

For Interested Party Review – September 2010 Draft

3745-4-03 Qualified data collectors.

- (A) Criteria to become a qualified data collector (QDC).
- (1) All data submitted to the director for consideration as credible data shall originate from studies and samples collected by, or under the supervision of, a QDC. An individual seeking to become a QDC shall submit an application to the director. The applicant may request status as a QDC for one or more levels and, within level 2 and level 3, the various ~~specialities~~ specialties listed in paragraphs (A)(3) and (A)(4) of this rule. The application shall include such documentary information and evidence as the director deems reasonably necessary to enable the director to determine that the individual meets the qualifications set forth in this rule. The director shall provide application forms and the applicant shall supply information that, at a minimum, meets the criteria in paragraphs (A)(2) to (A)(4) of this rule.
 - (2) Level 1 application requirements. ~~An individual seeking to become a QDC for level 1 credible data shall submit an application to the director.~~
 - (a) An individual successfully completing a level 1 training after the effective date of this rule from a QDC trainer approved by the director shall be approved automatically as a level 1 QDC if the trainee provides name and contact information at the training. Individuals automatically approved as level 1 QDCs will be included on the list of approved QDCs on the credible data website.
 - (b) An individual seeking to become a QDC for level 1 credible data who is in either of the following categories may submit an application to the director:
 - (i) Successfully completed level 1 training from a QDC trainer approved by the director, but did not submit an application to become a QDC for level 1 credible data prior to the effective date of this rule; or
 - (ii) Successfully completed level 1 training from a QDC trainer not approved by the director. The applicant must have successfully completed training offered through an acceptable educational monitoring program or an acceptable volunteer monitoring program. The acceptability of a program will be determined based on factors including, but not limited to, the following:

- ~~(a)~~(a) Whether ~~it~~ the program has an affiliation with a national, state or local organization that actively encourages and supports surface water monitoring;
 - ~~(b)~~(b) Whether ~~it~~ the program has a commitment to maintaining a data collection effort spanning more than one year; and
 - ~~(c)~~(c) The quality of training received by participants regarding basic water quality principles, the use of field instrumentation, sample collection and preservation and data recording techniques.
- (3) Level 2 application requirements. An individual seeking to become a QDC for level 2 credible data shall submit an application requesting QDC status in one or more of the following ~~specialities~~ specialties and must meet the criteria listed in this paragraph.
- (a) Stream habitat assessment (QHEI). The level 2 QDC applicant must demonstrate that ~~he or she~~ the applicant has:
 - (i) A general knowledge of stream and riverine physical forms and habitat features; and
 - (ii) Within the last five years, attended training and achieved a passing mark in qualitative habitat evaluation index (QHEI) testing offered by Ohio EPA or a person authorized pursuant to this chapter to provide such training.
 - (b) Stream habitat assessment (HHEI). The level 2 QDC applicant must demonstrate that the applicant has:
 - (i) A general knowledge of stream and riverine physical forms and habitat features; and
 - (ii) Within the last five years, attended training in QHEI, biocriteria and headwater habitat evaluation index (HHEI) and achieved a passing mark in HHEI testing offered by Ohio EPA or a person authorized pursuant to this chapter to provide such training.
 - ~~(b)~~(c) Benthic macroinvertebrate biology. The level 2 QDC applicant must demonstrate that ~~he or she~~ the applicant has:
 - (i) A general knowledge of stream and riverine or lake physical forms and habitat features;

- (ii) Knowledge of and the ability to accurately use macroinvertebrate taxonomic references and dichotomous keys to identify midwestern aquatic macroinvertebrates to the level of family;
- (iii) Within one hundred eighty days prior to submission of a level 2 QDC application, achieved a passing mark in a macroinvertebrate taxonomic identification examination administered by Ohio EPA or a person authorized under this chapter to administer such an examination;
- (iv) College-level course credit in aquatic invertebrate zoology or practical experience in the identification of aquatic macroinvertebrates;
- (v) Completed and achieved passing marks in undergraduate core course work in limnology, aquatic biology, environmental sciences or a related discipline, or has two years practical experience in environmental assessment work; and
- (vi) Two years of practical experience involving work in developing biological water quality sampling and analysis plans, quality assurance plans, and data quality objectives processes.

[Comment: The QHEI and biocriteria training is strongly encouraged for QDCs in the level 2 macroinvertebrate specialty. It provides a broad-based understanding for how Ohio uses biology to assess stream health.]

- (~~e~~)(d) Chemical water quality assessment. The level 2 QDC applicant must demonstrate that ~~he or she~~ the applicant has:
- (i) A general knowledge of stream and riverine or lake physical forms and habitat features;
 - (ii) Completed and achieved passing marks in undergraduate core course work in a biological, chemical, natural or physical science, or has two years of pertinent laboratory experience performing water quality testing and analysis, or has two years of pertinent experience in chemical or microbiological water quality data analysis, interpretation and report writing;
 - (iii) Two years of practical experience involving work in developing chemical or microbiological water quality sampling and analysis plans, quality assurance plans, and data quality objectives processes; ~~and~~

- (iv) Two years of practical experience involving water quality sampling techniques and water quality sampling equipment; and
 - (v) Within the last five years, attended training and achieved a passing mark in the level 2 chemical water quality testing offered by Ohio EPA or a person authorized pursuant to this chapter to provide such training.
- (4) Level 3 application requirements. An individual seeking to become a QDC for level 3 credible data shall submit an application requesting QDC status in one or more of the following ~~specialities~~ specialties and must meet the criteria listed in this paragraph.
- (a) Stream habitat assessment (QHEI). The level 3 QDC applicant must demonstrate that ~~he or she~~ the applicant has:
 - (i) A general knowledge of stream and riverine physical forms and habitat features; and
 - (ii) Within the last two years, attended training and achieved a passing mark in the qualitative habitat evaluation index (QHEI) testing offered by Ohio EPA or a person authorized pursuant to this chapter to provide such training.
 - (b) Stream habitat assessment (HHEI). The level 3 QDC applicant must demonstrate that the applicant has:
 - (i) A general knowledge of stream and riverine physical forms and habitat features; and
 - (ii) Within the last two years, attended training in QHEI and in headwater habitat evaluation index (HHEI) and achieved a passing mark in HHEI testing offered by Ohio EPA or a person authorized pursuant to this chapter to provide such training.
 - ~~(b)~~(c) Fish community biology. The level 3 QDC applicant must demonstrate that ~~he or she~~ the applicant has:
 - (i) A general knowledge of stream and riverine physical forms and habitat features;
 - (ii) Knowledge of Ohio EPA electrofishing sampling protocols and data assessment procedures;

- (iii) Knowledge of and the ability to accurately use fish taxonomic references and dichotomous keys to identify midwestern fish to the level of species;
- (iv) Maintained qualifications as an individual certified to conduct fish assessments and habitat assessments as a certified professional in the voluntary action program pursuant to rule 3745-300-05 of the Administrative Code or, within the last two years, attended training and achieved a passing mark in an equivalent training program offered by Ohio EPA or a person authorized under this chapter to administer such training;
- (v) College-level course credit in ichthyology or two years experience in the identification of midwestern fish species;
- (vi) Completed and achieved passing marks in undergraduate core course work in limnology, aquatic biology, environmental sciences or a related discipline, or has two years practical experience in environmental assessment work;
- (vii) Two years of practical experience involving work in developing biological water quality sampling and analysis plans, quality assurance plans, and data quality objectives processes; and
- (viii) Two years practical experience in using electrofishing sampling techniques.

[Comment: Approval as a level 3 qualified data collector in fish community biology requires training and testing in stream habitat assessment and the qualitative habitat evaluation index. Therefore, approval as a level 3 qualified data collector in fish community biology implies approval for level 3 stream QHEI habitat assessment (i.e., separate approval is not necessary).]

- (~~e~~)(d) Benthic macroinvertebrate biology. The level 3 QDC applicant must demonstrate that ~~he or she~~ the applicant has:
- (i) A general knowledge of stream and riverine physical forms and habitat features;
 - (ii) Knowledge of Ohio EPA macroinvertebrate field sampling, laboratory analysis, and data assessment procedures;
 - (iii) Knowledge of and the ability to accurately use macroinvertebrate taxonomic references and dichotomous keys to identify

midwestern aquatic macroinvertebrates to the level of taxonomy used by Ohio EPA;

- (iv) Maintained qualifications as an individual certified to conduct macroinvertebrate assessments as a certified professional in the voluntary action program pursuant to rule 3745-300-05 of the Administrative Code or, within the last two years, attended training and achieved a passing mark in an equivalent training program offered by Ohio EPA or a person authorized under this chapter to administer such training;
- (v) College-level course credit in aquatic invertebrate zoology or two years practical experience in the identification of aquatic macroinvertebrates;
- (vi) Completed and achieved passing marks in undergraduate core course work in limnology, aquatic biology, environmental sciences or a related discipline, or has two years practical experience in environmental assessment work; and
- (vii) Two years of practical experience involving work in developing biological water quality sampling and analysis plans, quality assurance plans, and data quality objectives processes.

~~(d)~~(e) Chemical water quality assessment. The level 3 QDC applicant must demonstrate that ~~he or she~~ the applicant has:

- (i) A general knowledge of stream and riverine or lake physical forms and habitat features;
- (ii) Completed and achieved passing marks in undergraduate core course work in a biological, microbiological, chemical, natural or physical science, or has four years of pertinent laboratory experience performing water quality testing and analysis, or has four years of pertinent experience in chemical water quality data analysis, interpretation and report writing;
- (iii) Two years of practical experience involving work in developing microbiological or chemical surface water quality sampling and analysis plans, quality assurance plans, and data quality objectives processes; ~~and~~
- (iv) Two years of practical experience involving surface water quality sampling techniques and water quality sampling equipment; and

- (v) Within the last two years, either demonstrated professional competence via publication of peer reviewed articles regarding chemical surface water quality investigations or achieved a passing mark in the level 3 chemical water quality test offered by Ohio EPA or a person authorized pursuant to this chapter to provide such training.
 - (f) In lieu of the training set forth in paragraph (A)(4) of this rule, an applicant may serve a six-month apprenticeship under the mentorship of a level 3 QDC in the same specialty. For level 3 fish and macroinvertebrate certification, field collection and taxonomic identification must be included as part of the apprenticeship. The QDC shall monitor, assess and document the apprentice and provide an interim and final written evaluation of the apprentice to the director. The director reserves the right to perform unannounced audits during the apprenticeship period. Accepting the apprenticeship as fulfillment of level 3 QDC qualifications shall be at the discretion of the director. If accepted, the applicant must take and pass the level 3 test for the specialty following the completion of the apprenticeship.
 - (g) Notwithstanding paragraph (A)(4)(f) of this rule, the director retains the discretion to certify an applicant as level 3 QDC based upon a demonstration by the applicant of a combination of equivalent education and experience to that set forth above in paragraphs (A)(4)(a) to (A)(4)(e) of this rule, along with the applicant successfully passing a test to be administered by Ohio EPA concerning the specific specialties for which the applicant is requesting QDC status.
- (B) Process for initial approval as a QDC.
- (1) ~~An~~ Except for applicants eligible for automatic approval as level 1 QDCs in accordance with paragraph (A)(2)(a) of this rule, an applicant seeking to become a QDC must submit to the director a complete and current application on forms provided by the director. The application shall include documentation demonstrating that the applicant meets the minimum qualifications listed in paragraph (A) of this rule. The director may require the applicant to furnish additional documentation pertaining to the application.
 - (2) The applicant must submit copies of official transcripts from the appropriate educational institution and official training certifications to verify that the applicant meets the educational and training requirements set forth in paragraph (A) of this rule.
 - (3) The level 2 and level 3 QDC applicant shall certify that all information submitted in support of the application is true, accurate, and complete and that the applicant has not been convicted of or pleaded guilty to a violation of

section 2911.21 of the Revised Code (criminal trespass) or a substantially similar municipal ordinance within the previous five years. Failure to include the certification shall render the application incomplete.

- (4) Ohio EPA will conduct a completeness review of the application within thirty days of receipt and will notify the applicant in the event the application is incomplete. Ohio EPA will not consider an incomplete application and will notify the applicant of the reasons the application is incomplete and of any additional information required for further consideration.
- (5) Within thirty days of Ohio EPA's determination that an application is complete, the director will either approve or deny the application by sending a letter to the applicant. If the director denies the application, the director will identify the deficiencies upon which the denial of the application is based.

(C) Process for approval of renewal as a QDC.

- (1) Status as level 1 QDC does not expire and a renewal application is not required.
- (2) Status as a level 2 QDC automatically expires five years after the date of approval of the application unless the approval has been renewed.
- (3) Status as a level 3 QDC automatically expires two years after the date of approval of the application unless the approval has been renewed, or a timely renewal application has been submitted in accordance with this rule. Notwithstanding the above, status as a level 3 QDC will be automatically renewed for a period of three years without submission of an application, where the QDC has submitted data while in the status of a level 3 QDC and the director has determined the data to be level 3 data. The automatic renewal process can proceed on a rolling basis and each three year renewal period will be deemed effective beginning on the date of the QDC's data submittal of level 3 data.
- (4) An applicant seeking renewal of ~~his or her~~ the applicant's status as a level 2 or level 3 QDC shall submit to the director a renewal application prior to the date of expiration of ~~his or her~~ the applicant's status as a level 2 or level 3 QDC.
 - (a) Renewal application and requirements.
 - (i) Renewal applications shall be on forms for that purpose available from Ohio EPA.
 - (ii) The renewal application shall provide a means to re-submit the original application, if appropriate, or to update and amend the original application as necessary.

- (iii) Ohio EPA will approve or deny the renewal application in accordance with the procedures set forth in paragraphs (B)(4) and (B)(5) of this rule.
 - (iv) Renewal of level 2 QDC status is contingent upon the applicant's demonstration of active participation (in that specialty) in the credible data water quality monitoring program within the last five years.
 - (v) Renewal of level 3 QDC status is contingent upon the applicant's demonstration of active participation (at that level and in that specialty) in the credible data water quality monitoring program within the prior two years. Active participation means that the QDC has participated in activities under this program at the level and specialty of the applicant's QDC certification during the period the applicant's certification was valid including, for level 3 fish and macroinvertebrate certification, field collection and taxonomic identification.
- (b) Renewal grace period.
- (i) A QDC with expired level 2 status may submit a renewal application for a period of one year after the expiration date.
 - (ii) A QDC with expired level 3 status may submit a renewal application for a period of three months after the expiration date.
 - (iii) A QDC with expired status may submit data if the project was initiated prior to the expiration date, providing the QDC submits an approvable renewal application within the time periods indicated by paragraph (C)(4) of this rule.
 - (iv) A QDC with a lapsed status extending beyond these time periods must submit a full application as specified in paragraph (B) of this rule.
- (D) Process for revocation of status as a QDC.
- (1) The director may revoke an individual's status as a QDC upon finding that the QDC has:
 - (a) Fraudulently obtained or attempted to obtain QDC status or renewal thereof; or

- (b) Knowingly or negligently submitted misleading, inaccurate, or false data to Ohio EPA; or
 - (c) Consistently failed to attain the necessary standards for study design, field collection methods, laboratory techniques, or quality assurance and quality control procedures for the collection of credible data under this chapter.
- (2) Upon making a finding under paragraph (D)(1) of this rule, the director shall first issue a proposed action revoking QDC status in accordance with Chapter 3745-47 of the Administrative Code.
 - (3) The director shall notify the QDC of a proposed action under paragraph (D)(2) of this rule. The notice shall be by certified mail and shall set forth the action proposed by the director, the proposed effective date thereof, the reason therefor, the length of time the proposed action shall be applied, and the procedure for appealing the action.
 - (4) Revocation of QDC status shall state a period during which the individual shall not apply for such status. After the period of ineligibility has expired, the former QDC may apply for status as a QDC under this chapter.
- (E) Authorizing QDCs to train others to become QDCs.
- (1) The director may authorize individuals who have been approved as QDCs pursuant to paragraphs (A) and (B) of this rule and who meet the qualifications in paragraph (E) of this rule to train others to become QDCs.
 - (2) An individual seeking to become a QDC trainer for level 1 credible data shall include with the application ~~referenced in paragraph (A) of this rule~~ additional to become a level 1 trainer documentation demonstrating that:
 - (a) The individual has successfully completed training offered through an educational monitoring program or a volunteer monitoring program designed specifically for teaching the technical and leadership skills to group leader candidates; and
 - (b) The individual has credentials establishing that ~~he or she~~ the individual is a qualified instructor in an organization that operates or participates in an educational monitoring program or a volunteer monitoring program.
 - (c) Upon the conclusion of each level 1 training, the trainer who conducted the training will provide each person who successfully completed the training with a certificate of completion that includes the date of training and the trainer's name and signature. The trainer shall submit to Ohio

EPA the names and contact information for those persons who successfully completed the training.

- (3) An individual seeking to become a QDC trainer for level 2 or level 3 credible data shall include with the application ~~referenced in paragraph (A) of this rule~~ to be a QDC trainer additional documentation demonstrating that:
- (a) The individual has credentials establishing that ~~he or she~~ the individual is a qualified instructor in a secondary or post-secondary educational institution or an adult education program, or has two years of experience in providing classroom and field training in water quality monitoring;
 - (b) The individual has credentials indicating that ~~he or she~~ the individual has completed college-level course credit in subjects closely related to the training subject matter (e.g., fisheries, aquatic ~~macroinvertebrates~~ macroinvertebrates, or water chemistry); and
 - (c) The individual has a specific course outline for the training and, if examination is required, examination protocols and sample examination questions.
 - (d) Upon the conclusion of each training, the trainer who conducted the training will provide each person who successfully completed the training with a certificate of completion that includes the date of training and the trainer's name and signature. The trainer shall submit to Ohio EPA the names and contact information for those persons who successfully completed the training.
- (F) Notwithstanding the requirements of paragraph (E) of this rule, an individual (or an individual who works for an organization) contracted by Ohio EPA to do qualified data collector training shall be considered to be an approved QDC trainer for the life of that contract. Trainers' qualifications will be evaluated by Ohio EPA staff as part of the contract process.
- ~~(F) Organizations engaged in data collection and data interpretation.~~
- ~~(1) The director may grant status as a qualified data collection organization (QDCO) to professionally staffed organizations such as academic institutions, governmental departments, environmental consulting firms and not for profit groups that are actively engaged in the collection and interpretation of surface water data in Ohio if the following conditions are met:~~
 - ~~(a) The entity submits a request to the director for status as a qualified data collection organization;~~

- ~~(b) The organization adheres to commonly accepted quality management practices, operates using written standard operating procedures, and, if a level 2 or level 3 organization, has implemented a quality assurance program consistent with the applicable guidelines found in paragraph (B)(3) of rule 3745-4-05 of the Administrative Code or paragraph (B)(3) of rule 3745-4-06 of the Administrative Code;~~
- ~~(c) The organization meets or exceeds the following minimum number of personnel on staff (paid or volunteer) with QDC status to administer its programs:
 - ~~(i) Level 1 organization. One level 1 QDC for every ten non QDC volunteers collecting data;~~
 - ~~(ii) Level 2 organization. One level 2 QDC for every five non QDC volunteers collecting data and at least three staff, consisting of one level 2 stream habitat assessment QDC, one level 2 benthic macroinvertebrate biology QDC and one level 2 chemical water quality assessment QDC;~~
 - ~~(iii) Level 3 organization engaged only in the collection of chemical and physical data (e.g., data used for establishing a total maximum daily load). At least three staff with status as level 3 chemical water quality assessment QDC; or~~
 - ~~(iv) Level 3 organization engaged in the collection of biological assessment data. At least three staff, consisting of one level 3 fish community biology QDC, one level 3 benthic macroinvertebrate biology QDC and one level 3 chemical water quality assessment QDC; and~~~~
- ~~(d) If the organization collects and assesses biological data at level 2 or level 3, the organization must have a satisfactory performance rating, as determined by the director, in the following critical technical elements of an effective bioassessment program:
 - ~~(i) The use of appropriate temporal and spatial coverage in sampling;~~
 - ~~(ii) The use of proper sample collection methods and sample processing techniques;~~
 - ~~(iii) The use of a natural classification system and a regional reference condition in the interpretation of results;~~
 - ~~(iv) The use of sound criteria to select regional reference sites;~~~~

- ~~(v) The use of appropriate indicator organism assemblages, ecological attributes, and biological endpoints or thresholds in the interpretation of results;~~
 - ~~(vi) The ability to properly diagnose water quality problems; and~~
 - ~~(vii) The practice of professional review and documentation of results.~~
- ~~(2) The director may revoke an organization's status as a qualified data collection organization in accordance with the procedures in paragraph (D) of this rule upon finding that the organization has:~~
- ~~(a) Fraudulently obtained or attempted to obtain QDCO status or renewal thereof; or~~
 - ~~(b) Knowingly or negligently submitted misleading, inaccurate, or false data to Ohio EPA; or~~
 - ~~(c) Consistently failed to attain the necessary standards for study design, field collection methods, laboratory techniques, or quality assurance and quality control procedures for the collection of credible data under this chapter; or~~
 - ~~(d) Failed to continuously meet any of the requirements for QDCO status set forth in paragraph (F)(1) of this rule after being granted QDCO status.~~

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Certification

Date

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