

Mr. Chuck Bowman
Department of Environmental Protection
Office of Water Resources
601 57th Street SE
Charleston, WV 25304

February 11, 2008

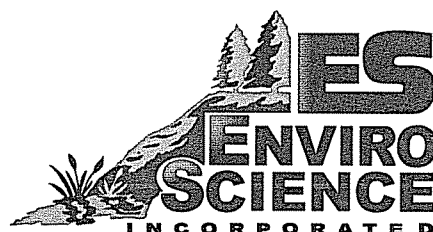
Dear Mr. Bowman,

EnviroScience Inc. is pleased to submit our quotation (re: RFQ DEP 13868) for identifying benthic macroinvertebrate samples for the Division of Water and Waste Management.

As per the RFQ, this submittal includes our pricing for the required tasks, as well as resumes and copies of certifications of key personnel. Thank you for your time in reviewing this material. Please do not hesitate to contact us if you have any questions regarding the enclosed. We look forward to the possibility of working with you.

Sincerely,


Jamie Krejsa
Vice President





State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER:
DEP13868

PAGE:
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
**CHUCK BOWMAN
 304-558-2157**

RFQ COPY
 TYPE NAME/ADDRESS HERE
EnviroScience, Inc.
3781 Darrow Rd.
Stow, Ohio 44224
phone: 1-800-940-4025
fax: 330-688-3858

**ENVIRONMENTAL PROTECTION
 DEPARTMENT OF
 OFFICE OF WATER RESOURCES
 601 57TH STREET SE
 CHARLESTON, WV
 25304 304-926-0499**

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/20/2008				

BID OPENING DATE: **02/14/2008** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		493-09		
WATER, WASTE WATER AND SOIL SAMPLE ANALYSIS						
<p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING BIDS FROM QUALIFIED VENDORS TO PROVIDE ALL INSTRUMENTATION NECESSARY TO IDENTIFY BENTHIC MACROINVERTEBRATE SAMPLES FOR THE DIVISION OF WATER AND WASTE MANAGEMENT, PER THE ATTACHED SPECIFICATIONS, BID REQUIREMENTS, SCOPE OF WORK, TERMS & CONDITIONS, AND THE BID SCHEDULE.</p> <p>EXHIBIT 3</p> <p>LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE UPON AWARD AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR,</p>						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						

SIGNATURE	TELEPHONE	DATE
	1-800-940-4025	
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
	34-1603505	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125.00 registration fee.
5. All services performed or goods delivered under State Purchase Orders/Contracts are to be continued for the term of the Purchase Order/Contract, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.
14. **HIPAA Business Associate Addendum** - The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Covered Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in cases of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications.

SIGNED BID TO:

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130



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<p>SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF THE CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE _____ TELEPHONE 1-800-940-4025 DATE _____

TITLE _____ FEIN 34-1603505 ADDRESS CHANGES TO BE NOTED ABOVE

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<p>CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM.</p> <p>REV. 04/11/2001</p> <p style="text-align: center;">VENDOR PREFERENCE CERTIFICATE</p> <p>CERTIFICATION AND APPLICATION* IS HEREBY MADE FOR PREFERENCE IN ACCORDANCE WITH WEST VIRGINIA CODE, 5A-3-37 (DOES NOT APPLY TO CONSTRUCTION CONTRACTS).</p> <p>A. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:</p> <p>() BIDDER IS AN INDIVIDUAL RESIDENT VENDOR AND HAS RESIDED CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR</p> <p>() BIDDER IS A PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR AND HAS MAINTAINED ITS HEAD-QUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR 80% OF THE OWNERSHIP INTEREST OF BIDDER IS HELD BY ANOTHER INDIVIDUAL, PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR WHO HAS MAINTAINED ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR</p> <p>() BIDDER IS A CORPORATION NONRESIDENT VENDOR WHICH HAS AN AFFILIATE OR SUBSIDIARY WHICH EMPLOYS</p>						

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<p>A MINIMUM OF ONE HUNDRED STATE RESIDENTS AND WHICH HAS MAINTAINED ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA CONTINUOUSLY FOR THE FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION.</p> <p>B. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:</p> <p>() BIDDER IS A RESIDENT VENDOR WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES WORKING ON THE PROJECT BEING BID ARE RESIDENTS OF WEST VIRGINIA WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID;</p> <p>OR</p> <p>() BIDDER IS A NONRESIDENT VENDOR EMPLOYING A MINIMUM OF ONE HUNDRED STATE RESIDENTS OR IS A NONRESIDENT VENDOR WITH AN AFFILIATE OR SUBSIDIARY WHICH MAINTAINS ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA EMPLOYING A MINIMUM OF ONE HUNDRED STATE RESIDENTS WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES OR BIDDERS' AFFILIATE'S OR SUBSIDIARY'S EMPLOYEES ARE RESIDENTS OF WEST VIRGINIA WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID.</p> <p>BIDDER UNDERSTANDS IF THE SECRETARY OF TAX & REVENUE DETERMINES THAT A BIDDER RECEIVING PREFERENCE HAS FAILED TO CONTINUE TO MEET THE REQUIREMENTS FOR SUCH PREFERENCE, THE SECRETARY MAY ORDER THE DIRECTOR OF PURCHASING TO: (A) RESCIND THE CONTRACT OR PURCHASE ORDER ISSUED; OR (B) ASSESS A PENALTY AGAINST SUCH BIDDER IN AN AMOUNT NOT TO EXCEED 5% OF THE BID AMOUNT AND THAT SUCH PENALTY WILL BE PAID TO THE CONTRACTING</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE _____ TELEPHONE **1-800-940-4025** DATE _____

TITLE _____ FEIN **34-1603505** ADDRESS CHANGES TO BE NOTED ABOVE

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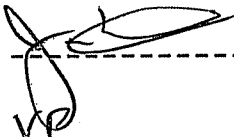
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<p>AGENCY OR DEDUCTED FROM ANY UNPAID BALANCE ON THE CONTRACT OR PURCHASE ORDER.</p> <p>BY SUBMISSION OF THIS CERTIFICATE, BIDDER AGREES TO DISCLOSE ANY REASONABLY REQUESTED INFORMATION TO THE PURCHASING DIVISION AND AUTHORIZES THE DEPARTMENT OF TAX AND REVENUE TO DISCLOSE TO THE DIRECTOR OF PURCHASING APPROPRIATE INFORMATION VERIFYING THAT BIDDER HAS PAID THE REQUIRED BUSINESS TAXES, PROVIDED THAT SUCH INFORMATION DOES NOT CONTAIN THE AMOUNTS OF TAXES PAID NOR ANY OTHER INFORMATION DEEMED BY THE TAX COMMISSIONER TO BE CONFIDENTIAL.</p> <p>UNDER PENALTY OF LAW FOR FALSE SWEARING (WEST VIRGINIA CODE 61-5-3), BIDDER HEREBY CERTIFIES THAT THIS CERTIFICATE IS TRUE AND ACCURATE IN ALL RESPECTS; AND THAT IF A CONTRACT IS ISSUED TO BIDDER AND IF ANYTHING CONTAINED WITHIN THIS CERTIFICATE CHANGES DURING THE TERM OF THE CONTRACT, BIDDER WILL NOTIFY THE PURCHASING DIVISION IN WRITING IMMEDIATELY.</p> <p>BIDDER: <u>EnviroScience Inc.</u></p> <p>DATE: <u>2/11/2008</u></p> <p>SIGNED: </p> <p>TITLE: <u>VP</u></p> <p>* CHECK ANY COMBINATION OF PREFERENCE CONSIDERATION(S) IN EITHER "A" OR "B", OR BOTH "A" AND "B" WHICH YOU ARE ENTITLED TO RECEIVE. YOU MAY REQUEST UP TO THE</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE 	TELEPHONE 1-800-940-4025	DATE
TITLE <u>VP</u>	FEIN 34-1603505	ADDRESS CHANGES TO BE NOTED ABOVE

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<p>MAXIMUM 5% PREFERENCE FOR BOTH "A" AND "B". (REV. 12/00)</p> <p style="text-align: center;">NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p style="text-align: center;">DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: CB-23</p> <p>RFQ. NO.: DEP13868</p> <p>BID OPENING DATE: 02/14/2008</p> <p>BID OPENING TIME: 1:30 PM</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: 1-330-688-3858</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE _____ TELEPHONE **1-800-940-4025** DATE _____

TITLE _____ FEIN **34-1603505** ADDRESS CHANGES TO BE NOTED ABOVE

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LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
CONTACT PERSON (PLEASE PRINT CLEARLY):					Jamie Krejsa	
					or	
					Nicole Jordan	
***** THIS IS THE END OF RFQ DEP13868 ***** TOTAL:						_____

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

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DEP13868
CONTRACT SPECIFICATIONS FOR
BENTHIC MACROINVERTEBRATE SAMPLE PROCESSING
AND/OR IDENTIFICATION

AREA OF WORK/BID AWARD

The Department of Environmental Protection, Division of Water and Waste Management is seeking bids for the processing and identification of benthic macroinvertebrates collected from West Virginia waters. Macroinvertebrates will be collected primarily from riffle / run habitats of flowing waters using rectangular dip nets.

Bids should be submitted by vendors in connection with the following:

- Sample pick-up and delivery
- Removal of organisms from stream debris
- Identification of the sample to the genus level and electronic submission of results
- Legal representation (\$/hour)
- Quality assurance / quality control for sample processing and identification

Resumes of taxonomists and copies of NABS certificates shall be included in the bid package, or upon request prior to award.

Bid awards will be made to no more than three vendors. The program typically collects around 500 samples a year, but no minimum volume of samples is guaranteed to any one vendor.

QUALIFICATIONS

The Department of Environmental Protection's (DEP) Division of Water and Waste Management (DWWM) conducts inspections of permitted and non-permitted facilities, investigates complaints, monitors ambient quality of surface water, groundwater and sediments, performs studies, and provides water quality information to the citizens of West Virginia and other government agencies.

DWWM's Watershed Assessment Section (WAS) performs the majority of the macroinvertebrate sampling. WAS has collected an average of 500 benthic macroinvertebrate samples annually.

Legal action based upon identification results is possible. Therefore, the firm or firms selected shall have a quality control program in place and shall meet the following qualifications:

1. Must have degreed biologists on staff **that perform the actual identifications**. NABS certification for genus level EPT (eastern) and chironomidae (eastern) is required. (Identification of organisms by non-professional personnel is strictly forbidden.) Biologists must be dedicated taxonomists; that is, the majority of the work performed involves the identification of aquatic organisms.
2. Must be capable of attending and providing expert testimony in legal proceedings, upon request.
3. Completed results must be delivered to DWWM according to the following schedule:
 - Samples submitted by April 1 are due August 31;
 - Samples submitted by August 31 are due Dec. 1;
 - Samples submitted by December 31 are due Feb 28;
 - Results of smaller, site-specific projects must be available within one month of sample receipt or within some other negotiated time period.Submissions shall include the following for each sample: a) macroinvertebrate identifications in Excel or Access format; b) copies of bench sheets; c) all organisms identified (except reference specimens, which will be returned when the contract is complete); and d) all QA/QC associated with sorting and identifying the samples.
4. Must be able to complete large-scale macroinvertebrate processing and identification projects (e.g. projects with >200 samples per year).

SCOPE

In administering and enforcing most of the pollution control laws of the state, the importance of quality control cannot be overstated. Quality control measures must be strictly adhered to in all phases of sample collection, preservation, transportation, and analysis. The quality control and analytical processes, as they relate to the contractor's responsibility, are divided into four (4) major steps:

STEP 1 - Collection of sample from specified office.

STEP 2 - Conduct specified analysis on samples in a timely and professional manner.

STEP 3 - Establishment of continuing program to ensure the reliability of data (Quality Assurance/Quality Control).

STEP 4 - Legal Testimony

Step 1 - Collection of Samples from Specified Office

Benthic macroinvertebrate samples will be collected by DWWM personnel. Due the size of the sample containers (1 gallon jar) and the total number of samples collected annually, DWWM will not ship samples to the contractor using commercial transport such as UPS or Federal Express. Therefore, the vendor shall provide sample pick up and delivery services. DWWM will bear the cost of sample transport, however, and the vendor shall include sample transport costs as part of the bid package. Typically, there are four to five sample pick-ups per year.

DWWM will provide Chain-of-Custody forms when samples are picked-up by the vendor. The vendor shall be responsible for maintaining preservation of the sample and the internal chain of custody from the time the vendor obtains the sample until the results of macroinvertebrate identification are accepted by the Division. The vendor shall also maintain records of the results of identification for a minimum of five (5) years.

Step 2 - Conduct Specified Analysis on Samples

Sorting Benthic Macroinvertebrate Samples

Most benthic macroinvertebrate samples shall be processed in accordance with the procedures outlined in "Standard Operating Procedures for Processing Benthic Macroinvertebrate Samples" (Attachment A.). Sub-samples consisting of 200 aquatic macroinvertebrates are to be prepared for all samples collected with a net apparatus. Sub-samples shall be obtained by placing the entire sample in a sieve box divided into 100 1-inch by 1-inch grids. Any vertebrates encountered during subsampling should be retained with the sample, but not identified. Specimens should be stored in archival quality containers that will prevent loss of preservative through evaporation: glass vials with or without screw caps, polypropylene jars with screw caps, etc.

Occasionally, the entire sample will need to be sorted and identified (artificial substrate samples and special surveys). DWWM realizes that these samples may require significantly more time to process and identify than 200 organism subsamples. Vendors are asked to bid on whole-sample processing separately.

Vendor will be responsible for examining sorting efficiency for 5 % of all submitted samples for QA/QC purposes.

Identification of Benthic Macroinvertebrate Samples

Benthic macroinvertebrate samples shall be identified in accordance with procedures outlined in "Standard Operating Procedures for Identifying Macroinvertebrate Samples" (Attachment B.). Taxonomists are permitted to use identification keys other than those suggested in the operating procedures. However, all keys must be current and up-to-date. All results submitted to DWWM shall include a bibliography of publications used in identification of the specimens. Vendor will be responsible for identification only; data analysis will not be required.

All aquatic insects (including Diptera), crayfish, snails and clams are to be identified to the genus-level. **(NOTE: samples may include a significant number of chironomid larvae, which MUST be identified to genus.)**

Aquatic invertebrates that do not require family/genus level identification are Nemertea, Oligochaeta, Nematoda, Hydrozoa, Turbellaria, Bryozoa, and Hirudinea. These organisms need only be identified to the taxonomic level (phylum, class, order, etc.) indicated in the previous sentence. However, it would be desirable to report lower taxonomic levels if these organisms are easily identified. Vertebrates and terrestrial organisms are not to be identified.

Vendor will be responsible for re-identification of 5 % of all submitted samples for QA/QC purposes.

Vendor will also be required to establish reference collections and retain all voucher specimens for this project. A reference collection is defined as a set of biological specimens, each representing some taxonomic level. Reference collections are to be arranged/curated based on taxonomic and/or phylogenetic order. Voucher specimens are the actual specimens identified from the samples.

Results of identifications shall be submitted on the form(s) provided by DWWM and in electronic format (Microsoft Excel or Access compatible format; WVDEP will provide a blank database for this purpose). All QA/QC associated with sorting and identification of each sample shall also be submitted with the results.

Analysis of samples is not deemed completed until the data has been submitted to and accepted by the DWWM. Should the DWWM not provide notice of acceptance within four weeks of the date results were mailed by the vendor, the firm may consider the data to be acceptable by the Division.

The vendor shall be responsible for maintaining preservation of the samples. Vendor shall return all sample jars, voucher specimens and reference collections to the DWWM in addition to the results of identification. Unused sample residues (i.e. detritus and unpicked portions) are to be properly disposed by the vendor.

Step 3 - Quality Control

The consultant shall compile genus-level reference and voucher collections to be submitted to DEP/DWWM annually or upon request.

With the exception of organisms used in the reference collection, all specimens identified in the 200 organism sub-samples are to be returned to DEP/DWWM. Slide mounted specimens should be labeled to indicate, at a minimum, DEP sample ID and lab number. All other specimens are to be stored in a single sample vial (additional vials may be used when large organisms, (i.e., crayfish) are present).

Vendor shall evaluate sorting efficiency for 5 % of all samples. Recovery errors may not exceed 10% of the total sample. A record of all samples sorted, a list of quality control checks and documentation of any corrective action taken shall be maintained by the vendor to document the process. This information shall be provided annually or upon request.

In addition, the vendor shall re-identify a minimum of 5 % of the samples. A taxonomist other than the original identifier shall perform this check. All documentation associated with the QA/QC process, including any corrective action taken, shall be submitted to DEP/ DWWM annually or upon request.

If any significant changes in taxonomy occur during the life of this contract, the vendor shall notify DWWM and provide supporting references. This process will allow our own records to remain current.

DEP biologists and/or another contract laboratory will verify identifications for a minimum of 2.5% of the samples. Samples subjected to verification are selected randomly and will¹ encompass checks on all taxonomists. The vendor will be advised immediately if significant differences in identification are encountered. Cancellation of the contract will result if discrepancies continue.

Step 4 - Legal Testimony

The selected firm or firms may be requested by the DWWM to testify concerning the validity of

¹ "Significant" differences will include, but will not be limited to, consistent misidentification of an organism(s) during QA/QC checks.

the laboratory analysis. The firm will only be required to testify to the following areas:

-
1. Time of notification by the DEP/DWWM of sample shipment and by whom.
 2. Condition of sample.
 3. How sample was preserved by the firm.
 4. Dates of analysis and by whom.
 5. Chain of Custody procedures within the laboratory.
 6. Methods used.
 7. Results of analysis.

At no time will the firm respond to questions concerning interpretation of results. The Division shall reimburse the firm for the costs of any such testimony.

SUBCONTRACTORS

The vendors who are awarded a contract, when performing work under the terms and conditions of this contract, are solely responsible for the satisfactory completion of the work. The prime vendor shall be responsible for ensuring that any subcontractor has all the necessary permits, certifications, experience and insurance to perform the work. **All subcontractors must be approved in writing by DWWM before subcontractor initiates work.** The primary contractor shall supply resumes and/or other documents to prove sub-contractor's qualifications. DWWM will consider the prime vendor to be the sole point of contact with regard to authorized work under the contract; however, this provision does not prohibit the DWWM from directly contacting subcontractors.

CONFIDENTIALITY

The vendor agrees that any and all data, analyses, materials, reports or other information, oral or written, prepared by the vendor with respect to this requisition shall, except for information which has been publicly available, be treated as confidential and shall not be utilized, released, published, or disclosed, by the vendor at any time for any purpose whatsoever other than to provide consultation or other service to the DWWM.

Attachment A.

**WVDEP/DWWM Requirements for Processing Benthic Macroinvertebrate
Samples (Preparing a 200 organism sub-sample)**

INTRODUCTION

Sorting macroinvertebrates from benthic survey samples (a procedure often referred to as "bug sorting") is an extremely important step in the biological research performed by the Department of Environmental Protection. The quality of the work performed by the "sorter" influences the quality of subsequent processes, such as identification and data analysis. A competent "sorter" must be able to recognize the morphological diversity of aquatic organisms, as well as the various methods these organisms may use to hide themselves from predators. The outcome of the final study may be affected, even if only a few organisms are overlooked during the sorting process.

The processes described below were derived from: Barbour, M. T. et al. "Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish", Second Ed., EPA 841-B-99-002. These protocols may be downloaded from the Internet at <http://www.epa.gov/owowwtr1/monitoring/rbp/download.html>.

DEFINITIONS

MACROINVERTEBRATES - Animals that are large enough to be seen with the naked eye and do not have a backbone.

BENTHIC ORGANISMS (or BENTHOS) - Living organisms that reside on the bottom of streams, rivers, or lakes. Benthos may be vertebrates, invertebrates, or plants.

REFERENCE COLLECTION – A reference collection is a set of specimens, each representing some taxonomic level and not necessarily limited to a specific project. For the purposes of DWWM's studies, a reference collection does not have to be limited to a particular watershed. Reference collections should have expert confirmation of each taxon. These collections are used to verify identifications of subsequent samples.

VOUCHER COLLECTION – The voucher collection consists of the actual specimens collected during the project. Following identification and enumeration, all specimens collected for this project should be maintained in a voucher collection. This collection will be returned to the DWWM.

EQUIPMENT

1. Sample Jar - Contains the unprocessed sample, which consists of benthic organisms and stream debris.
2. Sample vial - for storage of processed sample. This container may be a plastic/glass vial or a larger plastic bottle. Most samples will fit into a 10 ml vial, however, large organisms such as crayfish, will require larger bottles.
3. White Flat-bottom Pans - contain sample during the sorting process
4. Denatured Alcohol - preservative used in unprocessed and processed samples
5. Sieves - #30 sieves are used to separate alcohol and fine debris from the sample prior to sorting.
6. Sieve box - a homemade wooden frame with #30 mesh screening on the bottom is used to evenly distribute the sieved sample for randomly selecting the sub-sample. The internal dimensions of the box can vary (i.e., 10 in. X 10 in. or 5 in. X 20 in.); however, all boxes are marked into 100 1-inch by 1-inch grids.
7. Labels - Self-adhesive labels are used to identify the contents of the sample bottle (i.e., the sorted sample).
8. Scotch Tape - Used on label as additional adhesive.
9. Pencil - used to label sample bottle.
10. Crucible - or other small container, is used for short term, intermediate storage of the sample during the sorting process.
11. Forceps - Fine tipped forceps are used to remove the organisms from the debris.
12. Illuminated Magnifier - an optical aid to illuminate and magnify the sample during the sorting process. Alternatively, magnifying visors and a desk lamp can be used.
13. Squirt bottle - filled with alcohol, used to rinse organisms into sample bottle.
14. Plexiglas - used to cover sample partially sorted overnight to prevent evaporation.

SAFETY

Protective eyewear should be worn during sample processing to prevent contact with the residual alcohol in the specimens and debris.

PROCEDURES

1. Select the sample to be sorted. If a sample is in two jars, the contents of the jars must be combined before picking is initiated.
2. Select a small bottle that will hold the organisms after sorting is completed. Usually a 10 mL bottle is adequate for a 200-organisms sub-sample. An additional bottle may be needed if the sample contains large organisms.
3. Label the bottle:
 - a. Use self-adhesive labels
 - b. Using a pencil (ink will run if alcohol is spilled on the label), copy all information on the sample jar label onto the self-adhesive label. The label must include the following information:

Stream Name
Station Number (Random Number and/or AN-code)
Sample ID# (Short number to link electronic results to final database)
Sample Date
County
Initials of Sample Collector
Initials of Sample Processor
of grids sorted
of organisms in final sample

If any of this information is missing from the original sample jar label, notify the DWWM biologists so that the error can be corrected.

- c. Attach the new label on the bottle and secure with clear tape.
 - d. Prepare an *internal* label for the sample using permanent ink. Internal label should contain the same information as required in 3-b above. This label will serve as a back-up if the external label is lost. (External labels may be omitted for samples stored in

transparent glass containers, as long as the internal label is clearly visible.)

4. Prepare the sample for sorting. This step is performed in a sink and should be done under a fume hood or in a well-ventilated area.

- a. Under a fume hood, open sample jar and pour contents into the sieve box
- b. Rinse sample jar into sieve box and examine jar to make sure all detritus and bugs have been removed.
- c. Rinse the contents of the sieve box in tap water to remove remaining alcohol and to rinse out fine sand and sediment.
- d. Carefully rinse any large detritus (i.e. leaves) or stones, making sure that all organisms on these items are returned to the sieve. Discard the leaves and rocks after rinsing.
- e. Place the box in a few inches of water and gently swirl it until the contents are evenly distributed. ***Even distribution is extremely important in this step.*** If debris is clumped, the organisms will not be distributed evenly and the final result may be skewed. If the sample was divided into more than one jar, the jars are to be combined at this point. When the sample is evenly distributed throughout the gridded screen box, remove it from the water.
- f. Using a random number generator, select the first grid to be sorted. Using the "cookie cutter", isolate the organisms within the chosen grid and scoop the contents of the grid into a white enamel pan. Be careful not to destroy any organisms during this step. Organisms with their head inside the grid are to be included within the grid. If you can't tell which end is the head, then the organism belongs in the grid that contains the largest portion of the body.

5. Sorting

- a. Fill a crucible with 75% alcohol. A small piece of tape, rolled into a ring so the adhesive is exposed, may be attached to the bottom of the crucible to prevent tipping. If preferred, another small wide-mouth container may be substituted for the crucible.
- b. Using fine-tipped forceps and illuminated magnifier or magni-visor (sorter should use magnification of at least 2x), remove all invertebrates from the sub-sample and transfer to the alcohol filled crucible. Look for small clinging organisms that could be attached to larger organisms (e.g. midges on crayfish). Keep track of the number of organisms that have been sorted. ***If there are a significant number of invertebrates that appear to be terrestrial, include them in the sample, but do not include them in the 200-organism***

count. The taxonomist will verify whether these organisms are truly terrestrial or semi-aquatic. Do not include empty clam or snail shells, or parts of organisms that are easily disconnected from the specimen (legs, gills, etc.).

- c. If leaves are present, be sure to examine both surfaces. Watch for unusual clumps of twigs, leaves, or sand, which may be protective cases for some organisms. If cases are found, both the case and the organism should be sorted. If the organism is in the case, the case and organism should be kept together. If an empty case is found, it should also be removed.
- d. If there is any doubt to the identity of an object (is it a seed or a bug?), it should be sorted, but not counted. A senior biologist should be notified if a large number of questionable objects are present.
- e. When all the organisms appear to have been removed from the pan, agitate the contents of the pan and look again. Often the agitation will reorient an organism that was previously overlooked.
- f. Have a senior biologist inspect the pan after sorting has been completed. The biologist will point out any organisms that have been overlooked or misidentified as detritus. As the sorter becomes more proficient at his/her task, this step will be reduced in frequency.
- g. If 200 or more organisms have been obtained from the initial grid chosen, sub-sampling is complete. If fewer than 180 organisms have been collected, another grid is randomly chosen and steps 4.f through 5.e are repeated until at least 180 organisms are obtained or until the entire sample has been sorted. The remainder of the sample (i.e., the non-selected grids) may be discarded.
- h. Pour the contents of the crucible into the labeled vial. Use a squirt bottle containing alcohol to rinse the organisms from the crucible. Make sure that all organisms in the vial are fully submerged in the alcohol. If some remain on vial sides, use the squirt bottle to rinse them down into the alcohol.

6. Record Keeping

- a. After a sample has been sorted, record the date and your initials in the sample log book. The **total number of organisms picked** and the **number of grids sorted** should also be documented for each sample. This last step is very important as these values are used to calculate an estimate of organism density and to determine sample comparability.

QUALITY ASSURANCE/QUALITY CONTROL

Sorting efficiency shall be evaluated for 5% of the samples. Recovery errors cannot exceed 10% (i.e., no more than 20 organisms can be missed by the sorter for a given sample) of the total sample (composite of remnants from each grid sorted). If the sorter does not meet this standard, the sorted sample remnants shall be re-checked until the recovery limits are attained. A record of all samples sorted, a list of quality control (QC) checks and documentation of any corrective action taken shall be maintained by the vendor to document the process. DWWM reserves the right to review QA/QC documentation upon request.

Attachment B.

WVDEP/DWWM Requirements for the Identification of Macroinvertebrates

Consultant will be required to provide identification services only. No data analysis will be required. At the completion of the projects (or portions of the project) the consultant will submit the completed "WVDEP/ WAS BENTHIC MACROINVERTEBRATE LAB SHEET", voucher specimens, and identification results in Microsoft Excel or Access format. (The voucher specimens are essentially all specimens in the 200 organism sub-sample that have not been included in the reference collection.) Vendor may retain reference specimens until the project has been completed.

Aquatic insects (*including all Diptera*), crayfish, snails and clams in the 200-organism subsample are to be identified to the genus level as specified in the project contract. Aquatic invertebrates that do not require genus level identification are Nemertea, Oligochaeta, Nematoda, Hydroida, Turbellaria, Bryozoa, and Hirudinea. These organisms need only be identified to the taxonomic level (phylum, class, order, etc.) indicated in the previous sentence. However, it would be desirable to report lower taxonomic levels if these organisms are easily identified. Vertebrates and terrestrial organisms are not to be identified. If these organisms are included in the sample, they shall be retained with the sample and returned to DWWM.

MATERIALS AND SUPPLIES

1. Dissecting Microscope - for examination of gross features.
2. Compound Microscope - for examining minute features. Phase-contrast microscopes are preferable.
3. Fine-tipped forceps - for manipulating specimens.
4. Fine-tipped probes - for manipulating specimens.
5. Petri dishes – or other container to hold specimens during identification.
6. Alcohol - 75% ethanol or isopropanol is used to preserve the samples.
7. Wash Bottle - used for alcohol storage.
8. Microscope Slides and glass cover slips - for examination of small specimens (e.g. midges) and/or body parts under a compound microscope. Slides and cover slips should be clean.

9. Benthic Macroinvertebrate Lab Sheet - standard for recording results of identification and enumeration (Figure 1).

10. Mounting Medium - CMC-10 mounting medium is used to prepare permanent mounts of microscopic specimens.

11. Taxonomic Keys –

The primary taxonomic keys are listed below. The contractor may use other taxonomic keys for lower-level identification; however, these references must be current and up-to-date. The contractor shall provide a list of references used in the identification of all specimens.

General Keys:

Brigham, A. R., W. U. Brigham, and A. Gnilka (eds.). 1982. Aquatic Insects and Oligochaetes of North and South Carolina. Midwest Aquatic Enterprises, Mahomet, Illinois.

Merritt, R. W. and K. W. Cummins, eds. 1996. An Introduction to the Aquatic Insects of North America, Third Edition. Kendall and Hunt Publishing Company, Dubuque, Iowa.

Peckarsky, B. L., P. R. Fraissinet, M. A. Penton, and D. J. Conklin, Jr. 1990. Freshwater Macroinvertebrates of Northeastern North America. Cornell University Press.

Pennack, R. W. 1978. Fresh-water invertebrates of the United States. John Wiley and Sons, New York

Pennak, R. W. 1989. 3rd Edition. Fresh-water Invertebrates of the United States – Protozoa to Mollusca. John Wiley and Sons, Inc., New York, New York. 628 pp.

Thorp, J.H and A.P.Covich, Eds. 2001. Ecology and Classification of North American Freshwater Invertebrates. Second Edition. Academic Press.

Annelida:

Brinkhurst, R. O. 1986. Guide to the freshwater aquatic microdile oligochaetes of North America. Canadian Spec. Publ. Fish. Aquat. Sci. 84: 259 pp.

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

Crustacea:

Hobbs, H. H., Jr. 1972. Biota of freshwater ecosystems, identification manual no. 9. Crayfishes (Astacidae) of North and Middle America. EPA-WPCRS No. 18050, ELD05/72. Supt. Doc. No. 5501-0399, U. S. Environ. Prot. Agency, Washington, D.C. 173 pp.

Holsinger, J. R. 1972. Biota of freshwater ecosystems, identification manual. Freshwater amphipod crustaceans (Gammaridae) of North America. WPCRS No. 18050, ELD04/72. Supt. Doc. No. 5501-0369, U. S. Environ. Prot. Agency, Washington, D.C. 89 pp.

Taylor, C. A., and G. A. Schuster. 2004. The Crayfishes of Kentucky. Illinois Natural History Survey Special Publication No. 28. viii + 219pp.

Williams, W. D. 1972. Biota of freshwater ecosystems, identification manual no. 7. Freshwater isopods (Asellidae) of North America. WPCRS No. 18050, ELD05/72. Supt. Doc. No. 5501-0390, U. S. Environ. Prot. Agency, Washington, D.C. 45 pp.

Coleoptera:

Brown, H. P. 1972. Aquatic dryopoid beetles (Coleoptera) of the United States. U. S. Government Printing Office.

Epler, J. H. 1996. Identification manual for the water beetles of Florida (Coleoptera: Dryopidae, Dytiscidae, Elmidae, Gyrinidae, Haliplidae, Hydraenidae, Hydrophilidae, Noteridae, Psephenidae, Ptilodactylidae, Scirtidae). Florida Dept. Env. Prot., Tallahassee, Florida.

Diptera:

Adler, P. H. and K. C. Kim. 1986. The black flies of Pennsylvania (Simuliidae, Diptera). Bionomics, taxonomy, and distribution. The Pennsylvania State Univ., Agric. Exp. Stat. Bull. 856, 85 pp.

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

Epler, J. H. 1995. (Revised Edition). Identification manual for the larval Chironomidae (Diptera) of Florida. Florida Dept. Env. Prot., Tallahassee, FL 302 pp.

Epler, J. H. 2001. Identification Manual for the Larval Chironomidae (Diptera) of North and South Carolina. Available on-line:

http://www.esb.enr.state.nc.us/BAUwww/Chiron_manual/intro.pdf

Gelhaus, J. K.. 2002 Manual for the Identification of Aquatic Crane Fly Larvae for Southeastern United States. Unpublished.

McAlpine, J.F. (Ed.). 1989. Manual of Nearctic Diptera. Vols. 1-3. Research Branch Agriculture Canada. Monograph No. 32.

Pechuman, L. L., D. W. Webb, and H. J. Teskey. 1983. The Diptera, or true flies, of Illinois. I. Tabanidae. Illinois Nat. Hist. Surv. Bull. 33(1):1-122.

Simpson, K. W., R. W. Bode, and P. Albu. 1982. Keys for the genus *Cricotopus* adapted from "Revision der Gattung *Cricotopus* van der Wulp und ihrer Verwandten (Diptera, Chironomidae)" by M. Hirvenoja. Bull. 450, New York St. Mus., Albany, New York.

Webb, D. W. 1977. The Nearctic Athericidae. J. Kansas Entomol. Soc. 50: 473-495.

Ephemeroptera:

Bednarik, A. F. and W. P. McCafferty. 1979. Biosystematic revision of the genus *Stenonema* (Ephemeroptera: Heptageniidae). Can. Bull. Fish. Aquat. Sci. 21:1-73.

Berner, L. and M. L. Pescador. 1988. 2nd Ed. The mayflies of Florida. Univ. Florida Press, Gainesville, Florida. 352 pp.

Burks, B. D. 1953. The mayflies, or Ephemeroptera, of Illinois. Illinois Nat. Hist. Surv. (Urbana). Bull. 26, Part1:1-211.

Edmunds, G. F., Jr., S. L. Jensen, and L. Berner. 1976. Mayflies of North and Central America. University of Minnesota Press.

Lugo-Ortiz, C. R. and W. P. McCafferty. 1998. A new North American genus of Baetidae (Ephemeroptera) and key to *Baetis* complex genera. Entomol. News 109:345-353.

Lugo-Ortiz, C. R., W. P. McCafferty, and R. D. Waltz. 1999. Definition and reorganization of the genus *Pseudocloeon* (Ephemeroptera: Baetidae) with new species descriptions and combinations. Trans. American Entomol. Soc. 125:1-37.

McCafferty, W. P. 1975. The burrowing mayflies (Ephemeroptera: Ephemeridae) of the United States. Trans. Amer. Entomol. Soc. 101:447-504.

McCafferty, W. P. and R. D. Waltz. 1995. *Labiobaetis* (Ephemeroptera: Baetidae): new status, new North American species, and related new genus. Entomol. News 106(1):19-28.

McCafferty, W. P., M. L. Wagle, and R. D. Waltz. 1994. Systematics and biology of *Acentrella turbida* (McDunnough) (Ephemeroptera: Baetidae). Pan-Pacific Entomol. 70(4):301-308.

Morihara, D. K. and W. P. McCafferty. 1979. The *Baetis* larvae of North America (Ephemeroptera: Baetidae). Trans. Amer. Entomol. Soc. 105(2):139-221.

Pescador, M. L. and L. Berner. 1981. The mayfly Baetiscidae (Ephemeroptera). Part 2. Biosystematics of the genus *Baetisca*. Trans. Amer. Entomol. Soc. 107:163-228.

Provonsha, A. V. 1990. A revision of the genus *Caenis* in North America (Ephemeroptera: Caenidae). Trans. Amer. Entomol. Soc. 116(4):801-884.

Tarter, D. C. and R. F. Kirchner. 1978. A new species of *Baetisca* from West Virginia (Ephemeroptera: Baetiscidae). Entomol. News 89(9-10):209-213.

Mollusca:

Branson, B. A. 1987. Keys to the aquatic gastropoda known from Kentucky. Trans. Kentucky Acad. Sci. 48(1-2):11-19.

Burch, J. B. 1972. Biota of freshwater ecosystems, identification manual no. 3. Freshwater sphaeriacean clams (Mollusca: Pelecypoda) of North America. WPCRS No. 18050, ELD03/72. Supt. Doc. No. 5501-0367, U. S. Environ. Prot. Agency, Washington, D.C. 31 pp.

Burch, J. B. 1982. Freshwater Snails (Mollusca: Gastropoda) of North America. United States Environmental Protection Agency. EPA-600/3-82-026.

Parmalee, P.W. and A.E. Bogan. 1998. The Freshwater Mussels of Tennessee. University Tennessee Press. Knoxville, Tennessee. 328 pp.

Odonata:

Needham, J. G. and M. J. Westfall, Jr., and M.L. May. 2000. Dragonflies of North America. Scientific publishers, Gainesville, Florida. xvi and 940 pp.

Westfall, M. J. and M. L. May. 1996. Damselflies of North America. Scientific Publishers, Inc., Gainesville, Florida. 650 pp.

Plecoptera:

Frison, T. H. 1935. The stoneflies, or Plecoptera, of Illinois. Illinois Nat. Surv. Bull. 20: 280-471.

Stewart, K. W. and B. P. Stark. 2002. Nymphs of North American stonefly genera (Plecoptera)..Second Edition. The Caddis Press. Columbus, Ohio. xii + 510 pp

Trichoptera:

- Chapin, J. W. 1978. Systematics of nearctic *Micrasema* (Trichoptera: Brachycentridae). Ph.D. Dissertation, Clemson University, Clemson, South Carolina, 136 pp.
- Flint, O. S. 1962. Larvae of the Genus *Rhyacophila* in eastern North America (Trichoptera: Rhyacophilidae). Proc. U.S. National Mus. (Washington, D.C.) 113:465-493.
- Flint, O. S. 1984. The genus *Brachycentrus* in North America, with a proposed phylogeny of the genera of Brachycentridae (Trichoptera). Smith. Contrib. Zool. No. 398.
- Floyd, M. A. 1995. Larvae of the caddisfly genus *Oecetis* in North America. Bull. Ohio Biol. Surv., New Series, Vol. 10, No. 2, viii + 85 pp.
- Glover, J. B. 1996. Larvae of the caddisfly genera *Triaenodes* and *Ylodes* (Trichoptera: Leptoceridae) in North America. Bull. Ohio Biol. Surv., New Series, Vol. 11, No. 2, vii + 89 pp.
- Prather, A.L. and J.C. Morse. 2001. Eastern Nearctic *Rhyacophila* species, with revision of the *Rhyacophila invaria* group Trichoptera: Rhyacophilidae. Trans American Entomol. Soc. 127:85-166.
- Ross, H. H. 1944. The caddisflies, or Trichoptera, of Illinois. Illinois Nat. Hist. Surv. (Urbana). Bull. 23, Art. 1:1-326.
- Schefter, P. W. and G. B. Wiggins. 1986. A systematic study of the Nearctic larvae of the *Hydropsyche morosa* Group (Trichoptera: Hydropsychidae). Royal Ontario Mus., Toronto, Canada. 94 pp.
- Schuster, G. A. and D. A. Etnier. 1978. A manual for the identification of the larvae of the caddisfly genera *Hydropsyche* Pictet and *Symphitopsyche* Ulmer in eastern and central North America (Trichoptera: Hydropsychidae). EPA-600/4-78-060.
- Wiggins, G. B. 1996. Larvae of the North American caddisfly genera (Trichoptera), 2nd Edition. Univ. Toronto Press, Canada. 457 pp.

Procedures for mounting Chironomidae (and other small specimens)

The procedures that follow are summarized from Epler's *Identification Manual for the Larval Chironomidae (Diptera) of North and South Carolina*.

1. Label a clean glass slide. Label should include, at a minimum, the stream name, stream code, collection data and sample ID number.
2. Place 2-5 drops of CMC-10 mounting medium on the slide.
3. Place the specimens in the mounting medium, ventral side up, head pointing down ("south"). Tease out larger bubbles.
4. Gently lower coverslip over the mounting medium at an angle.
5. Use the cover slip to reposition larvae, if desired. Then gently press down the cover slip over the head capsules with pencil eraser to spread the mouthparts and over the anal end to spread the hind pro-legs.
6. Lay the slide on a flat surface and allow it to cure for 2-3 hours. If air bubbles form, fill them in with fresh medium and allow to cure 1-2 more hours. Then ring the slide with more medium or clear fingernail polish.

Quality Assurance / Quality Control

A minimum of 5 percent of the samples are re-identified by a taxonomist other than the original identifier. Errors are brought to the attention of the original taxonomist and subsequent identifications are subject to scrutiny until errors are resolved. DWWM may request results of the QA/QC activities.



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BID OPENING DATE: 02/20/2008		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
***** ADDENDUM NO. 1 *****						
ADDENDUM ISSUED FOR THE BENTHIC MICROINVERTABRATE SAMPLE CONTRACT TO DISTRIBUTE THE AGENCY REVISED BID SCHEDULE.						
PLEASE USE THE ATTACHED WHEN SUBMITTING QUOTATION.						
BID DATE AND OPENING TIME ARE EXTENDED TO 02/20/2008 AT 1:30 PM.						
***** NO OTHER CHANGES *****						
0001	1	LS		493-09		
WATER, WASTE WATER AND SOIL SAMPLE ANALYSIS						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE 1-800-940-4025	DATE
TITLE	FEIN 34-1603505	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

002

REVISED PER ADDENDUM NO. 1

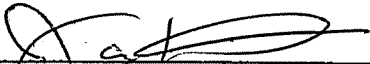
DEP13868 BID SHEET

Item No.	Quantity	Description	Unit Price	Amount
A	500	Per sample un-sorted, identified to genus level: 200 organism subsample	\$210.50	\$105,250.00
B	50	Per sample pre-sorted, identified to genus level (necessary for quality assurance checks; 200 organism 200 organism subsample	\$120.00	\$6,000.00
C	20	Per sample un-sorted, identified to genus level; entire sample.	\$390.50	\$7,810.00
D	20	Per sample pre-sorted, identified to genus level (necessary for quality control assurance checks); entire sample	\$240.00	\$4,800.00
E	4	Per each "sample pick-up/delivery" not "per sample" (assume 100 samples per pickup)	\$100.00	\$400.00
F	20 hr	Cost/hour for professional staff representation of data in legal/administrative setting	\$95.00	\$1900.00

TOTAL =

\$126,160.00

Contractor: ENVINO SCIENCE INC.

Signature: 

Date: 2/11/2008

Quantities listed on the bid schedule are for bid evaluation purposes only and are not a guarantee of quantities to be ordered over the life of the contract. Actual quantities ordered may be more or less than those stated on this schedule.

STATE OF WEST VIRGINIA
Purchasing Division

030

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

LICENSING: Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY: The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit www.state.wv.us/admin/purchase/privacy for the Notice of Agency Confidentiality Policies.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), it is hereby certified that the vendor acknowledges the information in this said affidavit and are in compliance with the requirements as stated.

Vendor's Name: ENVIRONMENTAL SCIENCE INC

Authorized Signature:  Date: 2/11/08



RHONDA J. MENDEL
Macroinvertebrate Taxonomist

EDUCATION

M.S., Aquatic Entomology, 1989, University of Maine at Orono.

B.S., Biology, 1986, Grove City College, Grove City, PA.

CERTIFICATIONS

NABS Certified Level 2 Group 3 Eastern Chironomidae

NABS Certified Level 2 Group 3 Eastern Ephemeroptera, Plecoptera and Trichoptera

Ohio EPA Level 3 QDC Macroinvertebrates

PROFESSIONAL EXPERIENCE

Aquatic Biologist, Macroinvertebrate Taxonomist, EnviroScience, Inc., Stow, OH. 6/03 – Present.

Responsible for collecting and identifying aquatic macroinvertebrates for the evaluation of water quality. Other duties include: field work and habitat assessment associated with collecting macroinvertebrates, reviewing all macroinvertebrate data, evaluating and interpreting data in accordance with pre-established protocols (state or federal), generating reports for benthic clients, establishing and curating an in-house macroinvertebrate reference collection, tracking and recording changes in taxonomy and adding new taxonomic publications to the reference library.

Senior Entomologist, Lotic, Inc. Environmental Consultants, Unity, Maine. 08/91 – 08/00

Responsible for monitoring polluted streams, rivers, lakes and wetlands using freshwater macroinvertebrates as indicators of ecological impairment. Duties included: all field work associated with collecting macroinvertebrates, reviewing all macroinvertebrate data (Quality Assurance Officer), evaluating and interpreting data in accordance with pre-established protocols (state or federal), generating reports for benthic clients, establishing and curating an extensive in-house macroinvertebrate reference collection, tracking and recording changes in taxonomy and adding new taxonomic publications to the reference library. Other responsibilities included meeting with clients and regulatory agencies as necessary, performing NPDES acute and chronic toxicity tests and general consulting.

Coordinator: Biomonitoring Division, Acheron, Inc., Newport, Maine. 05/90 – 07/91

Responsible for coordinating and providing ecological assessments of aquatic environments using macroinvertebrates as indicators of ecological impairment. Also responsible for impact assessments for engineering/construction projects involving streams and wetlands. Duties and responsibilities included: collecting and identifying macroinvertebrates, evaluating and interpreting data using pre-established protocols (state and or federal), generating reports for benthic clients, meeting with clients and regulatory agencies as necessary, performing NPDES acute and chronic toxicity tests and general consulting.

Aquatic Biologist, Acheron, Inc., Newport, Maine. 05/89 – 05/90

Assisted in providing ecological assessments of aquatic environments by monitoring macroinvertebrate populations and performing toxicity evaluations. Duties included: benthic

sample collection, macroinvertebrate identification, data evaluation, freshwater and marine toxicity evaluations and consulting.

Instructor, University of Maine, Department of Entomology, Orono, Maine. 09/88 – 12/88

Duties involved teaching 6 sections of Entomology laboratory, preparing for lectures and examinations, and curating the insect reference collection.

Field Research Technician, Sugarloaf USA, Carrabassett Valley, Maine. 05/88 – 04/89

Researched the ecological effects of using *Bacillus thuringiensis* var. *israelensis* (*B.t.i.*) to reduce populations of black flies in the Carrabassett River, Maine. Brook trout were collected with an electroshocking device to compare diets between treatment and control areas. Duties included monitoring immature and adult black-fly populations, measuring stream parameters, applying *B.t.i.*, electrofishing, identifying invertebrates in fish stomachs and quantifying gut contents, establishing a reference collection from the study area for comparative purposes, and delivering several lectures on the use, mode of action and efficacy of *B.t.i.*

Aquatic Entomology Technician, Georgetown, Maine. 05/88-09/88

Assisted in the application of *B.t.i.* to salt marsh pools in Reid State Park, identified adult species of mosquitoes, and evaluated the efficiency of a mosquito abatement program in salt marsh areas.

Field Research Technician, Sugarloaf USA, Carrabassett Valley, Maine. 05/87-09/87

Performed black-fly speciation, *B.t.i.* applications, and stream flagging.

Research Assistant, University of Maine, Dept. of Entomology, Orono, Maine. 06/86-05/88

Researched the human-nuisance black flies of the Penobscot Valley in reference to their relative abundance and corresponding nuisance as perceived by residents of Penobscot County, Maine. Identified nuisance species of black flies and correlated abundance of these species with the proximity of the larval areas in the Penobscot River.

COURSES TAUGHT

R. J. Mendel and A. J. Smith. *Introduction to chironomidae taxonomy*. Black Rock Forest, Orange Co., NY. May 24 - 26, 2006.

Mendel, R. J. and R. W. Bode. 2006. *Advanced Midge Identification Workshop*. Presented at US EPA Region III Mid-Atlantic Aquatic Biologist Workshop. March 22 - 24, 2006.

Bode, R.W. and **R. J. Mendel**. 2005. *Advanced Chironomidae Taxonomy Workshop*. Presented at US EPA Region I New England Association of Environmental Biologists Meetings. March 16 - 18, 2005.

PUBLICATIONS/PRESENTATIONS

- Mendel, M.J., P.H. Adler & **R.J. Mendel**. 2008. The Distribution of Ohio Black fly species and Sibling Species: Cytological Results from a second field season. Presented at the Mid-Atlantic Water Pollution Biology Workshop, Berkeley Springs, WV 4/2/08.
- Mendel, M.J., P.H. Adler & **R.J. Mendel**. 2007. "A Survey of Black Flies (Simuliidae), Including Sibling Species, in Ohio." Presented at the Mid-Atlantic Water Pollution Biology Workshop, Berkeley Springs, WV 4/4/07.
- Mendel, R. J.** & M. J. Mendel. 2004. "Sampling and subsampling efficiency: the use of artificial substrates vs. kick nets in a high quality stream." At the Mid-Atlantic Water Pollution Biology Workshop, Berkeley Springs, WV 3/25/04.
- Mendel, R.J.** & M.J. Mendel. 2003. "A comparison of various techniques to sample macroinvertebrates from a northeastern stream supporting an extremely diverse fauna" Presented at the Mid-Atlantic Water Pollution Biology Workshop, Berkeley Springs, WV 3/27/03.
- Grantham, B.L. and **R.J. Mendel**. 1995. "The Development of Numerical Water Quality Criteria using a Regional Data Base." P. 33-40 in J. Ciborowski and L. Corkum (Eds.) *Current Directions in Research on Ephemeroptera*. Canadian Scholar's Press, Inc.
- Grantham, B.L. and **R.J. Mendel**. 1992. Biological Criteria in NPDES Monitoring. Journal of the Marine Waste Water Control Association. 21(1): 15-17.
- Grantham, B.L. and **R.J. Mendel**. 1992. "The Development of Numerical Water Quality Criteria using a Regional Data Base." Presented at the VII International Conference on Ephemeroptera, Orono, Maine. August 3, 1992.
- Mendel, R.J.** and B.L. Grantham. 1992. "A Comparison of Winter Insect Populations using Different Sampling Techniques." Presented at the North American Benthological Society Meeting, Louisville, Kentucky. May 29, 1992.
- Boyer, R.J.** 1989. Human Nuisance Black Flies (Diptera: Simuliidae) of the Penobscot River, Maine. M.S. Thesis, University of Maine, Orono. 102 pp.
- Gibbs, K.E., **R.J Boyer**, B.P. Molloy, and D.A. Hutchins. 1988. Experimental Stream Applications of B.t.i. for Human Nuisance Black Fly Management in a Recreational Area, Maine Agricultural Experiment Station Technical Bulletin 133. 15 pp.
- Boyer, R.J.** 1987. "The Abundance of Late Season Human-Nuisance Black Flies along the Penobscot River, Maine." Presented at the Northeast Regional Black Fly Project (NE118) Meeting, Dixville Notch, New Hampshire, February 1987.

TAXONOMIC CERTIFICATION

This certificate is awarded to

RHONDA MENDEL

in recognition of the successful completion for

LEVEL 2 GROUP 2 EASTERN EPHEMEROPTERA, PLECOPTERA and TRICHOPTERA

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trefor Reynoldson

Sept. 1, 2007

Date

TAXONOMIC CERTIFICATION

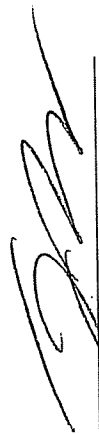
This certificate is awarded to

RHONDA MENDEL

in recognition of the successful completion for

LEVEL 2 GROUP 3 EASTERN CHIRONOMIDAE

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trefor Reynoldson

Sept. 1, 2007

Date



Alexander J. Smith
Consulting Scientist
Macroinvertebrate Taxonomist

EDUCATION

2005 State University of New York (SUNY) at Albany, Albany NY, MS, Ecology
2001 SUNY College of Environmental Science and Forestry, Syracuse NY, BS,
Biology
1999 Hudson Valley Community College, Troy NY, AS, Environmental Science

CERTIFICATIONS

North American Benthological Society Certified Level 2 Taxonomist
Eastern Ephemeroptera, Plecoptera, and Trichoptera – 2006
Eastern Chironomidae – 2008

PROFESSIONAL EXPERIENCE

Research Scientist II, 2007-Present
New York State Department of Environmental Conservation Stream Biomonitoring Unit

Research Scientist for the New York State Department of Environmental Conservation Stream Biomonitoring Unit, Division of Water. Duties include running the day-to-day activities of the NYS biological monitoring program including: supervising unit staff, project manager for applied benthic science research such as developing effects-based river and stream nutrient criteria, development of biotic indices, evaluation of biological assessment regulatory frame works; authorship of scientific literature; project QA/QC development; data interpretation, analysis, and reporting on biological and water chemical information; field collection of aquatic macroinvertebrates, periphyton, and water chemistries; processing of invertebrate samples including subsampling and genus/species level invertebrate taxonomy of most groups with a focus on species of Chironomidae; database maintenance and data entry.

Environmental Analyst II, 2005-2007
New England Interstate Water Pollution Control Commission - NYSDEC DOW

Contractor for the New York State Department of Environmental Conservation Stream Biomonitoring Unit, Division of Water. Duties included all of those currently performed explained above, except as a contractor rather than an official state employee.

Environmental Analyst , 2001-2005
New England Interstate Water Pollution Control Commission - NYSDEC DOW

Contractor for the New York State Department of Environmental Conservation Stream Biomonitoring Unit, Division of Water. Duties included data interpretation, analysis, and reporting on biological and water chemical information; field collection of aquatic macroinvertebrates, periphyton, and water chemistries; processing of invertebrate

samples including subsampling and genus/species level invertebrate taxonomy of most groups with a focus on species of Chironomidae; database maintenance and data entry.

Summer Intern, 2000-2001

**New York State Department of Environmental Conservation DOW Stream
Biomonitoring Unit**

Worked for two summers during undergraduate career. Duties consisted mainly of stream macroinvertebrate sample collection, processing, and identification; database maintenance, and data entry; during year two duties also included data interpretation, analysis, and reporting.

CURRENT RESEARCH

Testing the application of the Biological Condition Gradient (BCG) and Tiered Aquatic Life Uses in the Lower Hudson River watershed.

Nonpoint source pollution and development of effects-based nutrient criteria using macroinvertebrates, periphyton, and water chemistries in wadeable streams of New York State. Expected completion date Fall, 2010.

Nonpoint source pollution and development of effects-based nutrient criteria using macroinvertebrates, periphyton, and water chemistries in large river basins of New York State. Expected completion date Fall, 2007.

Use of N15 isotopes to trace nitrogen sources in river systems and develop better biological indicators of nutrient enrichment from agricultural activities. Cooperative project with the United States Geologic Survey. Expected completion date Fall, 2008.

Derivation of nutrient optima for benthic macroinvertebrates to establish a nutrient specific biotic index to assess stream and river nutrient enrichment. Recent publication in Ecological Indicators – 2007.

RECENT FUNDING AWARDS AS PROJECT DIRECTOR

2007 (\$150,000): Investigating nonpoint source pollution and development of effects-based nutrient criteria using macroinvertebrates, periphyton, and water chemistries in wadeable streams of New York State.

2007 (\$75,000): Legacy Biological Assessment Database Conversion Project and the inclusion of a GIS landscape variable calculator.

2006 (\$75,000): Investigating nonpoint source pollution and development of effects-based nutrient criteria using macroinvertebrates, periphyton, and water chemistries in large river basins of New York State.

2005 (\$35,000): A nutrient biotic index (NBI) for use with benthic macroinvertebrate communities.

RECENT PUBLICATIONS

- Smith, A. J., R. W. Bode. *Evaluation of the Nutrient Biotic Index (NBI) and its performance in identifying nutrient enrichment: relationships with landuse and water chemistries*. Manuscript in progress.
- Smith, A. J., R. W. Bode, and G. S. Kleppel. 2007. *A nutrient biotic index (NBI) for use with benthic macroinvertebrate communities*. *Ecological Indicators* 7:371-386
- Smith, A.J., R.W. Bode, M.A. Novak, L.E. Abele and D.L. Heitzman. 2007. *Biological Assessment of Streams in the Area of Western Schenectady*. NYS Dept. of Environmental Conservation. Technical Report, 38 pages.
- Smith, A.J., R.W. Bode, M.A. Novak, L.E. Abele and D.L. Heitzman. 2007. *Biological Assessment of Crane Brook*. NYS Dept. of Environmental Conservation. Technical Report, 39 pages.
- Smith, A.J., R.W. Bode, M.A. Novak, L.E. Abele and D.L. Heitzman. 2006. *A Nutrient Biotic Index (NBI) for use with benthic macroinvertebrate communities and its relationship with surface water nutrient concentrations in flowing waters*. NYS Dept. of Environmental Conservation. Technical Report, 72 pages.
- Caldwell, B. A., R. W. Bode and A. J. Smith. 2005. *Description of the immature stages and adult female of Neostempellina Reissi Caldwell (Diptera: Chironomidae)*. Proceedings of the XV International Symposium on Chironomidae (In Press).
- Smith, A.J. and R.W. Bode. 2004. *Analysis of Variability in New York State Benthic Macroinvertebrate Samples*. NYS Dept. of Environmental Conservation. Technical Report, 43 pages.
- Smith, A.J., R.W. Bode, M.A. Novak, L.E. Abele and D.L. Heitzman. 2004. *Biological Assessment of Crane Brook*. NYS Dept. of Environmental Conservation. Technical Report, 31 pages.
- Smith, A.J., R.W. Bode, M.A. Novak, L.E. Abele and D.L. Heitzman. 2002. *Biological Assessment of Flint Creek*. NYS Dept. of Environmental Conservation. Technical Report, 48 pages.
- Bode, R.W., M.A. Novak, L.E. Abele, D.L. Heitzman and Smith, A.J. 2000 - Present. *Biological Assessment Reports of Streams and Rivers of NYS (not listed separately)*. NYS Dept. of Environmental Conservation. Technical Reports.

RECENT PRESENTATIONS

- Spring 2007: *Developing Nutrient Criteria for Large Rivers in New York State* (poster). 31st Conference of the New England Association of Environmental Biologists, Mount Snow, VT.

Spring 2007: *Quality assurance invertebrate identification in a state monitoring program and the resolution of taxonomic disagreements* (poster). 31st Conference of the New England Association of Environmental Biologists, Mount Snow, VT.

Summer 2006: *Development of a Nutrient Biotic Index: for use with benthic macroinvertebrates* (oral presentation). Guest presenter at the 54th Annual Meeting of the North American Benthological Society, Anchorage AK, in the special session "Development of Indicators that Link Nutrient Enrichment to Biological Community Response."

Winter 2006: Establishing regional nutrient criteria for NYS Wadeable streams (poster). USEPA all states meeting on the status of nutrient criteria development, Dallas TX, by invitation.

Spring 2005: Development of Draft Recommendations for New York State Nutrient Criteria (Wadeable Streams and Rivers) (oral presentation). New England States Water Quality Standards Workgroup Meeting, Lowell, MA, and NYS DEC / EPA Water Quality Standards Workgroup Meeting, Albany, NY.

Spring 2005: Development of a Nutrient Biotic Index: for use with benthic macroinvertebrates (oral presentation). 29th Conference of the New England Association of Environmental Biologists, Lake George, NY.

AFFILIATIONS

North American Benthological Society—Member
Mohawk River Research Center—President of Board of Directors

COMPUTER SKILLS

MS Word, Excel, Powerpoint,
Access, and Publisher
Wordperfect
Visual FoxPro 7.0
Sigma Plot, Sigma Stat.
S-Plus statistical software

Primer 6 Multivariate Statistics
CANACO
ArcGIS 9.2
Homesite HTML Code Editor
Dream Weaver Web Designer
Delorme Street Atlas

REFERENCES

Margaret Novak
Section Chief
NYSDEC
Statewide Waters
Monitoring Section
625 Broadway
Albany, NY 12233
(518) 402-8287
manovak@gw.dec.state.n
y.us

Dr. Karen Riva-Murray
US Geological Survey
425 Jordan Road
Troy, NY 12180
(518) 285-5617
krmurray@usgs.gov

Dr. Gary Kleppel
Biological Sciences
Director, Biodiversity
Conservation and Policy
Program
University at Albany
1400 Washington
Avenue
Albany, NY 12222
(518) 442-4338
gkleppel@albany.edu

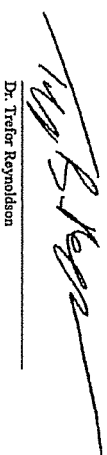
TAXONOMIC Certification

This certificate is awarded to

ALEXANDER J. SMITH

in recognition of the successful completion for
Level 2 Group 2 Eastern Ephemeroptera, Plecoptera & Trichoptera

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trefor Reynolds

March, 2006
Date

From: Trefor Reynoldson [mailto:trefor.reynoldson@acadiu.ca]

Sent: Monday, February 11, 2008 6:32 AM

To: Alexander Smith

Subject: RE: NABS Certification Exam

This email will confirm that Alexander Smith recently passed the NABS certification test for eastern chironomidae (Gp 3), with a score of 100%. A letter of confirmation and certificate have been sent and his name has been added to the list of certified taxonomists on the NABS web site

(
<http://www.nabstcp.com/NABSTCPHome/Certifiedtaxonomists/CertifiedtaxonomistsGp3/tabid/157/Default.aspx>)

Trefor B Reynoldson

Coordinator

NABS Taxonomic Certification Program
