

Certification Programs for Water and Wastewater System Operators



State of Oregon
Department of
Environmental
Quality

**Joint report of Oregon Health Authority, Drinking Water Services
and Oregon Department of Environmental Quality, Wastewater Program**

Submitted to:

**Governor Kitzhaber
Oregon Legislature
Oregon Environmental Quality Commission**

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The Oregon Health Authority, Center for Health Protection, Drinking Water Services and the Oregon Department of Environmental Quality, Wastewater Program prepared this report in accordance with requirements of Oregon Revised Statute 448.409. The report describes the activities of OHA-DWS and DEQ under their respective water and wastewater operator certification programs from Jan. 1, 2011 to Dec. 31, 2012.

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Executive Summary

Oregon law requires owners of drinking water and wastewater systems (public and private) to have their systems under the responsible control and direction of certified operators. Trained and certified operators are necessary to ensure that the systems are managed in a manner that fully protects public health and the environment. Certified operators also improve facility operation and ensure compliance, protect the public's investment in the facilities, and instill public confidence in the safety and certainty of services. The Oregon Health Authority, Center for Health Protection, Drinking Water Services (OHA-DWS) administers the certification program for drinking water system operators, and the Oregon Department of Environmental Quality (DEQ) administers the program for domestic wastewater system operators.

OHA-DWS and DEQ coordinate activities to benefit their respective certification programs. Coordination efforts include, but are not limited to, representation and input at advisory committee meetings on program activities, effectiveness and rulemaking, and general program administration in areas such as testing, efficiencies and the sharing of operator work experience records. Another important area of coordination includes input to trainers and educators through the Oregon Environmental Services Advisory Council for workforce training and continuing education. Program staff also works with the Associated Boards of Certification, a national accreditation organization, on issues germane to certification program operation. Both programs contract with Associated Boards of Certification (ABC) for computer-based testing.

This report includes an overview of program activities and accomplishments, as required by ORS 448.409. Several initiatives have occurred to improve program efficiency, including the use of standardized tests and increased use of electronic communication and database systems. Program highlights for 2011 and 2012 are noted below.

DEQ is working with an outside contractor to replace its licensing software system and integrate new online functionality for the licensing process. Once complete, the software will have enhanced online application and renewal functionalities which will improve program efficiency and application access for operators. Certification exams are currently available year-round through computer-based testing and as a paper-and-pencil exam offered once a year. Over the past two years DEQ has been phasing out the paper-and-pencil exam and shifting entirely to computer-based testing. Starting in May 2013, exams will be proctored with computer-based testing only. Computer-based testing will allow quick turnaround for testing and certification and will reduce the program administration workload.

DEQ is working on amending regulations pertaining to certification of wastewater system operators (Oregon Administrative Rule 340-049). The proposed rule increases fees to cover program costs through 2019 and revises rule language to reflect current program practices and add flexibility. DEQ presented the proposed rules on Dec. 6, 2012 to the Oregon Environmental Quality Commission and the commission approved the rules unanimously. As part of the rulemaking process, fees need to be approved by the Oregon Department of Administrative Services before becoming effective. DEQ is waiting to hear from DAS and upon its approval, the fee and rule will become effective on March 1, 2013.

Information on OHA-DWS and DEQ Operator Certification Programs for 2011 and 2012 is summarized in Table 1.

Table 1: OHA-DWS and DEQ Operator Certification Programs, 2011 - 2012				
CATEGORY	DHS WATER		DEQ WASTEWATER	
Total Persons Certified	1860		1697	
Holding Two Certificates DHS-DWP or DEQ	566 (30%) (Distribution & Treatment)		736(43%) (Collection & Treatment)	
Certified by DHS-DWP and DEQ	620 (33%)		620(37%)	
Certificate Applications Reviewed ¹	708		717	
Applications Denied	163		177	
Certificates Issued by Reciprocity	23		24	
Examinations (scheduled)	503		688	
Operator-In-Training ²	N/A		86	
Continuing Education Required	2.0 CEUs every two years		2.0 CEUs every two years	
Certification Renewal Period	Annual		Biennial	
Certificates	Distribution	Treatment	Collection	Treatment
Provisional Grade I Certificate	N/A	N/A	7	8
Grade 1 Certificate	598	319	481	418
Grade 2 Certificate	668	247	459	326
Grade 3 Certificate	234	113	176	176
Grade 4 Certificate	135	112	146	238
Filtration Endorsement	N/A	43	N/A	N/A
Total Certificates by Type	1635	791	1265	1166
Total Certificates	2426		2490	
Systems Where Certified Operators Required	Distribution	Treatment	Collection	Treatment
Class 1	179	75	141	152
Class 2	138	95	132	87
Class 3	28	23	42	50
Class 4	13	5	30	41
Total Systems by Type	357	200	345 ³	330
Total Entities	357		372	
Certificate Fee (application, exam & license document)	One cert. \$85.00 to \$145.00 Filtration Endorsement: \$85.00		One cert. \$100.00 to \$160.00 (2yrs.) Grade I combined \$150.00 (2 yrs.) ⁴	
Renewal Fee — One Certificate	All Grades \$40.00 for one year		All Grades \$100.00 for two years	
Renewal Fee — Second Certificate	All Grades \$20.00 for one year		No Additional Fee	
Reciprocity Fee	\$100.00			
Program Staffing	1.0 Compliance Specialist 2		1.0 Natural Resource Specialist	
	1.0 Admin Specialist		1.0 Office Specialist	
SMALL WATER SYSTEM OPERATOR PROGRAM				
Number of “S” Operator Certificates	984	N/A	N/A	N/A
Number of Systems with “S” Required	826	N/A	N/A	N/A

¹ “Application” count does not include continuing education evaluations for renewal or reinstatement eligibility.

² A “non-certified” applicant who has passed an examination, but has not yet qualified by education and/or experience or a certificate. These numbers are not included in the total certificate count.

³ Of this number, 59 are regulated upstream or “satellite” wastewater collection systems that are connected to other regulated entities providing wastewater collection and/or treatment.

⁴ Fees are only for paper and pencil exams and do not reflect computer base testing fee or fee increase that is in the proposed rule.

Certification Program for Drinking Water System Operators

Following is an outline of the Operator Certification activities for the past two years (2011 and 2012), with detailed subjects on the operating and compliance activities with charts and graphs for easier reading.

Program Activities

Coordination and Development:

1. Network with other certifying authorities, organizations and states.
2. Manage data, receipts, refunds and reports.
3. Review and amend Water Operator Certification Rules as needed.
4. Manage services agreement contract for exams and grading by the Association of Boards of Certification.
5. Manage services agreement contract for computer based exams and grading by the Applied Management Professionals through Association of Boards of Certification.
6. Participate in the activities of the Oregon Environmental Services Advisory Council, which evaluates and assigns Continuing Education Units (CEUs) to courses offered for professional growth and assists in coordinating statewide training in environmental technology.
7. Provide staff support for the Certification Subcommittee of the Drinking Water Advisory Committee.
8. Attendance and presentations at industry sponsored training conferences.

Water System Classification:

1. Classify systems in the areas of distribution, treatment, and filtration method to determine operator certificate grade level requirements.

Operator Certification for Grades 1- 4 and Filtration Endorsement:

1. Review, evaluate, and verify applications for certification including regular exams, special exams, upgrades, reciprocity, renewal and reinstatement for applicants in the four levels of treatment, four levels of distribution and the filtration endorsement.
2. Schedule exams, secure sites, order exams, schedule proctors and proctor exams.
3. Provide information on examination study materials; notify examinees of exam results.
4. Issue certificates.

Technical Assistance and Training:

1. Respond to inquiries on certification requirements, and procedures.
2. Provide lists of qualified operators to systems recruiting for vacancies and for professional training.
3. Provide technical assistance and data management support to OHA-DWS staff regarding system operator and certification compliance.

Compliance and Enforcement:

1. Track compliance by water systems with requirements to have qualified and certified operators.
2. Report performance measures quarterly.
3. Respond to complaints and investigate allegations of fraud, misconduct, or false reporting.
4. Track professional growth for individual operators.
5. Initiate enforcement against non-compliers.
6. Revoke/Suspend certificates when necessary.

Small Water System Operator Certification:

1. Review, evaluate, and verify SWS operator designation application with required training.
2. Work with contractors to develop appropriate training materials for small water system operators.
3. Renew SWS operator certifications once every three years

Efficiency and Service Improvements:

1. Fillable applications made available.
2. Survey results to operators for interest in biennial renewal.
3. Detailed updates to the operator certification desk manuals for both staff positions.
4. Exam analysis for training needs.

Program Activities (continued)

5. Certification program staff work with field staff to monitor compliance and assure proper system classification.
6. New exam location at the coast.
7. Work with Department Information Services program staff to implement and customize the License2000 data system to support Operator Certification Program needs for the future.
8. Quarterly meetings with Department of Environmental Quality staff.

Overview of Operator Certification in Oregon

Under ORS 448, Drinking Water Services classifies all drinking water treatment and distribution systems and certifies individuals qualified to operate these systems. All community water systems using surface water sources, and those using groundwater sources with more than 150 service connections must be under the supervision of an operator with a certificate equal to or higher in grade than the water system classification (Levels 1-4). Beginning in 2001, pursuant to House Bill 2239 and subsequent administrative rules (OAR 333-061-0228), all community and non-transient non-community water systems using only groundwater and having fewer than 150 connections were required to be under the supervision of a certified operator. In 2004, rule changes added small systems that purchase water from a community or non-transient non-community and which do not add any additional treatment to this category, and changed the name from “Small Groundwater Systems” to “Small Water Systems.” This group must simply attend training every three years in order to remain in compliance.

The total number of operators certified in drinking water system operation level 1-4 is 1,860. The total number of small water system certified operators is 984. Figures for this group are separated from the larger public water supplier group because small water system operators have unique characteristics (e.g. certifications are not transferable, there is no fee, there is no reciprocity, certificates are good for three years and no examination required). The OHA-DWS increased overall compliance rates from the previous biennium from 92.4% to 95%.

In November 2008 OHA-DWS implemented the start up of the on-line renewal and secure pay processing. As of October 2012, 18% of operators utilized the on-line renewal and secure pay. The implementation of the computer-based testing began with the November 2009 exam.

Coordination and Development

The Oregon Environmental Services Advisory Committee (OESAC) was originally formed in 1969 under the Board of Health to help develop curriculum and advise the Oregon Department of Education’s Vocational Education Committee on job related training and the continuing educational needs to serve the professional environmental community. In 1995, ESAC was incorporated as a non-profit entity and renamed the Oregon Environmental Services Advisory Council (OESAC) and its mission statement was updated to serve the water and wastewater industries by evaluating continuing education course offerings, responding to legislative issues, and advising the Department of Education on the educational and program needs of the industry. OHA – DWS staff participates in the activities of the Oregon Environmental Services Advisory Committee, which reviews proposed training for qualifications of instructors, determines relevancy of course material, assigns continuing education units, and coordinates the training opportunities around the state. OESAC is composed of representatives from community colleges, professional organizations in the water and wastewater industry, the office of Professional Technical Education of the Department of Education, OHA-DWS, and DEQ. Coordinated efforts have helped to improve the OESAC website www.oesac.org, which is updated monthly for the benefit of operators and trainers.

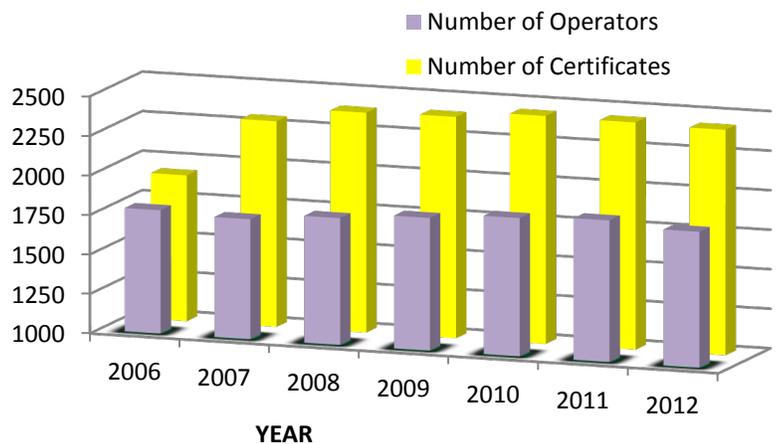
The Association of Boards of Certification (ABC) provides the testing program. Because of extended contract renegotiations with ABC, DWS was unable to provide exams as normal between early April and late July. Though all exams scheduled to be held between April and July were delayed or re-scheduled to some degree, the DWS has now resumed our normal exam schedule and process. DWS was also able to begin providing the filtration endorsement (FE) exam electronically beginning in November. Operators will be allowed three hours to complete the new electronic FE exam, which is the same time frame they are allowed when taking the written version of the exam. The passing score remains 70% or higher. The distribution, treatment and filtration need-to-know criteria are available as a study guide on the DWS Website. These tests are given throughout North America and internationally under strict standards set by ABC. To maintain this contract, staff is closely involved with the training procedures of all proctors. ABC contracts with Applied Measurement Professionals, (AMP). AMP provides service which allows operators to take exams via computer at 6 testing centers throughout Oregon. Examinees value computer-based testing as a convenient alternative to the paper-pencil exams, enabling them to schedule the exams anytime during the month and then access score reports when complete. This service reduces overhead and workload and provides faster compliance for water systems.

Operator certification staff reviews the current rules and makes recommendations towards streamlining certification processing, involving DWS employees, DWAC and additional stakeholders

Reciprocity certificates are granted on a case-by-case basis when an operator’s experience, education and examination results meet established criteria. The criteria closely follow the Model Certification Program Standards, developed by the Association of Boards of Certification (ABC) whose membership consists of over 100 certifying authorities representing more than 40 states and 10 Canadian provinces and several international programs. Program standards, uniform testing, and networking among certifying authorities help enable operators certified in Oregon to receive reciprocity in other states or provinces.

Water System Classification

Water systems are classified as small water, water distribution or water treatment based on size and complexity, as determined by the OHA-DWS. A water system is classified as a Small Water System if it has fewer than 150 connections and either uses only groundwater as its source or it purchases water that needs no further treatment once reaching the purchasing system. Distribution systems, with four levels of complexity, are classified based on population served. Water treatment plant classification, also with four levels of complexity, is based on a point system assigned to reflect the complexity of the treatment process used at the plant. A filtration endorsement is required for treatment plants that use conventional filtration. These classifications are used to determine the qualifications required of personnel in direct responsible charge of each water system. There are currently 357 water systems that require Level 1-4 certified operators, and 826 systems classified as Small Water Systems.



Operator Certification for Grades 1- 4 and Filtration Endorsement

Regular certification exams are scheduled and administered by program staff and are offered in May and October of each year at multiple locations around the state. A total of 731 applications for exams or reciprocity were reviewed and 503 exams were given during this two-year period. Additionally, 118 requests for special exams were processed.

Besides the regular exam (paper and pencil) the OHA-DWS also provides 5 special exams during the year which are computer-based, and provided by ABC. Computer exams are held at local H & R Block centers. The special exam allows applicants to schedule their own test time anytime within the month, Monday through Saturday. These exams are offered in February, April, June, July and November.

Successful applicants (scoring 70% or above) may become certified. All candidates are provided with individualized exam results noting the areas of deficiency. Staff evaluates exams and works with trainers to develop training intended specifically to improve areas of deficiency.

The Operator Certification Program has continued to show wide acceptance by the water industry. The number of certified operators in grades 1-4 in 1990 was 1,394; today that number is 1,860. The small water system operators were not listed in the total count of earlier reports and, therefore, not included in the comparison above. The increase over the years in certified operators represents the growing professionalism in the industry and the support for certification by water systems.

Certificates for Water Treatment and Water Distribution Grades 1-4 are renewed annually. Certified Operators are required to demonstrate professional growth in the field by completing two (2.0) Continuing Education Units (CEUs)

every two years in order to renew their certificates. One CEU is equivalent to 10 contact hours of lecture or formalized training in water treatment or distribution and related fields. Continuing education ensures that operators maintain and enhance their skills and keep pace with changing regulations and technology. Training opportunities are plentiful in the state and well attended.

Technical Assistance and Training

Oregon's Drinking Water Services is a member of the Oregon Environmental Services Advisory Council. The council is a non-profit organization and meets monthly. The OESAC Continuing Education Committee evaluates educational programs and maintains records of those courses presented in Oregon that meet CEU criteria in the area of environmental technology. The CEU committee uses the standards of the International Association for Continuing Education and Training (IACET) to evaluate training classes. Courses which are approved are assigned an OESAC identification number and the maximum number of CEUs that can be earned. There have been 315 courses approved for training since January 2011.

During the past two years, program staff responded to thousands of requests for assistance from system owners, operator personnel, training providers, vocational counselors, and regional staff regarding operator certificate qualifications, application forms, continuing education, system classification, and rule interpretation. A list of qualified operators is provided to communities, water systems, and organizations, etc. to assist them in recruiting new operators or sending technical course information mailings. This resource is provided on the OESAC website and available to the public. Operators are now given an opportunity to opt out of this list, but very few have done so. Staff routinely provides educational presentations at industry sponsored conferences to facilitate better understanding of program goals and requirements. These presentations are well received by industry groups.

Compliance and Enforcement

OHA-DWS staff responds to allegations of fraud or misconduct from employees from water systems regarding compliance with applicable rules and standards. The program is typically able to resolve these issues by contacting the appropriate parties and clarifying the regulatory requirements. Compliance with Operator Certification requirements is included with any administrative orders generated by the Drinking Water Program. The program is currently investigating two reports of fraud in exam application submittal. The program has also revoked one certification due to neglect of duties and fraudulent sampling. One system is currently under formal enforcement for failing to hire a certified operator, among other violations. Two other complaints were resolved without any disciplinary action due to the inability to substantiate the complaints.

System compliance is measured by documentation of persons in responsible charge recorded in SDWIS and assurance of up to date active certification recorded in L2K. The total number of operators for the level 1-4 water systems is 1860; as of the last quarterly report in July, there were 356 systems needing a distribution direct responsible charge certified operator; and 198 systems needing a treatment direct responsible charge certified operator. Level 1-4 compliance for distribution certification is 98%, and 97% for treatment certification.

In February 2012 there were 97 delinquent operators whose certification was terminated for failure to renew in 2011. On May 3, 2012, 92 reinstatement letters were mailed to currently delinquent operators. The reinstatement fee is \$50.00 and must be submitted to DWS, along with all other pertinent paperwork and fees, by Dec. 31, 2012. Those failing to submit their fees and paperwork by Dec. 31, 2012 were to have their certification terminated effective Jan. 1, 2013.

This reporting period, 13 small water systems have been referred to enforcement for failure to hire or contract with a certified operator.

Small Water System Operator Certification

This element of the certification program is supported by a grant from the U.S. Environmental Protection Agency (EPA) that is allotted to states to fund the training and certification for the operators of Small Water Systems, which are defined as community or non-transient non-community systems serving fewer than 150 connections from a groundwater source. The funding through the Expense Reimbursement Grant (ERG) was extended through for FY 2012 and officially ended Sept. 30, 2012. The Total ERG expenditure for Oregon is \$1,251,993. The grant has been utilized to fund a contract with the Rural Community Assistant Corporation for the development of updated training materials suitable for small water operators. The materials are based on a “Need to Know” criteria document developed by a group of drinking water stakeholders. The training materials consist of a manual with individual, updatable fact sheets on various program elements. There are three options for training for the small water operator, including the original class room training, an online training program which mirrors the content of the class room training, and the SWS 201(advanced) class room training. The Small Water System Training Course 201 is in its second year this year, and is designed for operators who have attended the existing Basics SWSTC training at least twice, or for those operators who work in a more advanced treatment facility. The new training covers more advance topics than the Basics SWSTC course, and operators use information from their own water systems to complete new hands-on activities in class.

The Oregon Association of Water Utilities (OAWU) operates under contract with OHA-DWS to provide the classroom training for the original SWSTC training class. The training schedule link to the OAWU website is available on the OpCert web page.

Many operators from outside of Oregon are completing the online course. OHA-DWS is aware of operators from other states, including Texas, Pennsylvania and Utah. Internationally, operators from India, Pakistan, Kenya, Nairobi, Afghanistan and the Philippines have also participated in the online training class. See table 5, Training Options.

Table 2: Drinking Water Operators Training Options

Class	No. of Attendees
Basics Training	1,105
Online Course	297
SWS 201	124

Finally, 48 participant satisfaction and feedback surveys were returned regarding the online course. Results of these surveys facilitate Op Cert staff in our continuous improvement efforts towards meeting our clients’ educational needs.

Efficiency and Service Improvements

Certification staff presented training around the state to update operators on rule changes and new resources that are available. Systems and operators are advised of the latest program information via the website and the *Pipeline*, our quarterly newsletter, which is sent to operators and water systems. Technical staff works closely with the certification staff to monitor certification compliance of systems, advise of system upgrades and assure proper system classification.

Two documents were converted to fill-able forms: The SWS survey and the Oregon Questions for Reciprocity. The transfer of both documents to the fill-able form was accomplished with the help of a certified operator and OESAC member at no cost to the program.

A survey for the level 1-4 certification regarding renewals was mailed with the 2012 renewals last November. The survey’s intent was to gauge operator interest in transitioning from an annual to a biennium renewal cycle. The overwhelming majority of response was in support of a biennium cycle for renewal, which will also allow Op Cert staff to better manage workload and align renewal dates with CEU submission requirements. Additionally, this will provide a much more streamlined and efficient approach to our certification activities, which will also provide a cost-savings to Oregon taxpayers. Transitioning from an annual to a bi-annual renewal cycle will be presented to the Drinking Water Advisory Committee (DWAC) in January 2013 and, if approved, will be adopted formally by rule change during the 2013 calendar year.

Early in 2011, the Op Cert Program began an extensive analysis of data from the previous two years of exam scores to determine the training needs of operators. Once the analysis is finalized, we will have a more complete understanding of the training needs of Oregon operators. This information will then be shared with stakeholders through presentations at

conferences and meetings to facilitate new collaborations to ensure Oregon is meeting the training needs of our operators for the foreseeable future.

Oregon is the only state that requires a separate exam for Filtration Endorsement. Operations with conventional filtration treatment must have an operator who has successfully passed a stand-alone filtration endorsement exam. The exam content for this endorsement was reviewed last year for the first time since 2004. Based on this review, the DWS has formed a workgroup to determine the validity of existing questions, as well as the potential of additional test questions being added to cover new technological improvements in treatment processes.

A new exam location for the written exam has been secured on the Coast, in Newport. The first Newport exam will occur for the October 2012 exam. Eight exam applicants are currently scheduled for this location. It is anticipated that as word spreads regarding the availability of a testing site on the Coast that the number of operators electing to test there will dramatically increase.

The lead operator certification personnel at DEQ's Wastewater Program and DWS meet quarterly to discuss current issues regarding common issues for operator certification.

Certification Program for Wastewater System Operators

ORS 448 requires the Oregon Department of Environmental Quality to certify persons operating or supervising the operation of sewage treatment works (wastewater systems). Wastewater systems include collection systems, treatment systems and combined collection and treatment systems, whether publicly or privately owned. The Wastewater System Operator Certification Program, as adopted in rule by the Oregon Environmental Quality Commission, requires DEQ to:

- Assist permit writers in classifying systems and defining requirements of system owners
- Certify persons qualified to operate and supervise systems
- Set forth a system of penalties for rule violations
- Revoke or refuse to issue certificates for established grounds
- Provide for variances to the rules
- Establish certification fees based on the principle of cost recovery.

Program Activities

Program Coordination and Development:

1. Develop forms and guidance material
2. Manage data, invoicing, collection, receipts, refunds and reports
3. Manage contract for testing services by the Association of Boards of Certification
4. Review and amend rules, including fees
5. Coordinate and provide staff support for DEQ's Operator Certification Advisory Committee
6. Communicate with trainers to assess training needs and career development ladders, and participate with the Oregon Environmental Services Advisory Council for workforce training and continuing education
7. Act as liaison with the ABC, North American certifying authorities and organizations that represent wastewater system operators, owners, vocational-technical educators and the water quality control industry

Wastewater System Classification:

1. Compile, evaluate and interpret design summary, operation, maintenance and operational compliance information for wastewater systems statewide
2. Assist permit writers in classifying systems to determine operator or supervisor certificate grade requirement
3. Coordinate permit notification to system owners

Operator Certification & Examination:

1. Evaluate education, training and experience qualifications for certification including, Operator In Training, Provisional and standard certificates, certificate by reciprocity, continuing education, renewal and reinstatement.
2. Evaluate and provide examination accommodations for the disabled
3. Validate, maintain and secure examinations
4. Prepare and distribute exam study guidance
5. Schedule exams and proctors
6. Provide notice of exam results
7. Issue certificates and renew licenses for certificate validation
8. Review and amend Wastewater Operator Certification Rules as needed

Technical Assistance and Training:

1. Respond to inquiries and provide guidance and interpretation of certification requirements regarding system owner, supervisor, operator and contractor operability issues
2. Provide technical assistance and record support for the OESAC Continuing Education Committee.
3. Provide technical assistance and data management support to DEQ staff regarding system owner and operator certification compliance

Program Activities (continued)

Compliance, Variance and Enforcement:

1. Track compliance of system owners and operators
2. Respond to complaints and inquiries, including evaluation of compliance investigations and actions, and certificate sanction or revocation
3. Evaluate and prepare responses to variance applications

Coordination and Development

DEQ is in the process of formalizing a fee increase rule revisions to help fund its Wastewater System Operator Certification program. The proposed rule includes a 60 percent across-the-board fee increase for operators and system owners. Additional proposed changes to the rule language were made to add flexibility and encourage small communities' wastewater system operators to get operator certification. The proposed rule also includes revised language that reflects current program practices and adds clarity to the current rule language.

The Operator Certification program is solely reliant on operator or system owner-paid fees, which have not changed since 2002 inspite of rising program costs. The program also faces a considerable one-time expense for a computer software upgrade that further reduces the program's operating budget. The proposed fee increase takes into account rising costs through 2019. If the one-time fee increase was spread across years 2002 to 2019, the average annual increase would have been about 3 percent.

DEQ began its rule revisions in October 2011, working with an external advisory committee that included representatives of small and large wastewater system operators, professional technical educators and trainers. Over several meetings, committee members discussed the program's needs, current fee structure and various proposed strategies to maintain the program at a current level of service. Advisory committee members acknowledged that fees have not increased in 10 years and the program's operating costs have increased. They recognized the need for continuing the operator certification program and recommended the proposed fee increase. Committee members also recommended that DEQ consider a strategy to avoid a one-time large fee increase after a number of years of added cost.

DEQ presented the proposed rules on Dec. 6, 2012 to the Oregon Environmental Quality Commission and the commission approved the rules unanimously. As part of the rulemaking process, fees need to be approved by the Oregon Department of Administrative Services before becoming effective. DEQ is currently waiting to hear from DAS and, upon DAS approval, the fee and rule will become effective March 1, 2013.

DEQ rules provide for a standing Operator Certification Advisory Committee to provide advice and make program, recommendations. Advisory Committee members are appointed by DEQ's director and represent wastewater system owners and operators, professional technical educators and trainers, industry associations and interested parties. DEQ is committed to continue working with the advisory committee to address program issues. Committee members provide advice and make recommendations to the program. Advisory Committee members are appointed by DEQ's director and they represent wastewater system owners and operators, professional technical educators and trainers, industry associations, and interested parties. DEQ schedules advisory committee meetings at least twice a year.

DEQ program staff routinely provides technical assistance to system owners, responds to requests for time extensions for operator hiring and examination, administers examinations, and may initiate enforcement activity as warranted to compel compliance.

DEQ supports and participates with OESAC to identify, develop and evaluate workforce training and assign Continuing Education Units to qualifying courses including those approved for certificate renewal.

Wastewater System Classification

Wastewater systems are classified by DEQ as collection or treatment, and at one of four levels based on a system's size, complexity and degree of difficulty to operate. These classifications establish the certificate type and grade level requirement for the operator. Some entities have both a collection and treatment system classification, while others have only one type of system. As of Dec. 31, 2012, there were a total of 389 classified systems where certification of operators is required (Table 2). Additionally, there are about 59 systems where voluntary certification is encouraged by DEQ.

Table 3: Oregon Classified Wastewater Systems, December 2012

Classified Wastewater Systems	CERTIFICATION	
	MANDATORY	VOLUNTARY*
Collection & Treatment	288	20
Collection Only	57	8
Treatment Only	42	27
TOTAL	387	55

* These systems are not required to have certified operators but choose to have them anyway.

DEQ conducts classification reviews for a system whenever a permit action occurs (new permit, permit renewal or modification) or a technical evaluation is required (plan review). DEQ staff reviews system classifications for about 25 facilities a year.

Operator Certification and Examination

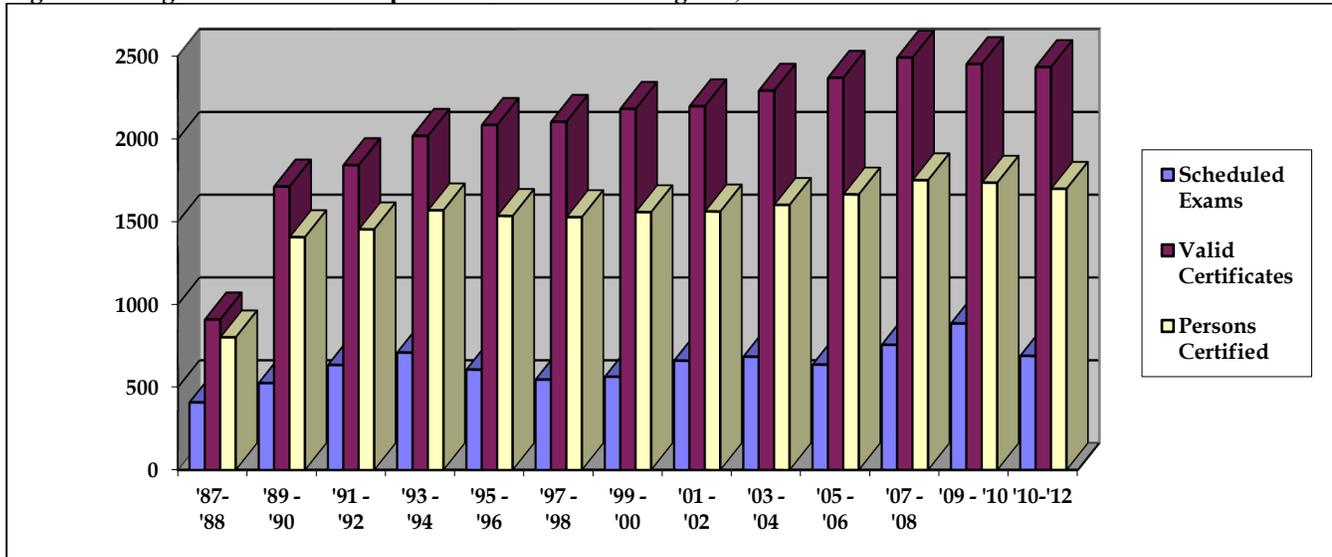
Oregon operators must meet minimum standards for education and operator work experience and pass an examination to obtain a renewable certificate. DEQ examinations are standardized closed-book tests of 100 questions for both collection and treatment system operation currently available in paper and computer-based formats. Test questions are developed by Association of Boards of Certification, a contracted test administrator. DEQ has been using ABC exams since 2006 for the paper exam; in 2009 computer-based testing became available to DEQ operators.

Currently DEQ schedules one paper exam a year. In addition, the exam is available on computer-based testing year-round. During the past two years DEQ has worked on phasing out the paper exam to make a switch to 100 percent computer-based testing. Starting May 2013, exams will be proctored with computer-based testing only. Exams will be available year-round, Monday through Friday, including Saturdays in selected test sites. Approved candidates schedule their tests with ABC contractor Applied Measurement Professionals, which provides a network of over 170 secured and proctored testing centers across the United States, including six locations in Oregon. Computer-based testing will allow quick turnaround for testing and certification and will provide efficiency of program administration. Many states and certifying organizations have transitioned to all computer-based testing as well as the online renewal program currently used by the agency's OHA Drinking Water counterparts.

During this reporting period, DEQ scheduled 688 examinations; 239 of these were proctored on a computer-based exam.

As of Dec. 31, 2012, 1,697 persons were certified in wastewater system operation, including 20 holding provisional certificates that allow on-the-job training. About 143 persons hold expired certificates eligible for reinstatement. The total number of valid certificates on this date was 2,433, as about 43 percent or 736 persons hold both a certificate in collection system operation and a certificate in treatment system operation.

Figure 2: Oregon's Wastewater Operator Certification Program, 1987- 2012



Continuing Education

To be eligible to renew a certificate, an operator needs to accumulate a minimum of two (2.0) continuing education units or equivalent, or two hours of community college, college or university credit. The Oregon Environmental Services Advisory Council provides evaluation and approval of courses and trainings offered for operators in Oregon. One CEU equals 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction and qualified instruction. CEUs or credit must have direct application to wastewater system (collection or treatment) operator job tasks and required knowledge. Continuing education promotes professional growth, helps ensure that operators maintain their skills in keeping with changing technology and regulations, and ultimately enhances safe and effective practices in the field. During this reporting period, all operators who were required to report were able to document the continuing education claimed.

Technical Assistance and Training

During this reporting period, program staff responded to requests for assistance from system owners, operator personnel, training providers and DEQ regional staff regarding operator certificate qualifications, application forms, continuing education, system classification and rule interpretation. DEQ also provides certified operator and classified system information to system owners (employers), operators, vocational counselors, organizations, etc., to help with operator training, recruiting and job placement.

Training of operators is accomplished by a host of non-profit organizations, community colleges, foundations, public and private sector consultants and professional trainers. In addition to classroom and formalized on-the-job training, numerous opportunities exist for traditional correspondence and distance learning, such as over the Internet. In Oregon in 2011 and 2012, there were over 500 documented opportunities via seminar, workshop, specialty “schools” or conferences for face-to-face operator continuing education, providing approved CEUs by OESAC and DEQ for certificate renewal or advancement. DEQ staff routinely assist in developing operator training and often deliver training topics including certification requirements, system operation and compliance issues. DEQ staff assisted with or made presentations at 18 of these events statewide.

Compliance, Variance and Enforcement

DEQ determines permit compliance by reviewing self-monitoring reports, written operator designations and file records, and through field inspections, surveys and other investigative techniques. DEQ has enforcement authority to compel

compliance should it be needed and program rules call for DEQ's director to revoke or to refuse to issue an operator's certificate for grievous acts.

DEQ investigates complaints alleging operator violations of permit conditions for various acts such as failure to perform proper sampling and testing, improper facility operation, false or fraudulent records or reports, or failure to obtain proper certification. DEQ works with system owners and operators who are out of compliance, as well as those in marginal compliance, to help them find efficient and cost effective ways to come into compliance. DEQ encourages and often recommends a course of action to assure both operator and operator training deficiencies are corrected in the shortest possible time. When there is a sudden loss or departure of a system supervising operator, upon written request, DEQ may grant a conditional time extension to allow for recruiting or contracting with a certified operator or for examination of operator personnel. During this reporting period, several requests were granted.

During the 2011-13 biennium, DEQ issued several warning letters in working with wastewater system owners to comply with certification requirements. DEQ did not revoke or suspend any certificate during this period and was able to resolve non-compliance issues without assistance from the Oregon Department of Justice.

The number of systems in compliance with operator certification requirements is near 90 percent, with the balance working to achieve full compliance. About one in four wastewater system owners meet operator certification compliance through some type of contractual agreement that includes the services of a certified operator to supervise system operation.

Efficiency and Service Improvements

A program coordinator and a clerical support person currently staff DEQ's Operator Certification Program. The program has increased use of the Internet for communication, guidance, application and other document distribution. The program's web page also includes a query for operators who passed the exam and those who hold current certification, including expiration date and county of residence. Increased use of the program's web page reduces the number of telephone requests for information and DEQ mailing of material.

The program is replacing the licensing data management system, *License2000*. Program staff works with DEQ's Information and Technology team and GL Solutions, an outside contractor, to replace the existing licensing software system and also integrate new online functionality for the licensing process. The licensing software is shared by other DEQ licensing programs. The software replacement cost share for the Wastewater Operator Certification program is nearly \$51,000. Once complete, the software will have online application and online renewal functionalities, which will improve program efficiency and easy application access for operators.

DEQ's staggered certificate expiration dates and corresponding two-year continuing education reporting distributes workload and revenue flow over the biennium. DEQ anticipates that all computer-based testing will increase program efficiency and customer service to operators. This will also benefit operators in scheduling their exams on short notice and in obtaining their certificate faster. An increasing number of operators find it necessary to schedule examinations anytime throughout the year and are taking the exam on computer.

Conclusion

The objectives of DEQ's Wastewater System Operator Certification Program are to help protect public health, Oregon's environment/water resources, and capital investment in infrastructure through safe and effective operation of Oregon's domestic wastewater collection and treatment systems. The program helps ensure there are an adequate number of qualified persons available to provide these services throughout the state.

Oregon's wastewater utilities continue to raise minimum employment qualifications for both supervisory and non-supervisory personnel. With the additional Small Wastewater System Operator certification that is included in the currently proposed rule, DEQ anticipates an increase in certification of operators for small treatment and collection systems. Certification has established a much-needed minimum standard for education, training and experience that helps ensure an effective and efficient workforce that properly operates and maintains facilities to minimize adverse effects on water quality.

Continued acceptance and support of the program is evidenced by increased employer preference for certification, recruiting preferences, promotional and pay incentives, and increased employer support for continuing professional skill training. Another indicator of support is the high number of certification and renewal fees paid for operators by their employers. This is estimated to be around 70 percent.

The Wastewater System Operator Certification Program is working well in Oregon. For the near term, the main program development issues DEQ will address for process efficiency include a transition to administer all computer-based testing, replacement of license software and implementation of the proposed rule, if approved. DEQ will also continue to work on updating information and resources on the program web page for operators, system owners, DEQ personnel and others interested in the wastewater certification program.