22                | 32               |
| Total        | 28          | 57                | 49               |

## COMPARISON OF PASSING PERCENTAGES

### Statewide

| Date of Exam  | Grade 1 | Grade 2 | Grade 3 | Grade 4 |
|---------------|---------|---------|---------|---------|
| 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 89 paper examinations were taken in FY 2016-2017 of which 30 operators passed their exams for an overall passing rate of 34%. A total of 57 CBTs were taken in FY 2016-17 of which 28 operators passed their exams for an overall passing rate of 49%. If the paper and CBTs



results are combined, there were 146 exams and 58 passes for a rate of 40%. 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 31% to 60%, Grade 2 ranged from 17% to 55%, Grade 3 ranged from 14% 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 29 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.

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

| <b>Services</b>   | <b>16-17</b> | <b>15-16</b> | <b>14-15</b> | <b>13-14</b> | <b>12-13</b> | <b>11-12</b> |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| Total number of operator certifications renewed: Permanent Certifications | 325          | 346          | 346          | 385          | 385          | 405          |
| Requests for Temporary Certifications                                     | 10           | 14           | 16           | 28           | 13           | 19           |
| Requests for Reciprocity Certifications                                   | 7            | 12           | 16           | 9            | 16           | 5            |
| Evaluation of college transcripts, etc. for CEUs                          | 37           | 38           | 12           | 11           | 11           | 15           |
| Requests for Training Course Review                                       | 17           | 16           | 36           | 11           | 124          | 33           |
| Direct Responsible Charge notifications                                   | 20           | 27           | 44           | 20           | 29           | 89           |
| Classification of Treatment Plants  | 1            | 11           | 7            | 9            | 6            | 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 FY 2016-2017, 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 2017. 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 2018 HWEA conference;

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 tests continue to be offered biannually as a paper test on all islands in February and 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). 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;
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 Fiscal Year 2017-2018

The Board plans to schedule meetings approximately every other month with additional meetings as necessary for conducting a presentation at the 2018 HWEA conference in February. Meetings scheduled for FY 2017-18 are as follows:

|                |                 |               |
|----------------|-----------------|---------------|
| July, 2017     | September, 2017 | October, 2017 |
| December, 2017 | January, 2018   | March, 2018   |
| May, 2018      | June, 2018      |               |

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.

## REVENUES AND EXPENSES

### Expenses During the Fiscal Year (July 2016 to June 2017):

| Object Code | Title  | Cost        |
|-------------|--|-------------|
| 3020        | ABC Examinations                               | \$4,120.00  |
| 3210        | Stationery & Office Supplies                   | \$76.74     |
| 3410        | Other Supplies                                 | \$578.84    |
| 3510        | Membership Dues                                | \$900.00    |
| 3690        | Freight & Delivery Charges                     | \$12.01     |
| 3710        |  | \$7.35      |
| 3810        | Telephone & Telegraph                          | \$373.55    |
| 4290        | Intra-State Transportation-Others              | \$5,568.42  |
| 4390        | Subsistence Allowance, Intra-State--<br>Others | \$3,006.00  |
| 4395        | Excess Lodging, Intra-State--Others            | \$513.12    |
| 4690        | Hire of Passenger Cars--Others                 | \$781.50    |
| 5620        | Rental of Office Equipment                     | \$371.16    |
| 7210        | Trng. Costs & Registration Fees                | \$1,130.00  |
| 7230        | Photocopy—Xerox Services                       | \$38.94     |
| 7290        | Other Misc. Current Expenditures               | \$1,260.73  |
|             | Total  | \$18,738.36 |

## 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 2016-2017, revenues from application fees were \$21,703.70 as compared to last fiscal year's revenues of \$20,405.00. 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 2016-2017. Total expenses were \$18,738.36 which was less than revenues of \$21,703.70 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 2017-2018, 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 FY 2016-2017, there was a cash balance of \$61,470.74 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. Legislative action to create and fund positions should be seriously considered as Hawaii's economy improves.