



**Northeast Ohio Regional
Sewer District**

Protecting Your Health and Environment

February 5, 2008

Jeff Reynolds
Ohio EPA, Division of Surface Water
Standards & Technical Support Section
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049

Dear Mr. Reynolds:

Please find enclosed the Level 3 Project Study Plan titled "2008 Cuyahoga River Electrofishing & Benthic Macroinvertebrate Surveys". If you have any questions regarding the content of this study plan, please do not hesitate to contact me. I can be reached by email at rhoadesj@neorsd.org or phone (216) 641-6000 ext. 2219.

Sincerely,

John W. Rhoades
Supervisor of Environmental Assessment
Northeast Ohio Regional Sewer District

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REC-VE-CLERK

Level 3 Project Study Plan

2008 Cuyahoga River Electrofishing & Benthic Macroinvertebrate Surveys

(1) Objectives

The lower Cuyahoga River has been designated as one of 42 Great Lakes areas of concern (AOC) by the International Joint Commission (IJC). Previous monitoring has indicated impairment of aquatic biota in the river and has been the basis of a Total Maximum Daily Load (TMDL) plan for the Lower Cuyahoga River. The causes of impairment to the river have been classified as organic enrichment, toxicity, low dissolved oxygen, nutrients and flow alteration. The purpose of this study is to survey fish communities, benthic macroinvertebrate communities, habitat and water chemistry in the Cuyahoga River in 2008 between River Mile (RM) 16.20 and RM 7.00. The results from these surveys will be used to assign a characterization of the overall fish and macroinvertebrate community health in the river in relation to potential impacts from point and nonpoint sources of pollution. Fish and macroinvertebrate community health will be evaluated through the use of Ohio EPA indices (IBI, MIwb, and ICI). An examination of the individual metrics that comprise these indices will be used in conjunction with water quality data, the Ohio EPA Macroinvertebrate Field Sheet and Qualitative Habitat Evaluation Index (QHEI) results in order to identify impacts to the communities. Results will also be compared to historic data to show temporal as well as spatial trends.

(2) Nonpoint/Point Sources

Point Sources	Nonpoint Sources
Tinkers Creek (RM 16.36)	Urban runoff
Mill Creek (RM 11.49)	Landfills
West Creek (RM 11.05)	Spills
Southerly WWTC (RM 10.57)	Agriculture
Ohio Canal (RM 8.78)	
Big Creek (RM 7.20)	
Combined Sewer Overflows	
Storm Sewer Outfalls	

A map has been provided in Appendix A to show point sources that may be influencing the water quality at each sample location. Other point sources (upstream of Mill Creek) include the Akron Wastewater Treatment Plant (RM 37.45), Combined Sewer Overflows in Akron, and numerous tributaries to the Cuyahoga River (see *Total Maximum Daily Loads for the Lower Cuyahoga River* for a complete list of tributaries and their locations). These sources of pollution, along with the nonpoint sources listed in the table above, may be impacting the health of the fish and benthic macroinvertebrate communities in the Cuyahoga River.

(3) Parameters Covered

Fish specimens will be identified to species level, weighed, counted and examined for the presence of external anomalies including DELTs (deformities, eroded fins, lesions and tumors). Quantitative fish sampling is expected to be conducted at all locations, unless boat navigation is impeded by unforeseen manmade or natural barriers.

Cuyahoga River flow will be recorded for all locations during each electrofishing pass utilizing data from the United States Geological Survey (USGS) gage station in Independence, Ohio.

Macroinvertebrate community assemblages will be collected from each location and shipped to EA Engineering, Science and Technology for identification and enumeration. EA Engineering, Science and Technology will identify the specimens to the lowest practical taxonomic level and whenever possible, to the level of taxonomy recommended in Ohio EPA's *Biological Criteria for the Protection of Aquatic Life, Volume III* (1987, updated September 30, 1989 and November 8, 2006).

The Ohio EPA Macroinvertebrate Field Sheet will be completed at each site during sampler retrieval. In addition, stream habitat will be measured by scoring components of the QHEI at all locations, including the substrate, instream cover, channel morphology, riparian zone and bank erosion, pool/glide and riffle/run quality and gradient.

Water chemistry samples will be collected at each electrofishing/macroinvertebrate site. Parameters to be analyzed are listed in Appendix B. Field measurements for dissolved oxygen, pH, temperature, specific conductance and flow will also be performed. A water quality observation checklist will be completed at each site during each sample collection (Appendix B).

(4) Field Collection and Data Assessment Techniques

Field collections for fish will be conducted with a 17-foot Coffelt electrofishing boat (Smith-Root 5.0 GPP Electrofisher). Boat electrofishing will consist of shocking all habitat types within a sampling zone, which is 0.5 kilometers in length, while moving from upstream to downstream. The stunned fish will be collected and put in an on-board live well for later identification. Each boat sampling zone will be electroshocked two or three times during the field season (June 15 - October 15).

Fish will be identified to species level, weighed, counted, and examined for the presence of external anomalies including DELTs. Fish easily identified (commonly collected from year to year) will be returned to the site from which they are collected. Subsamples of difficult to identify species will be brought back to the laboratory for verification by NEORSD personnel and, if necessary, sent to The Ohio State University College Museum of Biological Diversity for verification by the Curator and/or Associate Curator of Fish. Voucher specimens will be collected as described in section (14). Endangered species and those too large for preservation will not be collected as voucher specimens, but will instead be photographed. Photographed vouchers will include features that permit definitive identification of the particular species.

Fish will be preserved in 10 percent formalin in the field, soaked in tap water for 24 to 48 hours after 5 to 7 days, then transferred to solutions of 30 and 50 percent ethanol for 5 to 7 days each and, finally, to 70 percent ethanol for long-term storage. Specimens larger than six inches will be slit along the right side and then soaked in formalin for approximately 10 to 14 days before being transferred to water and solutions of 30, 50 and 70 percent ethanol. Label information will include location (description and coordinates), date, time, collectors' names and sample identification code for each specimen collected.

Macroinvertebrate sampling will be conducted using quantitative and qualitative sampling techniques. Quantitative sampling will include installation of a five Hester-Dendy multi-plate artificial substrate sampler assemblage (HD) that is colonized for a six-week period. Multiple HD samplers will be installed at one or all of the locations in case samplers are lost due to vandalism, burial, etc. and for the purposes of providing a duplicate sample. Five Surber square-foot samples may be used in place of an HD sampler where deemed uncollectible due to the HD sampler having been vandalized, buried, etc. Surber samples, if supplemented for a HD sampler, will be used for informational purposes only, and will not be used to calculate an ICI score. Qualitative sampling will be conducted using a D-frame dip net when HD samplers are retrieved. The Ohio EPA Macroinvertebrate Field Sheet will be completed during each HD retrieval. Tiffany Moore of NEORSD, a Level 3 QDC for Benthic Macroinvertebrate Biology, will collect the duplicate sample and identify the specimens to the lowest practical taxonomic level and when the condition of the specimen allows, to the level of taxonomy recommended in Ohio EPA's *Biological Criteria for the Protection of Aquatic Life, Volume III* (1987, updated September 30, 1989 and November 8, 2006). Voucher specimens will be collected as described in section (14). All other macroinvertebrate community assemblages will be collected and shipped to EA Engineering, Science and Technology for identification and enumeration. EA Engineering, Science and Technology will identify specimens to the lowest practical taxonomic level and when the condition of the specimen allows, to the

level of taxonomy recommended in Ohio EPA's *Biological Criteria for the Protection of Aquatic Life, Volume III* (1987, updated September 30, 1989 and November 8, 2006). Voucher specimens will be collected as described in section (14). Stream flow will be measured with a Marsh-McBirney FloMate Model 2000 Portable Flow Meter when the HD samplers are installed and retrieved.

A detailed description of the sampling and analysis methods utilized in the fish community and macroinvertebrate surveys, including calculations of the IBI, MIwb and ICI, can be found in Ohio EPA's *Biological Criteria for the Protection of Aquatic Life, Volumes II* (1987, updated January 1, 1988 and November 8, 2006) and *III* (1987, updated September 30, 1989 and November 8, 2006).

Water chemistry sampling will be completed at all locations. Techniques used for water chemistry sampling and chemical analyses will follow the *Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices* (2006). Chemical water quality samples from each site will be collected with one 4-liter disposable polyethylene cubitainer with disposable polypropylene lid and two 473 mL plastic bottles. All water quality samples will be collected as grab samples. One duplicate sample and one field blank will be collected at a randomly selected site for each round of sampling. Acid preservation of the samples, as specified in the NEORSD laboratory's standard operating procedure for each parameter, will occur in the field. Appendix B lists the analytical method and detection limit for each parameter analyzed. Field analyses include the use of a Marsh-McBirney FloMate Model 2000 Portable Flow Meter, which measures flow in feet per second, and a YSI-556 MPS Multi-Parameter Water Quality Meter to measure dissolved oxygen, water temperature, specific conductivity and pH at the time of sampling. Meter specifications have been included in Appendix B.

The QHEI, as described in Ohio EPA's, *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)* (2006) will be used to assess aquatic habitat conditions at each sample location.

Where possible, data assessment will include an analysis of temporal and spatial trends in the collected data. Species assemblages and individual metrics will be analyzed. Graphs that show current and historic QHEI, IBI, MIwb and ICI scores and how these scores compare to attainment status of biocriteria will be prepared. Water chemistry data collected will be compared to Ohio water quality standards to determine whether any excursions from the applicable water quality criteria have occurred.

Cuyahoga River Electrofishing and Macroinvertebrate Study Plan
February 5, 2008

(5) Sampling Locations

The following electrofishing and macroinvertebrate sample locations, listed from upstream to downstream on the Cuyahoga River, will be surveyed during the 2008 field season. HD and water chemistry collection sites are located near the mid point of each electrofishing zone, indicated by River Mile, unless otherwise noted. GPS coordinates are recorded at the downstream end of each electrofishing zone.

Location	Latitude	Longitude	River Mile	Description	Quadrangle	Purpose
Old Riverview Road	N41.3678°	W81.6139°	16.20	Downstream of the confluence with Tinkers Creek	Northfield	Background data for fish, habitat and macroinvertebrates
Upstream of Mill Creek	N41.4123° N41.4123°	W81.6364° W81.6364°	12.10 ¹ 11.95	Upstream of the confluence with Mill Creek (I-480)	Cleveland South	Evaluate Mill Creek discharge on fish, habitat and macroinvertebrates
Downstream of Mill Creek	N41.4179°	W81.6446°	11.30	Downstream of the confluence with Mill Creek	Cleveland South	Evaluate Mill and West Creek discharges on fish, habitat and macroinvertebrates
Upstream of Southerly WWTC	N41.4196°	W81.6547°	10.75	Upstream of Southerly WWTC effluent discharge	Cleveland South	Evaluate West Creek and Southerly WWTC discharge on fish, habitat and macroinvertebrates
Downstream of Southerly WWTC	N41.4214° N41.4242°	W81.6590° W81.6638°	10.30 ² 10.10	Downstream Southerly WWTC effluent discharge	Cleveland South	Evaluate Southerly WWTC discharge on fish, habitat and macroinvertebrates
Upstream of Big Creek ³	N41.4393° N41.4395°	W81.6713° W81.6754°	8.30 ¹ 8.20	Upstream of the confluence with Big Creek	Cleveland South	Evaluate Big Creek discharge on fish, habitat and macroinvertebrates
Downstream of Big Creek	N41.4497°	W81.6815°	7.00	Downstream of the confluence with Big Creek	Cleveland South	Evaluate Big Creek discharge on fish, habitat and macroinvertebrates

¹ HD and Water Chemistry Collection Site

² The site at RM 10.30 has historically been the downstream of Southerly WWTC sampling location. The site at RM 10.10 was added in 2006 because it is in an area more conducive to macroinvertebrate colonization due to the presence of a functional riffle and is also within the electrofishing zone. Both sites will be sampled for macroinvertebrates in 2008.

³ Upstream of Big Creek will be relocated approximately 1,000 meters upstream in 2008. NEORS has determined that the new site will be more comparable to the other sites being sampled since a functional riffle is present. The previous site sampled in 2007 did not have a riffle.

(6) Schedule

Two to three electrofishing surveys will be conducted between June 15 and October 15, 2008. Surveys will be conducted at least four to five weeks apart. Specific dates have not been scheduled. River flow and weather conditions will be assessed weekly to determine when each electrofishing pass will be conducted.

Artificial substrate samplers will be installed on the Cuyahoga River once, between June 15 and July 15, 2008, at all of the sites and retrieved six weeks later. Specific dates have not been scheduled. River flow and weather conditions will be assessed weekly to determine when the HD sampler installations and retrievals will be conducted.

Ohio EPA Macroinvertebrate Field Sheets will be completed during the retrieval of each HD sampler.

Water chemistry samples will be collected a minimum of three times at each site between June 15 and October 15, 2008.

QHEI habitat evaluations will be conducted one time between June 15 and October 15, 2008. These evaluations will be collected around the same time as one of the electrofishing surveys.

(7) QA/QC

Quality assurance and quality control of sampling and analysis methods for habitat, fish, and macroinvertebrate evaluations will follow Ohio EPA's *Biological Criteria for the Protection of Aquatic Life, Volumes II* (1987, updated January 1, 1988 and November 8, 2006) and *III* (1987, updated September 30, 1989 and November 8, 2006) and *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)* (2006).

Electrofishing equipment will be used according to the guidelines listed in the operation and maintenance manual provided by Smith-Root, Inc. Malfunctioning equipment will not be used to collect data. Proper steps will be taken to correct the problem as soon as possible, whether by repairing in the field, at the NEORSD Environmental & Maintenance Services Center, or by contacting the supplier or an appropriate service company.

Subsamples of difficult to identify fish species will be brought back to the laboratory for verification by NEORSD personnel, and if necessary sent to The Ohio State University College Museum of Biological Diversity for verification by the Curator and/or Associate Curator of Fish. Voucher specimens will be collected as described in section (14). Endangered species and those too large for

preservation will not be collected as voucher specimens, but will instead be photographed. Photographed vouchers will include features that permit definitive identification of the particular species.

All macroinvertebrate community assemblages, except for the duplicate sample, will be collected and shipped to EA Engineering, Science and Technology for identification and enumeration. EA Engineering, Science and Technology will identify specimens to the lowest practical taxonomic level and when the condition of the specimen allows, to the level of taxonomy recommended in Ohio EPA's *Biological Criteria for the Protection of Aquatic Life, Volume III* (1987, updated September 30, 1989 and November 8, 2006). The EA Engineering, Science and Technology QA/QC manual is attached in Appendix C. All macroinvertebrate specimens will be returned to NEORSD by EA Engineering, Science and Technology. Voucher specimens for each site will be separated into individual vials and collected as described in section (14). The remaining specimens for each site will be returned in a single container labeled with the site number and collection method and date. All specimens and accompanying chain-of-custody documentation will be retained by NEORSD and stored at the Environmental & Maintenance Services Center (EMSC) for a period not less than ten years.

Water samples obtained for chemical analyses will be collected, labeled and then placed on ice inside the field truck. The field truck will remain locked at all times when not occupied/visible. Sampling activities, including sample time and condition of surface water sampled, will be entered in a QDC log book and on the water quality observation checklist. The samples will then be delivered immediately to the NEORSD Analytical Services cooler, after which the door to the cooler will be locked and the samples will be transferred to the custody of Analytical Services. The NEORSD Analytical Services Quality Manual and associated Standard Operating Procedures is on file with Ohio EPA. The Quality Assurance Officer at Analytical Service will send updates, revisions and any information on document control to Ohio EPA as needed.

(8) Work Products

Within one year of completion of the project, fish data (species, numbers, weights, pollution tolerances, the incidence of DELT anomalies, IBI and MIwb scores), macroinvertebrate data (types and numbers of macroinvertebrates collected and ICI scores), habitat data (QHEI raw data and scores) and water chemistry results will be submitted to the Ohio EPA. Additionally, reports summarizing, interpreting, graphically presenting and discussing the IBI, MIwb, ICI and QHEI scores and any excursions from water quality standards will be prepared for internal use.

Cuyahoga River Electrofishing and Macroinvertebrate Study Plan
February 5, 2008

(9) Qualified Data Collectors

The following Level 3 Qualified Data Collectors (QDC) will be involved with this study:

Name	Address	Email Address	Phone Number	QDC Specialty(s)
¹ John W. Rhoades	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	rhoadesj@neorsd.org	216-641-6000	QDC - 008 CWQA/FCB/SHA
Cathy Zamborsky	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	zamborskyc@neorsd.org	216-641-6000	QDC - 009 CWQA/SHA
^{2,3} Seth Hothem	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	hothems@neorsd.org	216-641-6000	QDC - 010 CWQA/FCB/SHA
Kathryn Crestani	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	crestanik@neorsd.org	216-641-6000	QDC - 011 CWQA/SHA
^{4,5} Tiffany Moore	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	mooret@neorsd.org	216-641-6000	QDC - 017 CWQA/BMB/SHA
⁶ Tom Zablotny	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	zablotnyt@neorsd.org	216-641-6000	QDC - 018 CWQA/FCB/SHA
Ron Maichle	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	maichler@neorsd.org	216-641-6000	QDC - 145 CWQA
⁵ Marty Sneen	EA Engineering, Science and Technology 444 Lake Cook Road, Suite #18 Deerfield, IL 60015	msneen@eaest.com	847-945-8010	QDC - 026 BMB
¹ Lead Project Manager		⁴ Benthic Macroinvertebrate Biology (BMB) Project Manager		
² Fish Community Biology (FCB) Project Manager		⁵ Benthic Macroinvertebrate Identification		
³ Stream Habitat Assessment (SHA) Project Manager		⁶ Chemical Water Quality Assessment (CWQA) Project Manager		

The following is a list of persons not qualified as a QDC who may be involved in the project. Prior to the start of sampling, the project managers will explain to each of these and any other individuals the proper methods for electrofishing and macroinvertebrate collections, water quality sampling and QHEI evaluation. Sampling will only be completed under the direct observation of a QDC. The lead project manager will be responsible for reviewing all reports and data analysis prepared by qualified personnel prior to completion.

Name	Address	Email Address	Phone Number
Joseph Broz	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	brozj@neorsd.org	216-641-6000
Tim Dobriansky	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	dobrianskyt@neorsd.org	216-641-6000
Rae Grant	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	grantr@neorsd.org	216-641-6000
Lateefah Hafeez	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	hafeezl@neorsd.org	216-641-6000
Eric Hinton	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	hintone@neorsd.org	216-641-6000
Mike Pavlik	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	pavlikm@neorsd.org	216-641-6000
Francisco Rivera	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	riveraf@neorsd.org	216-641-6000

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Name	Address	Email Address	Phone Number
Kevin Roff	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	roffk@neorsd.org	216-641-6000
Frank Schuschu	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	schuschuf@neorsd.org	216-641-6000
Elizabeth Toot-Levy	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	toot-levye@neorsd.org	216-641-6000
Wolfram vonKiparski	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	vonkiparskiw@neorsd.org	216-641-6000
Timothy Whipple	4747 East 49 th Street Cuyahoga Hts., Ohio 44125	whipplet@neorsd.org	216-641-6000

- (10) Documentation of approval of project manager and other personnel as level 3 qualified data collectors

See attached (Appendix D).

- (11) Contract laboratory contact information

Any fish that is not positively identified in the field or NEORSD laboratory will be sent to The Ohio State University College Museum of Biological Diversity for verification by the Curator and/or Associate Curator of Fish. Fish will be identified to the species level.

Dr. Ted Cavender, Curator of Fish / Mr. Marc Kibbey, Associate Curator of Fish
 1315 Kinnear Road, Columbus, Ohio 43212
cavender.1@osu.edu / kibbey.3@osu.edu
 614-292-7873

Marty Sneen, Benthic Specialist (QDC# 026)
 EA Engineering, Science and Technology
 444 Lake Cook Road Suite #18
 Deerfield, IL 60015
msneen@eaest.com
 847-945-8010 ext. 108

- (12) Copy of ODNR collector's permit

To be submitted electronically when issued to NEORSD by ODNR.

(13) Catalog Statement

A digital photo catalog of all sampling locations will be maintained for 10 years and will include photos of the specific sampling location(s), the riparian zone adjacent to the sampling location(s) and the general land use in the immediate vicinity of the sampling location(s).

Print/Signature: John W. Rhoades



Date: 02/05/08

(14) Voucher Specimen Statement

Based on Ohio EPA's Final Responsiveness Summary of the Credible Data Rules (3/24/06), NEORSD is requesting approval of an alternative vouchering protocol, as follows:

NEORSD will maintain a benthic macroinvertebrate and fish voucher collection which includes two specimens, or appropriate photo vouchers, of each species or taxa collected during the course of biological sampling from any stream within the NEORSD's service area. When benthic macroinvertebrate from multiple surface waters are collected within the same year and identified by the same QDC, one voucher collection will be created to represent the specimens collected from those streams. When fish specimens from multiple surface waters are collected within the same year, one voucher collection will be created to represent the specimens collected from those streams. A separate collection for each sampling event will not be maintained.

NEORSD will provide specimens or photo vouchers to the Director upon request. This collection will be stored at the NEORSD laboratory in the Environmental and Maintenance Services Center.

Print/Signature: John W. Rhoades



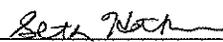
Date: 02/05/08

(15) Trespassing Statement

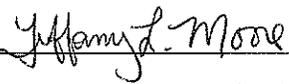
I have not been convicted or pleaded guilty to a Violation of section 2911.21 of the Revised Code (criminal trespass) or a substantially similar municipal ordinance within the previous five years.

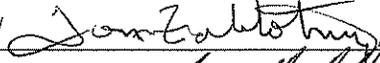
Print/Signature: John W. Rhoades /  Date: 02/05/08

Print/Signature: Cathy Zamborsky /  Date: 2/5/08

Print/Signature: Seth Hothem /  Date: 2/5/08

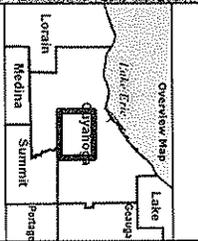
Print/Signature: Kathryn Crestani /  Date: 2/5/08

Print/Signature: Tiffany Moore /  Date: 2/05/08

Print/Signature: Tom Zablorny /  Date: 2-5-08

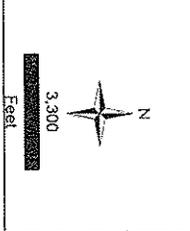
Print/Signature: Ron Maichle /  Date: 2-5-08

Appendix A



Cuyahoga River Electrofishing & Benthic Macroinvertebrate Surveys

- CSO Outfalls
- Flow, Meter/Invert, QM, and Water Sample Site
- Automated Regulators
- Manual Control Device
- Hydro Gate
- Regulator
- Wastewater Treatment Facility
- WQIS Indicators
 - Flow Monitor
 - Level Monitor
 - Remote Level Monitor
 - Rain Gauges
 - Interceptor Sewer
 - (c/s) Intercommunity Relief Sewer
 - CSO Control Sewer
 - CSO Sewer
 - Local Combined Sewer
 - Local Sanitary Sewer
 - Local Storm Sewer
 - Local Force Main
 - Local Collected Stream
 - Storm Sewer Pipe
 - Stream
 - Community Boundary



Appendix B

NEORSD Surface Water Condition Sampling Field Data Form

Date: _____ Time: _____ Site (RM): _____

Flow: Low Medium High _____ fps

USGS 04208000 Cuyahoga River @ Independence, OH Flow Gage: _____ ft³/sec*

HD Status: OK Buried Out of Water Missing

Clarity: Clear Murky Turbid Other: _____

Color: None Green Brown Grey Other: _____

Was this sample taken during or following a wet weather event? Yes/No

If yes, when and how much rain occurred? _____

General Comments: _____

Date: _____ Time: _____ Site (RM): _____

Flow: Low Medium High _____ fps

USGS 04208000 Cuyahoga River @ Independence, OH Flow Gage: _____ ft³/sec*

HD Status: OK Buried Out of Water Missing

Clarity: Clear Murky Turbid Other: _____

Color: None Green Brown Grey Other: _____

Was this sample taken during or following a wet weather event? Yes/No

If yes, when and how much rain occurred? _____

General Comments: _____

*- Cuyahoga River Daily Mean Discharge

Modified July 26, 2007

Parameter	Test	Detection Limit
Alkalinity	EPA 310.2	5 mg/L
COD	EPA 410.4	1 mg/L
Hex Chrome	SM 3500	10 ug/L
Mercury	EPA 245.2	0.05 ug/L
NH3	EPA 350.1	0.01 mg/L
NO2	EPA 354.1	0.01 mg/L
NO3	EPA 353.2	0.01 mg/L
Soluble-P	SolPO4	0.01 mg/L
Total-P	EPA 365.2	0.01 mg/L
BOD	EPA 405.1 (5 Day)	2 mg/L
TDS	EPA 160.1	1 mg/L
Ag	EPA 200.7	1 µg/L
Al	EPA 200.7	5 µg/L
As	EPA 200.7	2 µg/L
Be	EPA 200.7	0.5 µg/L
Ca	EPA 200.7	50 µg/L
CaCO3	EPA 200.7	1 µg/L
Cd	EPA 200.7	1 µg/L
Co	EPA 200.7	1 µg/L
Cr	EPA 200.7	1 µg/L
Cu	EPA 200.7	1 µg/L
Fe	EPA 200.7	1 µg/L
K	EPA 200.7	50 µg/L
Mg	EPA 200.7	20 µg/L
Mn	EPA 200.7	1 µg/L
Mo	EPA 200.7	2 µg/L
Na	EPA 200.7	20 µg/L
Ni	EPA 200.7	1 µg/L
Pb	EPA 200.7	3 µg/L
Sb	EPA 200.7	5 µg/L
Se	EPA 200.7	5 µg/L
Sn	EPA 200.7	10 µg/L
TMET	EPA 200.7	(sum of Cr+Cu+Ni+Zn)
Ti	EPA 200.7	10 µg/L
TI	EPA 200.7	10 µg/L
V	EPA 200.7	1 µg/L
Zn	EPA 200.7	1 µg/L
TS	EPA 160.3	1 mg/L
TSS	EPA 160.2	1 mg/L
Turbidity	SM 2130B	0.1 NTU
pH	EPA 150.1	1-14 s.u.

Marsh-McBirney Model 2000 Portable Flowmeter

SPECIFICATIONS

Velocity Measurement

Method
Electromagnetic

Zero Stability
± 0.05 ft/sec

Accuracy
± 2% of reading + zero stability

Range
-0.5 to +19.99 ft/sec
-0.15 m/sec to +6 m/sec

Power Requirements

Batteries
Two D Cells

Battery Life Continuous ON hours
Alkaline 25-30
NiCad 10-15 per charge

External Power Supply (Optional)
120 V, 1 W or 220 V, 1 W

Water Resistant Electronic Case

Submersible
One Foot for 30 Seconds

Outputs

Display
3¹/₂ Digit

Signal Output Connector (Optional)
Analog 0.1 V = 1 ft/sec or 1 m/sec
2 V = Full Scale

Materials

Sensor
Polyurethane

Cable
Polyurethane jacket

Electronic Case
High Impact Molded Plastic

Weight

3 lb 9 oz with case and 20 ft of cable
2 lb 10 oz without sensor and cable

Temperature

Open-Channel-Velocity Sensor
32° F to 160° F (0° C to 72° C)

Full-Pipe Sensor (S/S Insertion Tube)
32° F to 160° F (0° C to 72° C) @ 250 psi

Electronics
32° F to 122° F (0° C to 50° C)M

Appendix C

Standard Operating Procedures

Laboratory Processing of Benthic Samples

Upon arrival at the laboratory, the Hester-Dendy (H-D), Surber, and qualitative samples were logged in and accounted for. Prior to sorting and identification, each sample was rinsed on a No. 60 (0.250 mm openings) U.S. Standard Testing Sieve to remove the preservative and the H-D plates were scraped to remove the organisms. Sorting of each H-D and Surber sample was conducted in a white enamel pan first under a magnifier lamp and finally under a compound dissecting scope. If necessary, a Folsom sample splitter was used to subsample the H-Ds and Surbers until a more manageable number of organisms was achieved. Prior to splitting, the sample was pre-picked to remove any large and/or rare taxa. In all a minimum of 250 organisms in representative proportions were removed from the fractionated samples. Organisms were sorted to higher taxonomic levels (generally Class or Order level) and preserved separately in labeled vials containing 70% ethyl alcohol. To assure a consistent level of quality and sorting efficiency, senior EA personnel checked all samples. The qualitative samples contained very little detrital matter and therefore were simply rinsed prior to identification.

Macroinvertebrate identifications were made to the lowest practical taxonomic level using the most current literature available (see attached list of taxonomic literature). Whenever possible, the level of identifications followed those recommended by Ohio EPA (2006). Chironomidae larvae were cleared in warm 10% potassium hydroxide and mounted in CMC-10 prior to identification. Generally, 100 chironomids from any single sample were mounted for identification. For all sample types, specimens were enumerated, coded and recorded on a standard laboratory bench sheet for data processing.

Data Analyses

The Invertebrate Community Index (ICI) was used as the principal measure of overall macroinvertebrate community condition. Developed by the Ohio EPA, the ICI is a modification of the Index of Biotic Integrity for fish (Ohio EPA 1987). The ICI consists of ten individually scored structural community metrics:

1. Total number of taxa
2. Total number of mayfly taxa
3. Total number of caddisfly taxa
4. Total number of dipteran taxa
5. Percent mayflies
6. Percent caddisflies
7. Percent Tanytarsini midges
8. Percent other dipterans and non-insects
9. Percent tolerant organisms
10. Total number of qualitative EPT taxa.

Scoring criteria for all ten metrics is dependent upon drainage area. The scoring of an individual sample was based on the relevant attributes of that sample compared to equivalent data from 232 reference sites throughout Ohio. Metric scores range from six points for values comparable to exceptional community structure to zero points for values that deviate strongly from the expected range of values based on scoring criteria established by Ohio EPA (1989a). The sum of the individual metric scores resulted in the ICI score for that particular location.

Calculation of the ICI was conducted using a computer program written for the software SAS® by EA in 1994. This program is continuously tested and updated to ensure its accuracy. Although the ICI is most often used to analyze the combination of H-D and qualitative data from a particular location, for this study, the ICI was also calculated for the combination of Surber and qualitative data when H-D data were not available.

The only other statistical comparison used was the relative abundance (or percent composition) of individual taxa from each site and sample type. Relative abundance was calculated for both sample types as:

$$\text{Rel. Abund.(\%)} = 100 \times \frac{\text{\# Individuals of a Taxa}}{\text{Total \# of Individuals in Sample}}$$

All sample processing and data analysis were completed by permanent and full-time EA Engineering, Science, & Technology, Inc. staff working in our Deerfield, Illinois office and laboratory. Specific staff members that worked on this project and relevant experience are listed below by task:

<u>Task</u>	<u>EA Personnel</u>	<u>Years of Experience</u>
Login, Sorting, Mounting	Conrad Zack	2
Identification	Marty Sneen	19
Data Analysis	Joe Vondruska	24
	Marty Sneen	19

Selected Ohio EPA Reporting Requirements

Item 12-Taxonomic literature

Although EA's taxonomic library contains substantially more references than are listed here, the following list only includes taxonomic literature used to identify the benthos in samples from Big Creek, Doan Brook, Euclid Creek, and Mill Creek.

Bednarik, A.F. and W.P. McCafferty. 1979. Biosystematic revision of the genus Stenonema (Ephemeroptera: Heptageniidae). Canadian Bulletins of Fisheries and Aquatic Sciences 201:1-73.

Bode, R.W. 1983. Larvae of North American Eukiefferiella and Tvetenia (Diptera: Chironomidae). New York State Museum Bulletin 452:1-40.

Bolton, M.J. 2007. Ohio EPA supplemental keys to the larval Chironominae (Diptera) of Ohio and Ohio Chironomidae checklist. Ohio EPA, Division of Surface Water, Ecological Assessment Section, Columbus, Ohio.

Brown, H.P. 1976. Aquatic dryopoid beetles (Coleoptera) of the United States. Water Pollution Control Series 18050 ELDO4/72. 2nd edition. U.S. Environmental Protection Agency, Cincinnati, OH.

Burch, J.B. 1982. Freshwater snails (Mollusca: Gastropoda) of North America. EPA-600/3-82-026. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH.

Epler, J.H. 1987. Revision of the Nearctic Dicrotendipes Kieffer, 1913 (Diptera: Chironomidae). Evolutionary Monographs No. 9:1-102.

_____. 1995. Identification manual for the larval Chironomidae (Diptera) of Florida. Florida DEP, Division of Water Facilities, Tallahassee, FL.

_____. 2001. Identification manual for the larval Chironomidae (Diptera) of North and South Carolina. North Carolina DENR, Division of Water Quality, Raleigh, NC.

Grodhaus, G. 1987. Endochironomus Kieffer, Tribelos Townes, Synendotendipes new genus, and Endotribelos new genus (Diptera: Chironomidae) of the Nearctic region. Journal of the Kansas Entomological Society 60(2):167-247.

Jezerinac, R.F., G.W. Stocker, and D.C. Tarter. 1995. The crayfishes (Decapoda: Cambaridae) of West Virginia. Bulletin of the Ohio Biological Survey 10(1):1-193.

Klemm, D.J. 1985. Guide to the freshwater Annelida (Polychaeta, naidid, and tubificid Oligochaeta, and Hirudinea) of North America. Kendall/Hunt Publishing Co., Dubuque, IA.

Maschwitz, D.E. and E.F. Cook. 2000. Revision of the Nearctic species of the genus Polypedilum Kieffer (Diptera: Chironomidae) in the subgenera P. (Polypedilum) Kieffer and P. (Uresipedilum) Oyewo and Saether. Bulletin of the Ohio Biological Survey. New Series 12(3): 1-135.

McCafferty, W.P. and R.D. Waltz. 1990. Revisionary synopsis of the Baetidae (Ephemeroptera) of North and Middle America. Transactions of the American Entomological Society 116(4):769-799.

Merritt, R.W., K.W. Cummins, and M.B. Berg, eds. 2007. An introduction to the aquatic insects of North America. 4th edition. Kendall/Hunt Publishing Co., Dubuque, IA.

Morihara, D.K. and W.P. McCafferty. 1979. The Baetis larvae of North America (Ephemeroptera: Baetidae). Transactions of the American Entomological Society 105:139-221.

- Needham, J.G., M.J. Westfall, Jr., and M.L. May. 2000. Dragonflies of North America (Revised Edition). Scientific Publishers, Gainesville, Florida.
- Roback, S.S. 1985. The immature chironomids of the eastern United States VI. Pentaneurini-genus Ablabesmyia. Proceedings of The Academy of Natural Sciences of Philadelphia 137(2):153-212.
- Saether, O.A. 1977. Taxonomic studies on Chironomidae: Nanocladius, Pseudochironomus, and the Harnischia complex. Bulletin of the Fisheries Research Board of Canada 196:1-143.
- Simpson, K.W. and R.W. Bode. 1980. Common larvae of the Chironomidae (Diptera) from New York State streams and rivers with particular reference to the fauna of artificial substrates. New York State Museum Bulletin 439:1-105.
- Smith, D.G. 2001. Pennak's Freshwater Invertebrates of the United States: Porifera to Crustacea, Fourth Edition. John Wiley & Sons, New York, NY.
- Westfall, M.J., Jr. and M.L. May. 1996. Damselflies of North America. Scientific Publishers, Gainesville, Florida.
- Wiederholm, T., ed. 1983. Chironomidae of the Holarctic region. Keys and diagnoses. Part 1. Larvae. Entomologica Scandinavica Supplement 19:1-457.
- Wiggins, G.B. 1996. Larvae of the North American caddisfly genera (Trichoptera). 2nd edition. University of Toronto Press, Toronto, Canada.

Item 13-Voucher Collection

A voucher collection was developed containing two good specimens (when available) of each taxon identified from the samples. This voucher collection along with all sample specimens will be returned to NEORS D upon completion of all the sample analysis.

Outside expert specimen verification was not necessary for identification of these specimens. However, if a reference collection had been needed to verify any specimens, EA maintains a sizable macroinvertebrate voucher collection with over 1800 specimens representing over 700 taxa. If this taxonomic library proved to be insufficient, every reasonable attempt would be made to have the specimen(s) identified or verified by a noted authority.

Item 16-Chironomidae Identification

Chironomidae larvae were cleared in warm 10% potassium hydroxide and mounted in CMC-10 prior to identification. Generally, 100 chironomids from any single sample are mounted for identification. Species level identifications generally follow those suggested by Ohio EPA.

Item 17-Copies of Raw Data

Copies of the laboratory bench sheets are appended to the hard copy of this document.

Item 18-ICI Calculation

The Invertebrate Community Index (ICI) was used as the principal measure of overall macroinvertebrate community condition. Developed by the Ohio EPA, the ICI is a modification of the Index of Biotic Integrity for fish (Ohio EPA 1987). The ICI consists of ten individually scored structural community metrics:

1. Total number of taxa
2. Total number of mayfly taxa
3. Total number of caddisfly taxa
4. Total number of dipteran taxa
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8. Percent other dipterans and non-insects
9. Percent tolerant organisms
10. Total number of qualitative EPT taxa.

Scoring criteria for all ten metrics is dependent upon drainage area. The scoring of an individual sample was based on the relevant attributes of that sample compared to equivalent data from at least 232 reference sites throughout Ohio. Metric scores range from six points for values comparable to exceptional community structure to zero points for values that deviate strongly from the expected range of values based on scoring criteria established by Ohio EPA (1989a). The sum of the individual metric scores resulted in the ICI score for that particular location.

Calculation of the ICI was conducted using a computer program written for the software SAS® by EA in 1994. This program is continuously tested and updated to ensure its accuracy.

Item 20-Statistical Analyses

The only other statistical comparison used was the relative abundance (or percent composition) of individual taxa per site and sample type. Relative abundance was calculated for both sample types as:

$$\text{Rel. Abund.} = \frac{\text{\# Individuals of a Taxa}}{\text{Total \# of Individuals in Sample}}$$

Item 21-Results

Complete results are appended to the hard copy of this document.

Item 25-Electronically Formatted Data

For convenience, the data and text are provided in electronic format as Word 2003® files via email and on the enclosed CD-RW.



12 December 2007

Mr. John Rhoades
North East Ohio Regional Sewer District
Environmental & Maintenance Services Center
4747 East 49th St.
Cuyahoga Heights, OH 44125-1011

Dear John:

This letter serves as my acknowledgement that I am responsible for the following during the 2008 monitoring period:

- 1) Collection of one HD sample and one qualitative sample, identification of the macroinvertebrates in these samples, and assistance with the development of the West Creek macroinvertebrate voucher collection as necessary. These tasks will be completed as per the 2008 West Creek Restoration Evaluation study plan.
- 2) Benthic macroinvertebrate identifications and benthic macroinvertebrate voucher collection development for all benthic macroinvertebrate samples collected as per the 2008 Benthic Macroinvertebrate Sampling Upstream of NEORSO CSO Areas study plan unless West Creek restoration begins. If this is the case, then I will collect one HD sample and one qualitative sample for identification.
- 3) Benthic macroinvertebrate identifications and benthic macroinvertebrate voucher collection development and for all benthic macroinvertebrate samples collected as per the 2008 Cuyahoga River Electrofishing & Benthic Macroinvertebrate Surveys study plan.

In addition, I acknowledge that Level 3 QDC Certification by Ohio EPA is required to perform these tasks and that I am responsible for maintaining my Level 3 QDC Certification during the term of these studies.

Sincerely,

A handwritten signature in black ink, appearing to read 'Martin E. Sneen'. The signature is fluid and cursive, with the first name 'Martin' being the most prominent.

Martin E. Sneen
Benthic Taxonomist/EA Project Manager

Appendix D



State of Ohio Environmental Protection Agency

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

Effective Date: June 30, 2006
Expiration Date: June 29, 2008

CERTIFIED MAIL

ENTERED DIRECTOR'S JOURNAL

JUN 30 2006

OHIO E.P.A.

John W. Rhodes
Northeast Ohio Regional Sewer District
22370 Blossom Drive
Rocky River, Ohio 44116

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Mr. Rhodes:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 008

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

I certify this to be a true and correct copy of the original document as filed in the records of the State of Ohio Environmental Protection Agency.
Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncelik, Director

J. P. Ashman 6/30/06

Qualified Data Collector Approval
Page Two

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,

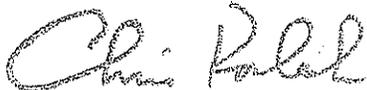

Joseph P. Koncelik
Director

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of seventy dollars (\$70.00) which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal must be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,

A handwritten signature in cursive script that reads "Chris Korleski".

Chris Korleski
Director



State of Ohio Environmental Protection Agency

MAILING ADDRESS:

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

P.O. Box 1049
Columbus, OH 43216-1049

Effective Date: June 30, 2006
Expiration Date: June 29, 2008

CERTIFIED MAIL

Catherine M. Zamborsky
Northeast Ohio Regional Sewer District
1749 Royalwood Road
Broadview Heights, Ohio 44147

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ms. Zamborsky:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 009

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

OHIO E.P.A.
JUN 30 2006
ENTERED DIRECTOR'S JOURNAL

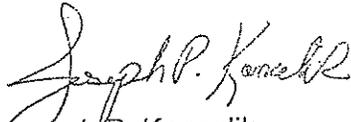
I certify this to be a true and accurate copy of the
Official document as filed in the records of the Ohio
Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncelik, Director
Joseph P. Koncelik 6/30/06
Ohio EPA is an Equal Opportunity Employer

Qualified Data Collector Approval
Page Two

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,


Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency

OHIO E.P.A.

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

DEC 27 2006

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

ENTERED DIRECTOR'S JOURNAL

Effective Date: December 28, 2006
Expiration Date: December 27, 2008

CERTIFIED MAIL

Catherine M. Zamborsky
Northeast Ohio Regional Sewer District
1749 Royalwood Road
Broadview Heights, Ohio 44147

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ms. Zamborsky:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Stream Habitat Assessment (QHEI)
QDC number: 009

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By:  Date: 12-27-06

Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncelik, Director

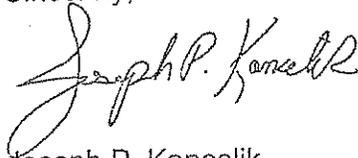
Qualified Data Collector Approval
Page Two

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,



Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency

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Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

Effective Date: June 30, 2006
Expiration Date: June 29, 2008

CERTIFIED MAIL

ENTERED DIRECTOR'S JOURNAL

JUN 30 2006

OHIO E.P.A.

Seth Hothem
Northeast Ohio Regional Sewer District
7815 Dartworth Drive
Parma, Ohio 44129

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Mr. Hothem:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 010

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

I certify this to be a true and accurate copy of the
official document as filed in the records of the Ohio
Environmental Protection Agency.
Bob Tait, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncinski, Director

Ohio EPA is an Equal Opportunity Employer

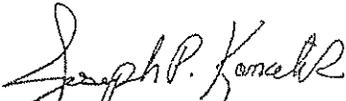
Joseph P. Koncinski 6/30/06

Qualified Data Collector Approval
Page Two

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,



Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency

STREET ADDRESS:

Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3154
www.epa.state.oh.us

MAILING ADDRESS:

OHIO E.P.A.

P.O. Box 1049
Columbus, OH 43216-1049

JUN - 1 2007

ENTERED DIRECTOR'S JOURNAL
CERTIFIED MAIL

Effective Date: June 1, 2007
Expiration Date: May 31, 2009

Seth Hothem
Northeast Ohio Regional Sewer District
7815 Dartworth Drive
Parma, Ohio 44129

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Mr. Hothem:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

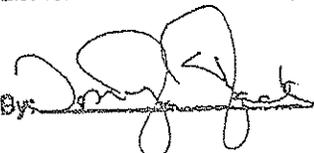
QDC Level: 3
QDC Specialty: Fish Community Biology & Stream Habitat Assessment
QDC number: 010

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By:  Date: 6-1-07

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

Qualified Data Collector Approval
Page Two

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Sincerely,



Chris Korleski
Director



State of Ohio Environmental Protection Agency

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

Effective Date: June 30, 2006
Expiration Date: June 29, 2008

CERTIFIED MAIL

ENTERED DIRECTOR'S JOURNAL

JUN 30 2006

OHIO E.P.A.

Kathryn Crestani
Northeast Ohio Regional Sewer District
4075 West 215 Street
Fairview Park, Ohio 44126

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ms. Crestani:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 011

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncelik, Director

[Signature] 6/30/06

Qualified Data Collector Approval
Page Two

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,


Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency

STREET ADDRESS:

Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

OHIO E.P.A. MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

MAR 13 2007

ENTERED DIRECTOR'S JOURNAL

CERTIFIED MAIL

Effective Date: March 13, 2007
Expiration Date: March 12, 2009

Kathryn Crestani
Northeast Ohio Regional Sewer District
4075 West 215 Street
Fairview Park, Ohio 44126

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ms. Crestani:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Stream Habitat Assessment (QHEI)
QDC number: 011

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By: [Signature] Date: 3-13-07

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

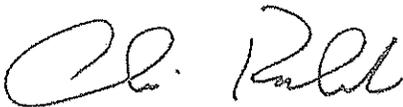
Qualified Data Collector Approval
Page Two

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of seventy dollars (\$70.00) which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal must be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,



Chris Korleski
Director



State of Ohio Environmental Protection Agency
OHIO E.P.A.

MAILING ADDRESS:

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

JUL 24 2006

P.O. Box 1049
Columbus, OH 43216-1049

ENTERED DIRECTOR'S JOURNAL

CERTIFIED MAIL

Effective Date: July 24, 2006
Expiration Date: July 23, 2008

Tiffany Lynn Moore
Northeast Ohio Regional Sewer District
8927 Weaver Road
Ravenna, Ohio 44266-8057

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ms. Moore:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 017

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Handwritten: I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency

Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Kencelik, Director

Handwritten: 7-24-06

Qualified Data Collector Approval
Page Two

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,



Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency

OHIO E.P.A.

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

DEC -7 2006

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

INTERIOR DIRECTOR'S JOURNAL

Effective Date: December 7, 2006
Expiration Date: December 6, 2008



CERTIFIED MAIL

Tiffany Lynn Moore
Northeast Ohio Regional Sewer District
8927 Weaver Road
Ravenna, Ohio 44266-8057

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ms. Moore:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Benthic Macroinvertebrate Biology
QDC number: 017

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

I certify this to be a true and accurate copy of the original documents as filed in the records of the Ohio Environmental Protection Agency.

By: [Signature] Date: 12-7-06

Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncelik, Director

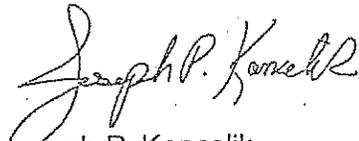
Qualified Data Collector Approval
Page Two

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,



Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency OHIO E.P.A.

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

DEC 27 2006

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049
ENTERED DIRECTOR'S JOURNAL

Effective Date: December 28, 2006
Expiration Date: December 27, 2008

CERTIFIED MAIL

Tiffany Lynn Moore
Northeast Ohio Regional Sewer District
8927 Weaver Road
Ravenna, Ohio 44266-8057

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ms. Moore:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Stream Habitat Assessment (QHEI)
QDC number: 017

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By:  Date: 12-27-06

Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncelik, Director

Qualified Data Collector Approval
Page Two

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

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Sincerely,



Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency

OHIO E.P.A.

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

JUL 24 2006

ENTERED DIRECTOR'S JOURNAL

CERTIFIED MAIL

Effective Date: July 24, 2006
Expiration Date: July 23, 2008

Tom Zabloutny
Northeast Ohio Regional Sewer District
1660 Melody Lane
Medina, Ohio 44356

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Mr. Zabloutny:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Fish Community Biology
QDC number: 018

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Verify this to be a true and accurate copy of the original document as filed in the records of the Ohio Environmental Protection Agency

Joseph P. Concellis 7-24-06

Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Concellis, Director

Qualified Data Collector Approval
Page Two

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

The approval of this certification is a final action of the director of Ohio EPA and may be appealed to the Environmental Review Appeals Commission pursuant to ORC 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Commission within thirty days after notice of the director's action. Notice of the filing of the appeal must be filed with the director within three days after the appeal is filed with the commission. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,



Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency OHIO E.P.A.

STREET ADDRESS:

Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

JUL 24 2006

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

ENTERED DIRECTOR'S JOURNAL

Effective Date: July 24, 2006
Expiration Date: July 23, 2008

CERTIFIED MAIL

Tom Zabloutny
Northeast Ohio Regional Sewer District
1660 Melody Lane
Medina, Ohio 44356

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Mr. Zabloutny:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 018

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Copy file to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency

Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Kancelik, Director

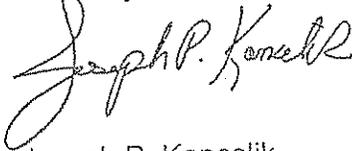
Joseph P. Kancelik
7-24-06

Qualified Data Collector Approval
Page Two

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks; and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

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Sincerely,

A handwritten signature in cursive script that reads "Joseph P. Koncelik". The signature is written in dark ink and is positioned above the printed name and title.

Joseph P. Koncelik
Director



State of Ohio Environmental Protection Agency

OHIO E.P.A.

STREET ADDRESS:

Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

JAN - 7 2008 MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049
ENTERED DIRECTOR'S OFFICE

Effective Date: January 7, 2008
Expiration Date: January 6, 2010

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency. **CERTIFIED MAIL**

Ronald Maichle
Northeast Ohio Regional Sewer District
7716 Oakhill Road #E
North Royalton, Ohio 44133

By: [Signature] Date: 1-7-08

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Ronald:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111:53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 145

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of seventy dollars (\$70.00) which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal must be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,

A handwritten signature in cursive script that reads "Chris Korleski".

Chris Korleski
Director

Appendix E

To be submitted electronically when issued to NEORS by ODN.