

Watershed Assessment Associates

Environmental Services / Biomonitoring / Invertebrate Taxonomy / Professional Training

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

February 20, 2008

Dear Mr. Bowman:

We are pleased to submit the enclosed proposal (RFQ: DEP 13868) to provide taxonomy services to the West Virginia Department of Environmental Protection Division of Water and Waste Management.


In order to provide meaningful water quality information to the citizens of West Virginia and government agencies, the DEP-DWWM collects approximately 500 benthic macroinvertebrate samples yearly. It requires expert identification of these specimens for use in its water quality evaluations.

The DWWM is therefore seeking the services of professional macroinvertebrate taxonomists for specimen identification. It also requires a laboratory capable of processing large numbers of macroinvertebrates, and completion of the work within the Department's time constraints. If these requirements are satisfied, the DWWM will most effectively accomplish its water quality monitoring goals.

Watershed Assessment Associates (WAA) recommends that the DEP-DWWM entrust its taxonomy needs to the collaborative partnership of our firm with ABR, Inc. and Lotic, Inc. We are a group of highly skilled taxonomists with a reputation for attention to detail, meticulous documentation, reliability, and timeliness. Our work will facilitate DEP-DWWM's ability to produce valuable information on the water quality in West Virginia.

We are eager to work with DWWM on this project, and will provide the DWWM with the level of expertise and commitment necessary to successfully complete its biomonitoring work.

Sincerely,



Dr. Christine Murphy
Managing Partner, WAA

Enhancing West Virginia Water Quality Research through Expert Taxonomic Identification of Macroinvertebrate Specimens

Submitted in Response to RFQ: DEP 13868
February 20, 2008

Submitted to:

Mr. Chuck Bowman
**West Virginia Department of Environmental Protection
Office of Water Resources**

Prepared by:

Dr. Christine Murphy, Managing Partner
Watershed Assessment Associates

In partnership with:

Lotic, Inc., Environmental Consultants
and
ABR, Inc, Environmental Research and Services
(Massachusetts office)

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This document, including any attachments, is confidential and/or proprietary information. It is intended for the sole use of the West Virginia Department of Administration Purchasing Division and the West Virginia Department of Environmental Protection Division of Water and Waste Management in making its decision regarding the RFQ DEP13868. Any dissemination, distribution or copying of this information for any other purposes than stated herein is prohibited without the express written consent of the author.

Section I

**West Virginia Department of Administration Purchasing Division
Standardized Sheets**



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
 Watershed Assessment Associates, LLC
 28 Yates St.
 Schenectady NY 12305

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	FOB	FREIGHT TERMS
01/20/2008				

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

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
001	1	LS		493-09		
<p>WATER, WASTE WATER AND SOIL SAMPLE ANALYSIS</p> <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: 518-346-0225 DATE: 2/17/2008

FILE: Managing Partner FEIN: 20 8923885 ADDRESS CHANGES TO BE NOTED ABOVE



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

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2

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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

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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>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>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE TELEPHONE 518-346-0225 DATE 2/17/2008

TITLE Managing Partner PEIN 20 8923885 ADDRESS CHANGES TO BE NOTED ABOVE

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



State of West Virginia
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 Schenectady, NY 12305

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25304 **304-926-0499**

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01/20/2008				

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

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<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 518-346-0225	DATE 2/17/2008
TITLE Managing Partner	FEIN 20 8923885	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR' Page 4



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
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Request for Quotation

RFQ NUMBER:
DEP13868

PAGE:
5

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

**RFQ COPY
 TYPE NAME/ADDRESS HERE**

Watershed Assessment Associates, LLC
 28 Yates St.
 Schenectady, NY 12305

**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	FOB	FREIGHT TERMS
01/20/2008				

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

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
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AGENCY OR DEDUCTED FROM ANY UNPAID BALANCE ON THE CONTRACT OR PURCHASE ORDER.

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.

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.

BIDDER: Watershed Assessment Associates, LLC

DATE: 2/17/2008

SIGNED: *Christine Murphy*

TITLE: Managing Partner

* 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

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE 518-346-0225	DATE 2/17/2008
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TITLE Managing Partner	FEIN 20 8923885	ADDRESS CHANGES TO BE NOTED ABOVE
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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

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6

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

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Watershed Assessment Associates, LLC
 28 Yates St.
 Schenectady, NY 12305

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	FOB	FREIGHT TERMS
01/20/2008				

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

LINE	QUANTITY	UQP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<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: 518-346-0225</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS		
SIGNATURE 	TELEPHONE 518-346-0225	DATE 2/17/2008
TITLE Managing Partner	FEM 20 8923885	ADDRESS CHANGES TO BE NOTED ABOVE

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



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:
7

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

AUGUST

**RFQ COPY
 TYPE NAME/ADDRESS HERE**

Watershed Assessment Associates, LLC
 28 Yates St.
 Schenectady, NY 12305

SHIP TO

**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	FOB	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
CONTACT PERSON (PLEASE PRINT CLEARLY): J. Kelly Nolan						
***** THIS IS THE END OF RFQ DEP13868 ***** TOTAL:						\$88,450.00

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: TELEPHONE: 518-346-0225 DATE: 2/17/2008

FILE Managing Partner FEIN: 20 8923885 ADDRESS CHANGES TO BE NOTED ABOVE

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 exceed 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: Watershed Assessment Associates, LLC

Authorized Signature:  Date: 2/17/2008



State of West Virginia
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VENDOR

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 28 Yates Street
 Schenectady, NY 12305

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

DATE PRINTED 02/08/2008	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
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 *****						
001	1	LS		493-09		
WATER, WASTE WATER AND SOIL SAMPLE ANALYSIS						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: *[Signature]* TELEPHONE: 518-346-0225 DATE: 2/17/2008

Managing Partner FEIN: 20 8923885 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	\$155.00	\$77,500
B	50	Per sample pre-sorted, identified to genus level (necessary for quality assurance checks; 200 organism 200 organism subsample)	\$75.00	\$3,750
C	20	Per sample un-sorted, identified to genus level; entire sample.	\$200.00	\$4,000
D	20	Per sample pre-sorted, identified to genus level (necessary for quality control assurance checks); entire sample	\$125.00	\$2,500
E	4	Per each "sample pick-up/delivery" not "per sample" (assume 100 samples per pickup)	\$0.00	\$0.00
F	20 hr	Cost/hour for professional staff representation of data in legal/administrative setting	\$35.00	\$700.00

TOTAL =

\$88,450

Contractor: Watershed Assessment Associates, LLC

Signature: _____

Christine M. Gohy, Managing Partner

Date: February 17, 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.

Section II

Project Proposal to Perform Expert Taxonomy For the West Virginia Department of Environmental Protection

Executive Summary

Enhancing West Virginia Water Quality Research through Expert Taxonomic Identification of Macroinvertebrate Specimens

RFQ: DEP 13868

This section explains how Watershed Assessment Associates and its partners are uniquely qualified to support the West Virginia DEP DWWM, enabling you to continue achieving excellence in your water quality analyses.

The West Virginia Department of Environmental Protection, Division of Water and Waste Management, is charged with providing water quality information to the citizens of West Virginia and government agencies. As such, you are responsible for inspecting waterways and monitoring the quality of surface water, groundwater, and sediments. Because your interpretation of water quality data may result in legal action, you require exceptionally accurate identification of the approximately 500 benthic macroinvertebrate samples that you collect annually.

You are therefore seeking organism identification by experienced professional biologists, proficient in macroinvertebrate taxonomy, and willing to provide expert legal testimony. Essential to this work is a strict chain of custody and meticulous quality assurance. The taxonomy laboratory must also be capable of large scale macroinvertebrate processing and identification within the schedule prescribed by you. By satisfying these requirements, you will most effectively accomplish the DWWM water quality monitoring goals.

Utilizing the partnership of Watershed Assessment Associates, Lotic, Inc., and ABR, Inc. (Massachusetts office) will allow you to accomplish your taxonomy objectives. Our laboratories will provide you with excellence in scientific service, the highest standards of quality assurance, and dedicated professionals ready to fulfill your taxonomy requirements with a strong work ethic, care to detail, and timely completion of our responsibilities.

The advantages of using our services are distinct:

1. *Only* the NABS-certified taxonomists listed in this proposal will sort and identify the DWWM specimens. We understand the importance of the data that we are generating for you, and will not permit other personnel to perform the scientific services specified in this proposal. Our taxonomists are experienced, efficient, and have the specialized knowledge and expertise that DWWM seeks. Furthermore, no changes to the staff assigned to this project will occur without your written consent.

2. Watershed Assessment Associates, an eastern laboratory located in upstate New York, will serve as a central depository for all DWWM specimens. Each partnering laboratory is also located in the east, and all the taxonomists have extensive training and experience in eastern taxonomy. We have worked successfully with our partnering laboratories on other projects. Our laboratories are capable of sorting and identifying 3250 samples yearly.
3. Our taxonomists guarantee a strict chain of custody of all specimens. No specimen will be shipped *at any time*. All specimens will be delivered in person to each destination to assure proper handling and documentation.
4. We take pride in scientific integrity, and pay meticulous attention to procedure, documentation, and deadlines. We adhere to stringent laboratory operating procedures and QA/QC, with greater than 90% sorting efficiency and 95% taxonomic efficiency.
5. Our laboratories are equipped with the highest quality scientific instruments and computer programs.
6. As medium-sized laboratories, however, we have the desire and the ability to provide a level of commitment and service that other businesses reserve for their largest clients. We are prepared to respond fully to DWWM's needs and requirements in a professional, timely fashion. You will be pleased with our services.
7. We offer the highest quality work at a cost-effective price.

We are confident that you will be satisfied with our taxonomy services. We will provide you with an excellent scientific product and we will always do what is necessary to meet your continued expectations.

We look forward to facilitating the evaluation of West Virginia's water quality through our macroinvertebrate identification services. We are eager to work with the State of West Virginia Department of Environmental Protection Division of Water and Waste Management to help you to accomplish your biomonitoring goals.

Company Overviews

This section addresses the qualifications of Watershed Assessment Associates and its partners, ABR, Inc and Lotic, Inc., to fulfill macroinvertebrate analysis for DWWM. This section will familiarize DWWM with the laboratories that will be performing the critical task of accurate macroinvertebrate taxonomic identification of your specimens. Complete biologist resumes and references are located on page 23

Watershed Assessment Associates (WAA) is a female-owned environmental consulting and education firm located in Schenectady, NY. WAA has been providing stream biology and taxonomy services to state and county agencies, environmental organizations, institutions, and private consulting companies since 1998.

WAA's facility provides complete benthic macroinvertebrate taxonomy services and is equipped with Leica, Nikon, and Swift dissecting and compound microscopes, fiber optic lighting sources, all necessary equipment for benthic macroinvertebrate taxonomy, and an extensive library of appropriate aquatic keys and references.

WAA also provides environmental educational services to students, volunteers, environmental organizations, and environmental professionals. It runs a yearly applied research program for college students in stream biomonitoring and macroinvertebrate analysis. The company also offers regular professional training to taxonomists from agencies such as USGS and the US EPA, and educational workshops in biomonitoring, macroinvertebrate taxonomy, and related environmental topics.

The facility has conference space with up to date media technology for educational conferences and practical laboratory training.

Stream surveys and benthic macroinvertebrate taxonomy are performed by J. Kelly Nolan, senior aquatic biologist and North American Benthological Society certified taxonomist, and Matthew Lajoie, wetlands specialist and North American Benthological Society certified taxonomist. Mr. Nolan is the course coordinator and an instructor for the annual Aquatic Benthic Macroinvertebrate Identification Program at the New York State Department of Environmental Conservation Pack Demonstration Forest.

ABR, Inc. is an environmental research and services firm with offices in Massachusetts, Oregon, and Alaska. It has been performing biomonitoring, applied research and taxonomy for clients in the Northeast (including the Pennsylvania Department of Environmental Protection), Alaska and the Pacific Northwest for the past nine years. It offers expertise in a variety of ecological disciplines, including fisheries and wildlife surveys and research, biological assessment of surface waters, watershed assessment, environmental impact assessment, and ecological restoration.

ABR's expertise in macroinvertebrate analysis includes extensive experience in project study design and implementation, field sample collection, laboratory sample processing, sample identification, data analysis, reporting and publishing. ABR both processes and identifies samples collected by clients and provides full-service field research and assessments of macroinvertebrate communities at scales ranging from single stream reaches to sixth-field sub-basins. ABR has performed extensive macroinvertebrate taxonomic work for clients in government, private, non-profit, and academic sectors. ABR regularly processes and identifies specimens from large (greater than 100 samples) sets of macroinvertebrate samples.

East coast benthic macroinvertebrate analysis is performed in the Massachusetts laboratory by Dr. Michael Cole, North American Benthological Society certified taxonomist. Dr. Cole leads ABR's aquatic sciences program and specializes in assessing ecological conditions of rivers and streams. The Massachusetts laboratory is equipped with high quality Leica, Swift, and Wolfe compound microscopes, dissecting microscopes and stereomicroscopes with fiber-optic lighting, an extensive library of appropriate keys, and all equipment necessary for accurate macroinvertebrate analysis.

Lotic, Inc., an environmental consulting company located in Unity, Maine, is a leading firm in the field of macroinvertebrate taxonomy and ecology. As specialists in the identification of freshwater macro-invertebrates and the evaluation of benthic communities, it has provided taxonomy services for the USGS, power companies, paper mills, and other industrial facilities. Lotic has worked for the Connecticut Department of Environmental Protection, the Massachusetts Department of Environmental Protection, and the Department of Defense. Currently, Lotic is a contracted laboratory for the Maine Department of Environmental Protection, the Colorado Department of Public Health and Environment, and the New Hampshire Department of Environmental Services.

Macroinvertebrate identification will be provided by North American Benthological Society certified senior entomologist John Tipping. Mr. Tipping has over 10 years of experience identifying aquatic and terrestrial insects and macro-invertebrates. He is proficient in state and federal benthic sampling and analysis techniques. He is responsible performing complete biomonitoring assessments, from field evaluations, to using aquatic macro-invertebrates as indicators of ecological impairments. He oversees the quality control of all macroinvertebrate identifications at Lotic and maintains the Lotic reference collection.

Scope of Work

In this section we describe how Watershed Assessment Associates and its partners will acquire your sample specimens and perform macroinvertebrate identification to the exact specifications of the West Virginia DEP DWWM.

Watershed Assessment Associates and its partners acknowledge the utmost importance of maintaining chain of custody and quality control at all times during this project. Meticulous adherence to protocol and maintenance of quality control will be our priority during specimen collection from your office, preservation, transportation and identification of organisms.

Step I- Collection of samples from specified office

Watershed Assessment Associates will be the primary vendor contact for the extent of this contract and will assume responsibility for picking up/returning specimens and overseeing a strict chain of custody.

Specimens collected by DWWM personnel using a net apparatus will be stored in 1 gallon containers. Watershed Assessment Associates will expect to schedule approximately 4-5 specimen pick-ups throughout the year (with flexibility regarding exact number of pick-ups), transport the specimens to our laboratory, and maintain a precise chain of custody for the specimens identified at our partnering taxonomists' laboratories.

Upon receipt, samples will be checked against the chain of custody, recorded in the sample log book, and assigned a unique sample tracking number. Any discrepancies in sample information will be noted and DWWM will be contacted by phone or electronically regarding such discrepancies. All field samples will also be checked for proper preservation and re-preserved in 80% ethanol if found to be less than adequately preserved. Any vials received leaking or broken will be replaced, and noted in the sample log book. A copy of the chain of custody will be retained by Watershed Assessment Associates.

Watershed Assessment Associates will maintain a record of the identification results for 5 years.

Step II-Conduct specified analysis on samples in a timely and professional manner

Sorting Benthic Macroinvertebrate Samples

Watershed Assessment Associates and its partners recognize the significance of appropriate and accurate sorting of macroinvertebrates from benthic survey samples in

order to generate accurate, meaningful study data and conclusions. Because of this, only the certified taxonomists listed in this proposal will sort the DEP-DWWM specimens.

We will not use sorting technicians at any time during this contract. We feel strongly that using experienced, certified taxonomists during the sorting process will provide added value to the DWWM study results.

Our taxonomists are fully knowledgeable of M.T. Barbour et al.'s "Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish," and routinely use these protocols for stream bioassessments. Macroinvertebrate specimens will be processed by the taxonomists listed in this proposal using the DWWM Attachment A protocols derived from this publication with the following exception:

- Bottle labels are generated by computer on 28 pound stock paper. The improved legibility of these labels enhances quality assurance. The only handwritten parts of the label are the initials of the sample processor, the number of grids sorted, and the number of organisms in the final sample. These are recorded in pencil. (See sample label, page 43).

Subsamples of 200 aquatic macroinvertebrates will be prepared for all samples collected by placing the entire sample in a sieve box divided into a grid of 100 1 inch by 1 inch squares. Any vertebrates discovered during sub-sampling will be retained with the sample, but not identified. Specimens will be stored in 4 dram lip vials made of borosilicate that has been annealed in retempering ovens to eliminate internal strains, and sealed with neoprene stoppers.

Watershed Assessment Associates recognizes that occasionally an entire sample will need to be sorted and identified, and whole-sample processing will be performed at those times.

As part of a thorough QA/QC process, we will examine sorting efficiency for 10% of all submitted samples, and follow a robust QA/QC process, as described in the QA/QC section below.

Identification of Benthic Macroinvertebrate Samples

The benthic macroinvertebrate samples will be identified in accordance with procedures outlined in Attachment B, "Standard Operating Procedures for Identifying Macroinvertebrate Samples" with the following exception:

- The number of organisms in each taxon is entered directly into an electronic database, dispensing with the need for handwritten bench sheets. (See sample bench sheet, page 44). Bench sheets for each sample are printed and retained in a binder after sorting and macroinvertebrate identification.

Only the NABs-certified taxonomists listed in this proposal will identify specimens.

Watershed Assessment Associates has included a complete bibliography of publications used by our taxonomists for the identification of specimens (page 46 of this proposal). Our laboratories currently have, and use, most of the references listed in the attached operating procedure.

- All insects (including Diptera), crayfish, snails and clams will be identified to the genus level.
- **All chironomid larvae will be identified to genus by taxonomists listed in this proposal with NABS certification in Chironomidae.**
- Nemertea, Oligochaeta, Nematoda, Hydroida, Turbellaria, Bryozoa and Hirudinea will be identified to phylum/ class/ order. Mature specimens may be identified to a lower level, if possible.
- Vertebrates and terrestrial organisms will not be identified.

As part of a thorough QA/QC process, Watershed Assessment Associates will re-identify 10% of all submitted samples as described in the QA/QC section below. WAA will also establish reference collections and retain all voucher specimens for this project.

Watershed Assessment Associates will submit macroinvertebrate identification results and QA/QC for sorting and identification in Microsoft Excel and/or Access compatible format. Printed copies of the bench sheet will also be submitted to DWWM. Results for samples submitted by April 1 will be provided on or before August 31. Results for samples submitted by August 31 will be provided on or before December 1. Results for samples submitted by December 31 will be provided on or before February 28.

We will also maintain preservation of the samples and will return all sample jars, voucher specimens and reference collections to the DWWM. The reference collection will be returned when the contract is complete. We will properly dispose of all unused sample residues.

Step III-Quality Assurance/Quality Control

Quality assurance and quality control is of paramount importance to our work. Rigorous QA/QC measures are followed by all of our taxonomists, including the following:

Sorting QA/QC

- The certified taxonomists listed in this proposal will sort all the DWWM specimens to ensure the highest sorting efficacy.
- 10% of the specimens from each taxonomist are resorted to ensure a 90% sorting efficacy.
- If less than 90% sorting efficacy is discovered, the sample is resorted. The sample then undergoes a *second* quality assurance re-evaluation.

- A sorting quality assurance form is prepared for each resorted sample, and a quality assurance report is issued upon completion of all sorting. The quality assurance report will be submitted to DWWM annually and upon request.

Identification QA/QC

- 10% of each taxonomist's samples will be randomly selected for re-identification by a second taxonomist listed in this proposal.
 - If taxonomic agreement (as determined by the Bray-Curtis Index of Similarity) is less than 95%, the taxonomists will discuss the differences, identify and document where the discrepancy occurred, and take corrective action.
 - A reconciliation report will be prepared and submitted to the DEP/DWWM annually and upon request.
 - We maintain professional contacts with numerous research taxonomists and systematists for taxonomic verification of unusual or rare specimens. Any uncertain or unusual taxa will be sent to one or more of these experts for verification. All samples subject to outside verification will be recorded in the QA/QC report.
-
- After data entry is completed, one of the taxonomists will check 25% of the completed data sheets against the original bench sheets. If no errors are found, the check is complete. If any errors are found, then all data sheets are checked against the database and all errors are rectified. Any necessary corrections are recorded in the QA/QC report.
-
- A genus level reference collection established by one of the proposal's taxonomists will be verified by another of the proposal's taxonomists to assure accuracy of the identified taxa.
 - Genus level reference and voucher collections compiled for this project will be submitted to DEP/DWWM annually and upon request.
 - With the exception of organisms used in the reference collection, all specimens identified in the 200 organism sub-samples will be returned to the DEP/DWWM. Slide mounted specimens will exhibit the same identification information as the voucher collection specimens. Except when the presence of large organisms necessitates the use of additional vials, all specimens will be stored in single sample vials.
-
- If any significant changes in taxonomy occur during the life of this contract, the vendor shall notify DWWM and provide supporting references.
 - We will anticipate that DEP biologists and/or another contract laboratory will verify identifications for a minimum of 2.5% of the samples, selected randomly from all proposal taxonomists.

Step IV- Legal Testimony

The taxonomists completing the work for this project will be prepared to legally testify, if necessary, to the time of notification by the DEP/DWWM of sample shipment, condition of the sample, how the sample was preserved by the firm, dates of analysis and by whom, chain of custody procedures within the laboratory, methods used, and results of analysis.

The taxonomists will not be required to respond to, nor will they respond to, questions concerning the interpretation of results.

Subcontractors

Watershed Assessment Associates will be the sole point of contact regarding authorized work under the contract, but our partners, ABR and Lotic, will be available to communicate with the WV DEP-DWWM whenever it chooses to do so.

Watershed Assessment Associates will be solely responsible for the satisfactory completion of the work. We will ensure that all biologists performing taxonomic identification for this project are North American Benthological Society certified for genus level EPT (eastern) and Chironomidae (eastern), have experience in performing this type of identification, and carry appropriate insurance.

Included in this proposal are the resumes of each biologist from Watershed Assessment Associates, ABR, and Lotic who will be performing macroinvertebrate sorting and identification. No changes to the assigned staff will occur without written consent from the West Virginia DEP WMMW.

Confidentiality

Any and all data, analyses, materials, reports and other oral/written information prepared by Watershed Assessment Associates and its partners with respect to this requisition shall, except for information that has been made publicly available, be treated as confidential and shall not be utilized, released, published, or disclosed, by WAA or its partners at any time for any purpose whatsoever other than to provide consultation or other service to the DWWM.

Compliance Matrix

In this section we illustrate graphically the extent to which our proposal meets the WV DEP-DWWM requirements. Detailed explanations for each requirement can be found on the indicated pages. Areas that fully comply or exceed the WV DEP-DWWM are indicated in shades of yellow.

Compliance Key:

EX = Exceeds the requirement

F = Fully complies

P = Partially complies

N = Noncompliant

EXTENT OF COMPLIANCE	EX	F	P	N	PAGE	COMMENTS
Degreed staff biologists who are dedicated taxonomists will perform the identifications.		x			23	
Taxonomists will be NABS certified in EPT (eastern) & chironomidae (eastern).		x			36	
Taxonomists will provide expert legal testimony, if requested.		x			19	
Completed results must be delivered to DWWM on prescribed schedule.		x			17	
Macroinvertebrate identification will be submitted in Excel or Access format.		x			17	
Copies of bench sheets will be submitted with results.		x			17	
All organisms identified (except reference collection) will be returned with results.		x			17	
Reference collection will be returned when the contract is complete.		x			17	
QA/QC associated with sorting and identifying samples will be submitted with results.		x			18	
Laboratory is capable of large-scale macroinvertebrate processing & identification.		x			12	
Vendor will provide pick up and delivery services.		x			15	
Vendor will maintain a strict chain of custody.		x			15	
Vendor will maintain preservation of the samples.		x			15	
Vendor will maintain records of the results of identification for 5 years.		x			15	
Samples will be processed in accordance with procedures in Attachment A.	x				16	Labels are computer generated for improved legibility/accuracy.
Vendor will use competent sorters to maintain quality control.	x				16	Only the certified taxonomists will sort the specimens.

Continued on next page

Compliance Key:

EX = Exceeds the requirement

F = Fully complies

P = Partially complies

N = Noncompliant

EXTENT OF COMPLIANCE CONTINUED						
QUESTION	EX	F	P	N	PAGE	COMMENTS
Specimens will be stored in archival quality containers.		x			16	
Vendor will examine sorting efficiency for 5% of all samples.	x				16	Vendor will examine sorting efficiency for 10% of the specimens.
Samples will be identified in accordance with procedures in Attachment B.	x				16	Data will be entered directly into a computerized bench sheet.
All reference keys will be current and up to date.		x			17	
Vendor will include a bibliography of publications used with submission of results.		x			46	
All aquatic insects, including chironomid larvae, will be identified to genus.		x			17	
Vendor will re-identify 5% of all submitted samples for QA/QC.	x				18	Vendor will re-identify 10% of the submitted specimens.
Vendor will establish reference collections & retain all voucher specimens.		x			18	
Vendor will return sample jars, voucher specimens, reference collections to DWWW.		x			17	
Vendor will properly dispose of unused sample residues.		x			17	

**Resumes and North American Benthological Society
Certificates of
Scientific Personnel**

In this section we have included both the resumes and copies of the NABs certifications of the taxonomists who will perform the macroinvertebrate identification for this proposal. These scientists are degreed biologists who are dedicated taxonomists. Only taxonomists with Chironomidae certification will perform identification of these macroinvertebrates.

Watershed Assessment Associates

28 Yates Street
Schenectady, NY 12305
518-346-0225

J. Kelly Nolan

Aquatic Biologist and Taxonomist

Cell: 518-346-1758

E-mail: jkn@rwaa.us

Expertise

- Stream biomonitoring and benthic macroinvertebrate taxonomy
- Professional development programs in stream biomonitoring and benthic macroinvertebrate taxonomy

Education

B.A., Biology, 2005. State University at Albany, Albany, New York.

A.A.S., 1986. Adirondack Community College, Glens Falls, NY.

B.A., 1983. Mississippi College, Clinton MS.

Profile

J. Kelly Nolan, president of Watershed Assessment Associates, is a NABS certified Level II EPT and chironomid taxonomist with 9 years of experience identifying aquatic macroinvertebrates. Mr. Nolan is currently monitoring lotic habitats for clients using aquatic macroinvertebrates as indicators of ecological impairments and oversees the quality control of all macroinvertebrate identification for WAA. He is the course coordinator and a senior instructor for the annual *Aquatic Benthic Macroinvertebrate Identification Program* at the New York State Department of Environmental Conservation Pack Demonstration Forest and is the lead instructor for *Lotic Scene Investigation*[™], an applied research program for undergraduate students.

Mr. Nolan also has also served as a Regional Coordinator for Hudson Basin River Watch since 1998. He is the monitoring coordinator for the Hoosic River Watershed Association and the River Watch coordinator for the Battenkill Conservancy.

Training

Advanced Identification Workshop on Baetidae and Hydropsychidae 3/07

PRIMER-E multivariate statistics for ecologist workshop 3/07

Chironomidae Taxonomy Workshop 5/06

Advanced Midge Taxonomy Workshop 3/05

Macroinvertebrate Laboratory Quality Assurance Workshop 3/05
EPT taxa workshop Humboldt Field Research Institute 5/03
River Network Clean Water Act workshop 9/99
Hach Technical Training Applied Analytical Chemistry workshop 6/00

Certification

North American Benthological Society (NABS) Level 2 Group 2 certified taxonomist
North American Benthological Society (NABS) Chironomidae certified taxonomist

Memberships

North American Benthological Society
Association for the Protection of the Adirondacks
Black Rock Forest
Freshwaters Illustrated
Leadership Schenectady

Performance References

1. Hudson River BASF Rensselaer Site Albany and Rensselaer County, NY Application of Biological Impairment Criteria to Resident Benthic Macroinvertebrates

Work Reference: John Bleiler
ENSR Inc.
2 Technology Park Drive
Westford, MA 01886
978-589-3056
jbleiler@ensr.com

Client: ENSR INC.

Dates: November 2005 – May 2006

Description: Ponar sample analysis was completed on resident benthic macroinvertebrate communities collected upstream from the test site to resident benthic macroinvertebrate communities collected adjacent to or downstream from the test site to determine if significant biological impairment had occurred. Taxonomy was conducted to the lowest practical level (genus/species), including Chironomidae and Oligochaete.

2. Orange County Water Authority Water Quality Biomonitoring Project

Work Reference: Simon Gruber
Project Consultant
PO Box 202
Cornwall NY 12518
Phone: 845-534-5622
E-mail: sgruber100@verizon.net

Client: Orange County Water Authority

Dates: August 2004 to present

Description: Physical site analysis, photographic site documentation, chemical analysis, and benthic macroinvertebrate identification of over 200 selected wadeable stream riffle habitats following New York State DEC protocols and analysis to provide baseline and water quality trend assessments. Taxonomy was conducted to genus/species, including Chironomidae, necessary to calculate Impact Source Determination (ISD).

3. Rockland County, New York Lotic Scene Investigation (LSI) Stream Biomonitoring Water Quality Project

Work Reference: Mary Hegarty
Environmental Management Assistant
Rockland County Division of Environmental Resources
50 Sanatorium Rd. Bldg. P, Pomona, NY 10970
845-364-2669
(fax) 845-364-2671
hegartym@co.rockland.ny.us

Client: Rockland County Division of Environmental Resources

Dates: June 2006 to present

Description: Physical site analysis, photographic site documentation, chemical analysis, and benthic macroinvertebrate identification of twenty selected wadeable stream riffle habitats following New York State DEC protocols and analysis to provide baseline and water quality trend assessments. Taxonomy was conducted to genus, including Chironomidae.

Watershed Assessment Associates, LLC

28 Yates Street
Schenectady, NY 12305
518-346-0225

Matthew P. Lajoie

Aquatic Biologist and Taxonomist

Cell phone: 603-731-9688

E-mail: mlajoie@comcast.net

Expertise

- Stream biomonitoring and benthic macroinvertebrate taxonomy
- Wetland delineation
- Soils and wetland vegetation
- Vernal pool assessment
- GIS mapping and analysis

Education

Matthew P. Lajoie has a **Bachelor's Degree in Environmental Studies, Ecology**, 2005, from Bates College, Lewiston, ME.

Profile

Mr. Lajoie is an Aquatic Biologist with Watershed Assessment Associates and a NABS Certified Level II EPT taxonomist with 4 years of experience identifying aquatic macroinvertebrates. He also has significant experience in fish collection and identification, stream characterization, and habitat assessment, as well as in wetland delineation, soils descriptions, vernal pool studies, stormwater monitoring, GPS data collection, and GIS analysis. Mr. Lajoie previously worked as a private consultant in New Hampshire, specializing in biological assessment and water quality. He also worked in the NHDES Biomonitoring Program, performing biological assessments of wadeable streams throughout New Hampshire. While involved with the NHDES, Mr. Lajoie established a pilot program for volunteer biomonitoring which has since expanded and performs annual monitoring efforts in several of the State's major drainages. Currently, Mr. Lajoie is an instructor for Lotic Scene Investigation™, an applied research program for undergraduate students. He is also currently monitoring lotic habitats for clients using aquatic macroinvertebrates as indicators of ecological impairment.

Training

Aquatic Macroinvertebrate Identification Program, Hudson Basin River Watch, 2006,
2007

Upper Merrimack Monitoring Program, Benthic Macroinvertebrate Identification, 2007

NHDES Volunteer River Assessment Program, Hodgson Brook, 2007
New England Association of Environmental Biologists 31st Annual Conference, Mount
Snow, Vermont, 2007
Manchester Urban Ponds Restoration Program, 2007
Wetland Mitigation -Regulations, Design, Construction, and Monitoring Workshop, 2007
Vermont Transit Wildlife Training Workshop, 2006
Stream Bioassessment Institute, Hudson Basin River Watch, 2006
Environmental Impacts of Roads and Highways Workshop, 2005
NH Association of Natural Resource Scientists Hydric Soils Workshop, 2005

Certification

North American Benthological Society (NABS) Level 2 Group 2 certified taxonomist

Memberships

North American Benthological Society
New Hampshire Association of Natural Resource Scientists
Trout Unlimited, Merrimack River Valley Chapter

Performance References

1. Orange County Water Authority Water Quality Biomonitoring Project

Work Reference: Simon Gruber
Project Consultant
PO Box 202
Cornwall NY 12518
Phone: 845-534-5622
E-mail: sgruber100@verizon.net

Client: Orange County Water Authority

Dates: 2007

Description: Physical site analysis, photographic site documentation, chemical analysis, and benthic macroinvertebrate identification at selected wadeable stream riffle habitats following New York State DEC protocols and analysis to provide baseline and water quality trend assessments.

2. Lotic Scene Investigation (LSI) Stream Biomonitoring Water Quality Project, Exeter River (Chester), Little River (Kingston), Little River (Exeter), Fordway Brook (Raymond)

Work Reference: David Neils
Biomonitoring Program Coordinator
NH Department of Environmental Services
29 Hazen Drive, Concord, NH 03302-0095
603-271-8865
dneils@des.state.nh.us

Client: NH Department of Environmental Services

Dates: 2007

Description: Physical site analysis, photographic site documentation, chemical analysis, and benthic macroinvertebrate identification of four selected wadeable stream riffle habitats following New Hampshire State DES protocols and analysis to provide baseline and water quality trend assessments. Taxonomy was conducted to genus.

3. Colorado Department of Public Health and Environment: Taxonomic Services

Work Reference: Colorado Department of Public Health and Environment
Water Quality Control Division
4300 Cherry Creek Drive South
Denver, CO 80246-1530
Phone: 303-692-3500

Client: CDPHE Water Quality Control Division

Dates: 2007

Description: Sub-sampling and identification of benthic macroinvertebrates to lowest possible taxonomic level (genus/species).

ABR, Inc.—Environmental Research & Services
15 Bank Row, Suite B
Greenfield, MA 01301
ABR DUNS# 03-852-3239

phone: (413) 774-5515
cell: (503) 939-7428
mcole@abrinc.com

MICHAEL B. COLE, Ph.D.
Senior Aquatic Scientist & Taxonomist

EXPERTISE

- Macroinvertebrate taxonomy and bioassessment
(NABS-certified taxonomist for level 2 east and west EPT & Chironomidae taxonomic groups (4 certifications))
- Freshwater ecology, stream ecology
- Effects of disturbance on aquatic ecosystems
- Statistics, experimental design

EDUCATION

Ph.D., Fisheries and Wildlife Science, Dec. 1998. The Pennsylvania State University, University Park, Pennsylvania.

M.S., Zoology, 1994. University of Maine, Orono, Maine.

B.A., Environmental Studies, 1992. Rollins College, Winter Park, Florida.

PROFESSIONAL PROFILE

1999 – pres ABR, INC.—Environmental Research & Services (formerly Alaska Biological Research), Greenfield, MA satellite office
Senior Aquatic Scientist & Program Leader

I currently direct ABR's Fisheries and Aquatic Sciences Program (Northeast US, Northwest US, and Alaska), manage our NE satellite office, manage our aquatic macroinvertebrate laboratories, and perform macroinvertebrate identification work. Responsibilities include program development, proposal writing, personnel and project management, and conducting research and other services for the management and restoration of freshwater resources.

RECENT RELEVANT PROJECT EXPERIENCE

*Biomonitoring & Bioassessment with Macroinvertebrates**

**ABR staff is performing or has performed all macroinvertebrate identification work for all listed projects.*

PA DEP Taxonomic Services

Lead taxonomist on a one-year contract (renewable for up to two additional years) to provide sample processing and taxonomic services to the PA Department of Environmental Protection.

Deerfield River Hydropeaking Impacts Study, Massachusetts

Currently leading a study that will examine the impacts of hydropeaking activities on the macroinvertebrate communities of the Deerfield River for the Deerfield River Watershed Association. The study is funded, in part, by the MA Executive Office of Environmental Affairs.

Fenton River Macroinvertebrate Recolonization Study, Connecticut

ABR is currently contracted by the University of Connecticut to perform a four-year study of recolonization by macroinvertebrates of the Fenton River following drying of the river during the summer 2005 drought.

Four Mile Brook Watershed Assessment, Massachusetts

Technical lead for benthic investigations for a watershed assessment of Four Mile Brook in Franklin County, Massachusetts for the Franklin Regional Coalition of Governments.

2005 Millers River Macroinvertebrate Assessment, Massachusetts

Led an investigation of macroinvertebrate communities throughout the Millers River in western Massachusetts to determine the level of biological impairment to the river relative to that measured during the last assessment conducted in 2000.

2004-2005 Green River Watershed Macroinvertebrate Assessments, Massachusetts

Performed a study to investigate the condition of macroinvertebrate communities throughout the Green River to determine the level of biological impairment to the river with an emphasis on effects of land use activities around the town of Greenfield.

Blackstone River Watershed 2004 Macroinvertebrate Assessment, Massachusetts

Performed a study to investigate the condition of macroinvertebrate communities throughout the Blackstone River watershed from the headwaters in and around the city of Worcester, MA to the lower reaches in and near the city of Woonsocket, RI.

Biological Investigations of Cascade Range Forested Headwater Streams Co-Principal investigator of field research in the Oregon Cascade mountain range to examine relationships between macroinvertebrate community conditions, stream habitat conditions, and adjacent riparian forest conditions.

RELEVANT TRAINING

- 2006 **Gastropod Taxonomy Workshop**, 10th Annual NW Taxonomic Workshop, Missoula, MT.
- 2005 **Mayfly Taxonomy Workshop**, 9th Annual NW Taxonomic Workshop
- 2005 **Macroinvertebrate Laboratory Quality Assurance Workshop**, Hosted by the New England Association of Environmental Biologists
- 2005 **Advanced Midge Taxonomy Workshop**, Hosted by the New England Association of Environmental Biologists
- 2004 **Stonefly and Freshwater Crustacea Taxonomy Workshop**, 8th Annual NW Taxonomic Workshop
- 2002 **Worms and Mollusks Taxonomic Workshop**, 6th Annual NW Taxonomic Workshop

PERFORMANCE REFERENCES

1. Fenton River Macroinvertebrate Re-colonization Study

Work Reference: Richard Miller, Esq.
University of Connecticut, Office of Environmental Policy
Storrs, CT
860-486-8741
rich.miller@uconn.edu

Client: University of Connecticut

Dates: April 2006 to present

Description: ABR is currently contracted by the University of Connecticut to perform a four-year study of re-colonization by macroinvertebrates of the Fenton River following drying of the river during the summer 2005 drought. ABR processed more than 200 benthic samples using modified EPA-RBP protocols (500-organism counts). All aquatic

insect taxonomy was taken to the lowest practical level (genus/species), including Chironomidae.

2. Deerfield River Hydropeaking Study

Work Reference: Marie-Francoise Walk
President – Deerfield River Watershed Association
413-545-2842
mf.walk@verizon.net

Client: Deerfield River Watershed Association

Dates: April 2006 to present

Description: ABR is currently performing an assessment of daily hydropeaking activities on the benthic communities in the Deerfield River, Massachusetts. Sample sorting methods include a 300-count modified RPB subsample and identification of aquatic insects to genus/species (including Chironomidae) from nearly 50 samples.

3. King County, WA Macroinvertebrate Taxonomic Services

Work Reference: Fritz Grothkopp
King County Department of Metro Services, Water Quality Lab,
Seattle, WA
206-684-2300 (lab front desk)
Fritz.Grothkopp@METROKC.GOV

Client: King County, WA

Dates: October 2004 to present

Description: Since 2004, ABR has been providing sample processing and identification services to King County, WA. ABR receives and processes nearly 300 samples each year from King County. Samples are processed using a 500-count modified EPA RBP protocol and identified to standard levels of resolution for NW samples. Data are analyzed by ABR using a B-IBI developed for use with Puget Sound Lowland Streams.

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2 Newell Court
Unity Me 04988

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lotic@uninets.net

John Tipping
Senior Entomologist

Expertise

- Field collection of macroinvertebrates, using dip nets, grabs, artificial substrates and aerial sweeps and light traps for adults. On site habitat characterization.
- Familiarity with state collection and analysis protocols for Maine, New Hampshire, Vermont, Massachusetts, Connecticut and New York, as well as Federal EPA and USGS protocols.
- Identification of all major groups of aquatic macroinvertebrates in all life stages. Experience in collection and identification of terrestrial insects. Specializes in Chironomidae. (NABS certified, level II Group II)
- Water quality assessments using published metrics. Development of new water quality metrics.
- Field collection and identification of all groups of benthic marine macroinvertebrates.
- Marine benthic habitat assessment using macroinvertebrates.

Education

B.S. Biology, Chemistry minor, 1993. Indiana University of Pennsylvania, Indiana, PA.

Graduate course work, Department of Entomology, 1994-1996. Ohio State University, Columbus, OH. Conducted macroinvertebrate surveys of the Ohio River with an emphasis on the Chironomidae.

Profile

John Tipping is a NABS Certified Level II EPT taxonomist with more than 10 years of experience identifying aquatic and terrestrial insects and macroinvertebrates. He is currently responsible for providing ecological assessments by monitoring rivers and streams using aquatic macroinvertebrates as indicators of ecological impairments. He has received specialized training in the identification of many macroinvertebrates, including Chironomidae and rare and endangered freshwater mussels. Mr. Tipping oversees the quality control of all macroinvertebrate identifications, which includes sending specimens out for verification and maintaining the Lotic reference collection. In addition to laboratory operations, Mr. Tipping is also involved in the field aspects of these

evaluations, and is proficient with both state and federal benthic sampling and analysis techniques.

While at Lotic, Mr. Tipping has performed water quality evaluations for a variety of clients, including the federal government (USGS, EPA), state governments, municipalities and industries. These evaluations have been performed for a wide range of purposes, including hazardous waste investigations, military base closures, the assessment of gross organic enrichment, point and nonpoint sources of pollution, and the assessment of dam effects in association with the relicensing of hydroelectric facilities. Mr. Tipping also conducts informational seminars on water quality evaluations and aquatic insects for students and community groups.

Relevant Training

2007- Baetidae and Hydropsychidae taxonomy workshop, Meeting of the New England Association of Environmental Biologists

2005 – Informal Workshop on the taxonomy of marine macroinvertebrates, Bigelow Laboratories, Boothbay Harbor, ME.

2002 – Workshop on Statistical Analysis of Environmental Science Data, regional meeting of the Society of Environmental Toxicology and Chemistry, Portland, ME.

1998 – Workshop on the taxonomy of rare and endangered freshwater mussels, Meeting of the New England Association of Environmental Biologists

Affiliations

North American Benthological Society
New England Association of Environmental Biologists
Maine Entomological Society

Certifications

NABS Level II East EPT and Chironomidae

Lotic Inc. Performance References

1. New Hampshire Department of Environmental Services Macroinvertebrate Identifications.

Work Reference: Mr. David Neils
State of New Hampshire
Department of Environmental Services
PO Box 95

29 Hazen Drive
Concord, NH 03302-0095
603-271-2457

Dates: 2006-2010

Description: Lotic Inc. is in the first year of a five year contract to provide macroinvertebrate identifications for the NHDES monitoring program. The first year of work required sub sampling and identification of 120 samples.

2. Connecticut Department of Environmental Protection Macroinvertebrate Identification.

Work Reference: Mr. Guy Hoffman
State of Connecticut
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106
860-424-3733

Date: 2005

Description: Lotic Inc. provided macroinvertebrate identification services for CT DEP's Bureau of water management. 100 samples (including QA/QC samples) were identified and enumerated, and the results sent to CTDEP in Microsoft Excel format. Identifications were to genus, species when possible and a voucher collection of all taxa was created.

3. Maine Department of Environmental Protection Macroinvertebrate Identification.

Work Reference: Mr. Leon Tsomides
Maine Department of Environmental Protection
Maine Station #17
Augusta, Maine 04333
207-287-7844

Dates: 1995-Present

Description: Lotic, Inc. provides macroinvertebrate identification services for MeDEP's water quality monitoring program. This is done according to MeDEP protocols for sub sampling and analyzing artificial substrate (rock basket) samples. Lotic, Inc. processes approximately 100 samples per year. Results are reported in Microsoft Excel format, and identifications are to genus, species when possible.

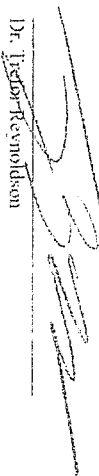
TAXONOMIC Certification

This certificate is awarded to

J. KELLY NOLAN

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

NORTH AMERICAN BENTHOLOGICAL SOCIETY


Dr. Jedd Reynolds

May, 2006
Date

TAXONOMIC CERTIFICATION

This certificate is awarded to

KELLY NOLAN

in recognition of the successful completion for

LEVEL 2 GROUP 3 EASTERN CHIRONOMIDAE

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trevor Reynolds

February, 2008

Date

TAXONOMIC CERTIFICATION

This certificate is awarded to

MATTHEW LAJOIE

in recognition of the successful completion for

LEVEL 2 GROUP 2 EASTERN EPHEMEROPTERA, PLECOPTERA and TRICHOPTERA

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trevor Reynolds

Sept. 1, 2007
Date

TAXONOMIC CERTIFICATION

This certificate is awarded to

MIKE COLE

in recognition of the successful completion for

LEVEL 2 GROUP 3 EASTERN CHIRONOMIDAE

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trevor Reynoldson

February 2008

Date

TAXONOMIC CERTIFICATION

This certificate is awarded to

MICHAEL B. COLE

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

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trefer Reynolds

June, 2006

Date

TAXONOMIC CERTIFICATION

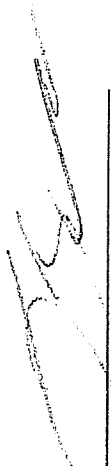
This certificate is awarded to

JOHN TIPPING

in recognition of the successful completion for

LEVEL 2 GROUP 2 EASTERN EPHEMEROPTERA, PLECOPTERA, and TRICHOPTERA

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trevor Reynolds

April, 2007
Date

TAXONOMIC CERTIFICATION

This certificate is awarded to

JOHN TIPPING

in recognition of the successful completion for

LEVEL 2 GROUP 3 EASTERN CHIRONOMIDAE

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trevor Reynolds

February, 2008

Date

Sample labels and bench sheets

In this section we have included copies of the computerized specimen labels and bench sheets that we use. Each uses a unique sample tracking number. The only sections of the label that are completed by hand (in pencil) are the initials of the sample processor, the number of grids sorted, and the number of organisms in the final sample.

Both external and internal labels will be used.

Stream Name: _____	
Project identifier: _____	Sample ID #: _____
Sample Date: _____	County/State: _____
Collector initials: _____	Taxonomist initials: _____
# grids sorted: _____	Total # of organisms: _____
WAA sample # _____	

Chiro. Larvae - (L)	0			
Pupae - (A)	0			
Other Insecta - (O)	0			
Mollusca - (S)	0			
Crustacea - (K)	0			
Nemertea - (N)	0			
Platyhelminthes - (F)	0			
Oligochaeta - (W)	0			
Hirudinea - (H)	0			

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