



# Benthic Macroinvertebrate Services



West Virginia  
Department of Environmental Protection  
Division of Water and Waste Management  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

RFQ Response Date: June 22, 2011

RECEIVED

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WASTE DIVISION  
STATE OF WV



**THIRD ROCK**  
CONSULTANTS

2526 Regency Road, Suite 180  
Lexington, Kentucky 40503

Ph: (859) 977-2000

Fax: (859) 977-2001

[www.thirdrockconsultants.com](http://www.thirdrockconsultants.com)



June 22, 2011

West Virginia Department of Administration  
Purchasing Division  
ATTN: Chuck Bowman  
Building 15  
2019 Washington Street, East  
Charleston, WV 25305-0130

Re: *RFQ # DEP15456*  
West Virginia Department of Environmental Protection  
Division of Water and Waste Management  
Benthic Macroinvertebrate Services

Dear Mr. Bowman:

On behalf of Third Rock Consultants, LLC (Third Rock) I am pleased to submit a proposal to conduct the above-referenced scope-of-work for the West Virginia Department of Environmental Protection's Division of Water and Waste Management.

I have attached your Request For Quotation Forms, Bid Sheet and Purchasing Affidavit for consideration. Associated information, requested in your bid request, can be found in the enclosed proposal.

I am confident that Third Rock can continue to provide the highest quality taxonomic services available and complete required services in a professional and timely manner, as we have done for the past several years.

I trust that you will find this proposal satisfactory. If you have any questions please feel free to contact me.

I look forward to hearing back from you, at your earliest convenience, regarding this contract award.

Sincerely,

Marcia L. Wooton  
Environmental Planner  
[mwooton@thirdrockconsultants.com](mailto:mwooton@thirdrockconsultants.com)

Attachments (4)  
Enclosure (1)



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  
 DEP15456

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

**VENDOR**  
 \*324095528 859-977-2000  
 THIRD ROCK CONSULTANTS LLC  
 2526 REGENCY ROAD #180  
 LEXINGTON KY 40503

**SHIP TO**  
 ENVIRONMENTAL PROTECTION,  
 DEPARTMENT OF  
 DIV OF WATER AND WASTE MGT  
 601 57TH STREET SE  
 CHARLESTON, WV  
 25304 304-926-0499

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
05/26/2011				

BID OPENING DATE: 06/23/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		961-48		
<p>FIELD TESTING SERVICES</p> <p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING BIDS FROM QUALIFIED VENDORS FOR A CONTRACT TO PROVIDE PROCESSING AND IDENTIFICATION OF BENTHIC MACROINVERTEBRATE SAMPLES COLLECTED FROM WEST VIRGINIA WATERS, PER THE FOLLOWING SPECIFICATIONS, BID REQUIREMENTS, TERMS &amp; CONDITIONS, AND THE ATTACHED 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, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30)</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Walt D</i>	TELEPHONE 859-977-2000	DATE June 22, 2011
TITLE President	FEIN 61-1379371	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  
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# Request for Quotation

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**DEP15456**

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**2**

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

**VENDOR**  
 \*324095528      859-977-2000  
**THIRD ROCK CONSULTANTS LLC**  
**2526 REGENCY ROAD #180**  
**LEXINGTON KY 40503**

**SHIP TO**  
**ENVIRONMENTAL PROTECTION,**  
**DEPARTMENT OF**  
**DIV OF WATER AND WASTE MGT**  
**601 57TH STREET SE**  
**CHARLESTON, WV**  
**25304      304-926-0499**

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<p>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, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Malcolm B.</i>	TELEPHONE <b>859-977-2000</b>	DATE <b>June 22, 2011</b>
TITLE <b>President</b>	FEIN <b>61-1379371</b>	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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# Request for Quotation

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VENDOR

\*324095528      859-977-2000  
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 LEXINGTON KY 40503

SHIP TO

ENVIRONMENTAL PROTECTION,  
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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
05/26/2011				

BID OPENING DATE: 06/23/2011      BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
				AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM. REV. 05/26/2009		
				NOTICE A SIGNED BID MUST BE SUBMITTED TO: DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130 THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED: SEALED BID BUYER: CB-23 RFQ. NO.: DEP15456 BID OPENING DATE: 06/23/2011 BID OPENING TIME: 1:30 PM PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: -----859-977-2001----- CONTACT PERSON (PLEASE PRINT CLEARLY): -----Marcia L Wooton-----		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE *Marcia L Wooton*      TELEPHONE 859-977-2000      DATE June 22, 2011  
 TITLE President      FEIN 61-1379371      ADDRESS CHANGES TO BE NOTED ABOVE

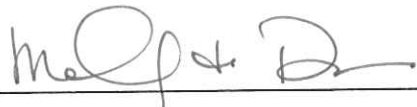
WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

DEP15456  
 BID SHEET

Item No.	Quantity	Description	Unit Price	Amount
A	500	Per sample un-sorted, identified to Genus level: 200-organism subsample	150.00	75,000.00
E	4	Per each "sample pick-up/delivery" not "per sample" (Assume 100 samples per pickup)	0.00	0.00
F	5 hr	Cost/hour for professional staff representation of data in legal/administrative setting	80.00	400.00

TOTAL = 75,400.00

Contractor: Third Rock Consultants, LLC

Signature: 

Date: June 22, 2011

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.

RFQ No. DEP15456

STATE OF WEST VIRGINIA  
Purchasing Division

**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 owned 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.

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

**WITNESS THE FOLLOWING SIGNATURE**

Vendor's Name: Third Rock Consultants, LLC

Authorized Signature: [Signature] Date: June 22, 2011

State of Kentucky

County of Fayette, to-wit:

Taken, subscribed, and sworn to before me this 22 day of June 2011.

My Commission expires 5-28, 2014.

AFFIX SEAL HERE

NOTARY PUBLIC [Signature]  
ID # 419235

## Company Profile

Third Rock Consultants, LLC (Third Rock) is a small, woman-owned environmental consulting firm with specialties in the areas of aquatic and terrestrial biology, environmental engineering and assessment, statistical analysis, community impact assessment, and economic analyses. We maintain a state-of-the-art aquatic biology lab where our biologists process and identify thousands of macroinvertebrate and fish samples each year.

Third Rock was formed in January 2001 by Molly Foree Davis, an environmental attorney with a strong background in environmental analysis. The original staff has grown to 34 and is comprised of aquatic and terrestrial biologists, environmental analysts and engineers, professional geologists, an economist, and several environmental technicians.

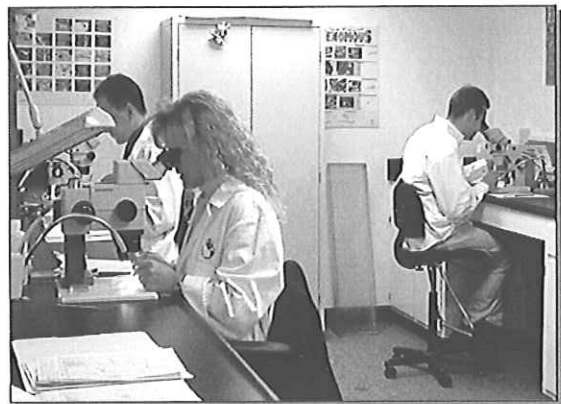
Our biologists are some of the most respected in their fields. Our unique, and frankly uncommon blend of technical expertise *and* business savvy has proven invaluable to our clients – clients who include multiple *federal, state, and local agencies; engineering consulting firms; industry; and environmental groups.*

For federal contracts, Third Rock is considered a Woman-Owned Small Business. As such, Third Rock is also eligible to participate in disadvantaged business enterprise (DBE) programs, which provide for equal opportunity for women- and minority-owned businesses seeking contracts for state government-funded projects (49 CFR 29).

## Relevant Experience

We have more than 50 years of collective experience in the collection, processing, and identification of benthic macroinvertebrates. Third Rock has three masters' level biologists who routinely conduct biological assessment projects including the collection, processing, and identification of macroinvertebrate samples and fish: *Bert Remley, Chelsey Olson, and Ed Hartowicz.*

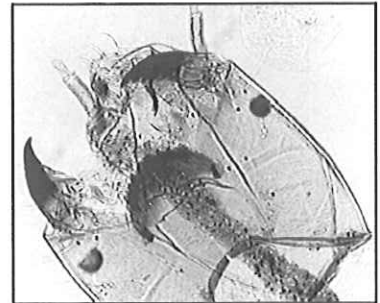
In addition to our taxonomists, Third Rock has five full-time laboratory technicians with environmental science degrees who perform sample processing and data entry. Since Third Rock's inception, our biological laboratory has sorted and identified over 9,500 macroinvertebrate samples. Resumes of Bert Remley and Chelsey Olson – key personnel who will be assigned to this project – are included as **Appendix A**. Both Bert and Chelsey hold Taxonomic Certifications from the North American Benthological Society (NABS); proof of these certifications is included in **Appendix B**.





## Equipment

Third Rock's aquatic laboratory is equipped with six dissecting microscopes and five compound microscopes. Our dissecting scopes include two Olympus SZH (11X - 96X magnification), one Olympus SZ60 (15X - 94.5X), one Meiji EMZ-TR (14X - 90X), and two Nikon SMZ 2B (8X - 75X). Our compound scopes include two Nikon Labophot-POL (100X - 1000X, including oil immersion) equipped with measuring reticles and bright field, dark field, and phase contrast optics and three Nikon Labophot 2 (100X - 1000X, including oil immersion).



We also have photo tube attachments/adapters that can be fitted on our Olympus and Nikon microscopes for digital photography, and we recently purchased a Sentech high resolution color video camera and Optem video relay lens that allow us to send images to a monitor or LCD projector.

## Contract Management



Third Rock will designate a single point of contact for this project. Marcia Wooton, a Senior Project Manager with 35 years of experience will be Third Rock's Contract Administrator. Ms. Wooton will be responsible for ensuring staff assignments are made, deadlines are met, scope items are completed, and invoicing is accurate. To accomplish these tasks, she will maintain a high level of communication with the Laboratory QA/QC Officer and provide Third Rock staff with the information needed to complete tasks in a professional and timely manner.

## Quality Assurance/Quality Control Procedures



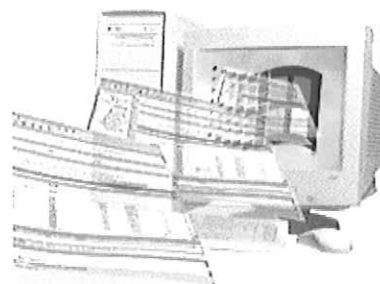
Quality assurance and quality control (QA/QC) of macroinvertebrate processing and identification will be supervised by Third Rock aquatic biologist and QA/QC manager Bert Remley. Bert will work with Ms. Wooton to ensure that Third Rock's work product is completed in accordance with all client specified methods. Bert received his Master's Degree in biology from Morehead State University in 1997 and has worked for Third Rock since its formation in 2001. His resume is included in **Appendix A**. Bert has successfully completed the North American Benthological Society's (NABS) Taxonomic Certification tests for Eastern EPT and Chironomidae taxa to genus level and has completed the Ohio EPA Voluntary Action Program to perform Macroinvertebrate Assessments-Invertebrate Community Index. Proof of these certifications and others is included in **Appendix B**.

Detailed QA/QC Protocol is included in **Appendix C**.

Macroinvertebrate Taxonomic References are included in **Appendix D**.

## Laboratory Information Management System

Each group of samples received at Third Rock will be assigned a Project Number. Each sample received will be logged into Third Rock's Macroinvertebrate Laboratory Information Management System (MacLIMS). The project Chain-of-Custody form will be scanned into MacLIMS; sample information, identification (station ID, stream name, etc.), collection date and time, receipt date and time, and required analyses, will be entered in MacLIMS for reference and tracking purposes. During successive stages of sample processing and identification, additional information will be entered in MacLIMS for each sample such as date sorted, number of grids sorted, number of organisms found, name of sorter, number and taxa of organisms, identification completion date, and name of taxonomist. All sample and data information will be maintained in MacLIMS and used to prepare client reports and associated documents. Station metric calculations can be generated through MacLIMS upon request. Upon completion of the project, all related sample and data information will be archived in MacLIMS. In addition, copies of the final Dataset and Benchsheets will be archived in the Client's Project File.



## Client References

CLIENT	LOCATION	CONTACT PERSON	TELEPHONE NUMBER	DATE
United States Environmental Protection Agency	Ohio	Donald Klemm	513-569-7090	2006-2007
United States Army Corps of Engineers, Louisville District	Kentucky Indiana Ohio	Dr. Lisa Underwood	502-315-6318	1999-present
West Virginia Department of Environmental Protection, Office of Water Resources	West Virginia	Janice Smithson	304-926-0499	1999-2003, 2005-Present
Lexington-Fayette Urban County Government (LFUCG)	Kentucky	Susan Bush	859-425-2800	1992-Present
ORSANCO	Ohio	Ryan Argo	513-231-7719	2004-present
TN Department of Environment & Conservation	Tennessee	David Stucki	615-262-6327	2005
Mississippi Department of Environmental Quality	Mississippi	Mike Beiser	601-664-3959	2004

## Direct Experience

Third Rock's staff has provided macroinvertebrate sorting and identification services to the West Virginia Division of Environmental Protection (WVDEP) in Charleston, West Virginia since 1999. The experience and efficiency of our taxonomists has led to the creation of a strong working relationship with the WVDEP, which has resulted in four successive contracts/renewal options through 2010. Third Rock has processed over 3,000 samples for the WVDEP.

Third Rock provides sample pick-up services for the WVDEP, a convenience not typically provided by most laboratories. The WVDEP personnel collects samples from watersheds throughout West Virginia using kicknet sampling procedures. The WVDEP collects four to eight kicknet samples at each site and combines these in the field to form one composite sample. Samples are sieved in the field to remove all large debris.

Due to the volume of sample collected in the field, a total count of macroinvertebrates would not be efficient or practical. Therefore, once the samples arrive at the laboratory and are logged into MacLIMS, they are sorted and a random 200-specimen subsample is taken from each sample. Since the subsampling procedures are performed randomly, any sorting bias is prevented. Our biologists identify the macroinvertebrates to genus level, per client specifications, and record their findings directly into MacLIMS. The data is compiled, QA reviewed, and reports are generated. A Dataset (summary of results per delivery group) and Laboratory Benchsheets (results per sample with associated collection and processing information) are forwarded to WVDEP electronically. All associated information and data is archived in MacLIMS. Copies of the final Dataset and Benchsheets are also archived in WVDEP's Project File. Examples of these reports are included in **Appendix E**.

Third Rock biologists also established and maintain a reference collection for the WVDEP. The reference collection includes an example of one or more specimens of each taxon encountered.



All empty collection containers, any requested sorted/unsorted residue, and identified specimens (vials and slides) are returned to WVDEP per Delivery Group w/ applicable COC reference. The Reference Collection, which is compiled throughout the project year, is delivered to WVDEP at year end.

# Bert Remley

## Environmental Scientist

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**Years Experience:** 20

### Education

M.S. Biology, Morehead State University, 1997  
B.A. Anthropology, University of Kentucky, 1991

### Professional Memberships and Associations

North American Benthological Society  
American Fisheries Society - Kentucky Chapter  
Carolina Area Benthologists  
Freshwater Mollusk Conservation Society

### Specialized Training

- Macroinvertebrate Assessment Certification for Invertebrate Community Index (ICI), Ohio Environmental Protection Agency, 2003-2010
- Taxonomic Certification for Eastern EPT (Group 2), North American Benthological Society, 2011
- Taxonomic Certification for Eastern Chironomidae, North American Benthological Society, 2011
- Floodplains, Riparian Zones, and Buffer Strips: Key Components to Aquatic Life Use Attainment and Self-Sustaining Stream Systems, Soil and Water Conservation Society, 2006
- Canaan Valley Institute, Association of Mid-Atlantic Aquatic Biologists Workshops, 2005
- Laboratory QA/QC for Benthic Macroinvertebrate Sample Processing and Taxonomic Identifications, Mid-Atlantic Water Pollution Biology Workshop, Mid-Atlantic Environmental Protection Agency, 2003
- Water Beetle Taxonomy & Identification, John H. Epler, Ph.D., Instructor, Duke Power Environmental Center, 2002
- Aquatic Insect Collection Protocols Workshop for Stream Mitigation & Restoration, Dave Penrose, Instructor, North Carolina Department of Environment & Natural Resources, 2001
- Oligochaetes Identification, Carolina Benthological Workshop, 2001
- Crayfish Workshop, Carolina Benthological Workshop, 2001
- Aquatic Entomology, Eastern Kentucky University, 2000
- Biology and Identification of Southeastern Mayflies, Stoneflies, and Caddisflies, Clemson University, 2000

### Professional Experience/Areas of Expertise

Bert Remley is Third Rock's senior aquatic macroinvertebrate taxonomist and is the Quality Control/Quality Assurance Officer for Third Rock's aquatic biology laboratory. In addition to macroinvertebrate taxonomy, Bert also conducts stream sampling for aquatic macroinvertebrates, fish, plankton, and freshwater mussels. He is experienced in the identification and ecology of aquatic macroinvertebrates and fish of the region, conducting surveys in Kentucky, Ohio, Indiana, Illinois, Tennessee, West Virginia, Virginia, South Carolina, and North Carolina. Bert has also conducted hundreds of biological assessment for threatened and endangered species in Kentucky and Tennessee including numerous bat and mussel species. As a PADI certified open water diver and part of Third Rock's dive team, he has led numerous mussel surveys.

## **Bert Remley Environmental Scientist**

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### **Macroinvertebrates**

Bert has collected hundreds of samples from the southeast and midwest employing several different sampling protocols. He is certified by the North American Benthological Society to identify eastern midges (Chironomidae), mayflies (Ephemeroptera), stoneflies (Plecoptera), and caddisflies (Trichoptera) to genus level. He is also certified by the Ohio EPA to collect, identify, and calculate macroinvertebrate community metrics in Ohio. Similarly, he is certified to collect benthic macroinvertebrates for 401 certification projects in North Carolina. Bert has collected macroinvertebrate samples for the United States Army Corps of Engineers (USACE) Louisville District, Louisville Metropolitan Sewer District, and Lexington Fayette Urban County Government.

Bert is the QA/QC officer for Third Rock's macroinvertebrate lab. He is responsible for calculating macroinvertebrate bioassessment indices, assisting taxonomist with their identifications, managing samples within the laboratory, reviewing and reporting data. Bert has personally identified over 2,000 samples from 10 different states within the southeast, midwest, and pacific northwest. Recent clients Bert has performed macroinvertebrate identifications for include the West Virginia Department for Environmental Protection (WVDEP), USACE Louisville District, Mississippi Department of Environmental Quality (MSDEQ), ORSANCO (Ohio), Louisville Metropolitan Sewer District (MSD), Tennessee Department of Environment and Conservation (TDTC), United States Environmental Protection Agency (USEAP), and numerous private clients.



**Years Experience - 11**

**Education**

M.S. Biology, Eastern Kentucky University, 2005

B.S. Biology, Transylvania University, 2000

**Professional Memberships and Associations**

Kentucky Academy of Science

Kentucky Wildlife Society

Kentucky Ornithological Society

Freshwater Mollusk Conservation Society

**Specialized Training**

- Taxonomic Certification for Eastern EPT (Group 2), North American Benthological Society, 2008
- Taxonomic Certification for Eastern Chironomidae, North American Benthological Society, 2011
- Floodplains, Riparian Zones, and Buffer Strips: Key Components to Aquatic Life use Attainment and Self-Sustaining Stream Systems, Soil and Water Conservation Society, 2006
- Canaan Valley Institute, Association of Mid-Atlantic Aquatic Biologists Workshops, 2005
- Mid-Atlantic Water Pollution Biology Workshop, Mid-Atlantic Environmental Protection Agency, 2003

**Professional Experience/Areas of Expertise**

Chelsey has a Masters Degree in Biology from Eastern Kentucky University with specialized experience and training in zoology, aquatic macroinvertebrates and mussels, and water quality.

**Macroinvertebrates**

Chelsey is integrally involved in Third Rock's identification, sorting, and collection of macroinvertebrates. He is certified by the North American Benthological Society to identify eastern midges (Chironomidae), mayflies (Ephemeroptera), stoneflies (Plecoptera), and caddisflies (Trichoptera) to genus level. He routinely identifies aquatic members of the phyla Arthropoda, Mollusca, and Annelida to genus/species. He has performed macroinvertebrate identification for numerous clients including the West Virginia Department of Environmental Protection (WVDEP), Tennessee Department of Environment and Conservation (TDTC), the US Environmental Protection Agency (USEPA), ORSANCO (Ohio), Lexington-Fayette County Urban Government, the Kentucky Division of Water, and more. Chelsey is also responsible for statistical analyses of these macroinvertebrates, including the modified Hilsenhoff Biotic Index.

# TAXONOMIC CERTIFICATION

*This five year certification is awarded to*

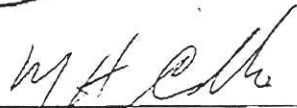
***BERY REAMLEY***

*In recognition of excellence for specimen identification to Genus for*

*Eastern*

*Ephemeroptera, Plecoptera & Trichoptera*

NORTH AMERICAN BENTHOLOGICAL SOCIETY

  
Dr. Murray Colbo

January 2016  
Date of Expiry

# TAXONOMIC CERTIFICATION

*This five year certification is awarded to*

**BERRY REAMLEY**

*In recognition of excellence for specimen identification to Genus for  
Eastern Chironomidae*

**NORTH AMERICAN BENTHOLOGICAL SOCIETY**



  
Dr. Murray Colbo

January, 2016  
Date of Expiry



Ohio Environmental Protection Agency  
Division of Emergency and Remedial Response  
Voluntary Action Program

This is to certify that

**BERT REMLEY**

having complied with the professional requirements established by the Ohio Environmental Protection Agency under Ohio Administrative Code Rule 3745-300-05(E), is declared to be certified for performing:

**Macroinvertebrate Assessment - Invertebrate Community Index (ICI)**

This certification is effective from 10/01/2009 until 10/31/2010.

All evaluations and indices the above-named individual is deemed qualified to conduct must be performed in accordance with the procedures contained in the Ohio EPA "Biological Criteria for the Protection of Aquatic Life: Volume II: Users Manual for Biological Field Assessment of Ohio Surface Waters", October 30, 1997 (Updated 1/1/88 and Amended 9/30/89) and the procedures contained in Ohio Administrative Code Rule 3745-300-09(F).

A handwritten signature in black ink, appearing to read "Amy Yersavich", written over a horizontal line.

Amy Yersavich, Manager, VAP  
Ohio Environmental Protection Agency

# TAXONOMIC CERTIFICATION

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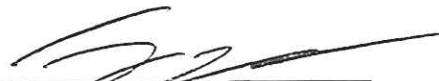
*This certificate is awarded to*

***CHELSEY OLSON***

*in recognition of the successful completion for*

*LEVEL 2 GROUP 2 EASTERN EPHEMEROPTERA, PLECOPTERA and TRICHOPTERA*

**NORTH AMERICAN BENTHOLOGICAL SOCIETY**



Dr. Trefor Reynoldson

May, 2008  
Date



**APPENDIX C – QUALITY ASSURANCE / QUALITY CONTROL**  
**Third Rock Consultants, LLC**

Quality Assurance (QA) and Quality Control (QC) for sample processing is maintained by following the guidelines provided below.

**1.1 Sample Sieving / Sorting**

1.1.1 Before laboratory sieving of raw samples is considered complete, all sieving equipment is thoroughly examined for attached organisms. Any observed organisms are returned to the sample prior to sorting

1.1.2 Each piece of sieving equipment is thoroughly cleaned between samples.

1.1.3 Ten percent of the sorted samples for each project should be examined by a second laboratory analyst (QC analyst) or a qualified co-worker. The QC analyst will examine the chosen grids, sample residue, or entire sample and will look for organisms missed by the sorter. Organisms found will be added to the sample vials.

1.1.4 If the QC analyst recovers organisms constituting greater than 10 percent of total sample abundance, the sample fails. If the first 10% of the sample lot fails, a second 10% of the sample lot will be checked by the QC analyst. Sorters that have a sample lot fail will be re-trained by the QC analyst. Sorters in-training will have their samples 100% checked until the trainer decides that training is complete.

1.1.5 Results of the sorting QA/QC check are recorded on the Macroinvertebrate Sample Sorting Efficiency Form. An electronic copy of this form is kept in the project file.

1.1.6 Other sorting QA/QC checks (e.g., Caton *et al.* [1991]) will be performed if requested by the client or the state or federal agency reviewing results for the project.

**1.2 Identification**

1.2.1 Only the most current taxonomic references are used in making identifications. The list of taxonomic references provided in Appendix D is continually updated as new references are published.

1.2.2 To maintain consistency in taxonomic resolution, the level of taxonomy document is followed when making identifications. Taxonomic references are kept in the office of Mr. Bert Remley and in Third Rock's Macroinvertebrate Laboratory.

1.2.3 Questionable identifications are verified by other Third Rock taxonomists or outside experts.

1.2.4 A voucher or reference macroinvertebrate collection is maintained for all taxa encountered during sample processing. The reference collection is arranged in phylogenetic order and stored in a labeled, metal cabinet in Third Rock's Biology Laboratory.

1.2.5 Repeat identifications are made for a minimum of five percent of samples in each project. Taxonomic accuracy between taxonomists should be at least 90 percent during this quality control audit. If taxonomic accuracy falls below 90 percent, all samples in each sample group will be

reidentified. A third taxonomist will reconcile differences in identification, and discussion will take place between taxonomists to ensure correct identifications. The results of this QA check and any corrective action are recorded on the Macroinvertebrate Sample Taxonomic and Enumeration Efficiency Form. An electronic copy of this form is kept in the project folder.

QA/QC Forms Follow For Reference.



*Third Rock Consultants, LLC*  
*Macroinvertebrate Sample Taxonomic & Enumeration Efficiency Form*

Client Name: \_\_\_\_\_

Sample ID: \_\_\_\_\_

Third Rock Project #: \_\_\_\_\_

Original Taxonomist:	Second Taxonomist:
Original Date Completed:	Review Date Completed:
# Organisms Enumerated (Taxonomist 1):	# Organisms Enumerated (Taxonomist 2):
<i>Percent Difference in Enumeration (PDE) =</i>	
$(n_1 - n_2) \div (n_1 + n_2) \times 100 = \% \text{ Difference in Enumeration (PDE)}$ <p style="text-align: right; margin-right: 100px;"> <math>n_1 = \# \text{ organisms counted by Taxonomist 1}</math>  <math>n_2 = \# \text{ organisms counted by Taxonomist 2}</math> </p>	
<i>Percent Taxonomic Disagreement (PTD) =</i>	
$PTD = [ 1 - (\text{comp}_{\text{pos}} \div N) ] \times 100$ <p style="text-align: right; margin-right: 100px;"> <math>\text{Comp}_{\text{pos}} = \text{number of taxonomic agreements (see Taxonomic Comparison Form)}</math>  <math>N = \text{total number of organisms}</math> </p>	
Comments:	





**APPENDIX D - MACROINVERTEBRATE TAXONOMIC REFERENCES**  
**Third Rock Consultants, LLC**

**GENERAL**

- Brigham, A. R., W. U. Brigham, and A. Gnlika (eds.). 1982. Aquatic Insects and Oligochaetes of North and South Carolina. Midwest Aquatic Enterprises, Mahomet, Illinois.
- Merritt, R. W. and K. W. Cummins (eds.). 2008. 4<sup>th</sup> Edition. An Introduction to the Aquatic Insects of North America. Kendall/Hunt Publishing Company, Dubuque, Iowa. 862 pp.
- McCafferty, W. P. 1981. Aquatic Entomology. Science Books International, Boston, Maryland. 448 pp.
- Pennak, R. W. 1989. 3<sup>rd</sup> 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.). 1991. Ecology and Classification of North American Freshwater Invertebrates. Academic Press, Inc., San Diego, California. 911 pp.
- Usinger, R. L. (ed.). 1956. Aquatic insects of California. University of California Press, Berkeley, California. 508 pp.

**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**

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## EPHEMEROPTERA

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- Allen, R. K. and G. F. Edmunds, Jr. 1963. A revision of the genus *Ephemerella* (Ephemeroptera: Ephemerellidae) VI. The subgenus *Serratella* in North America. Ann. Entomol. Soc. Amer. 56:583-600.
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SampleID	Grids	Organisms	Final ID	Ref Collection	Damaged	Immature	Adult	Pupae	Larvae	Total Count
10-AMB-004	3	210	Cardiocladius sp	FALSE	FALSE	FALSE			19	19
10-AMB-004			Cheumatopsyche sp	FALSE	FALSE	FALSE			68	68
10-AMB-004			Corydalus sp	FALSE	FALSE	FALSE			2	2
10-AMB-004			Cricotopus/Orthocladius gr	FALSE	FALSE	FALSE			30	30
10-AMB-004			Hydropsyche sp	FALSE	FALSE	FALSE			1	1
10-AMB-004			Hydroptila sp	FALSE	FALSE	FALSE			5	5
10-AMB-004			Isonychia sp	FALSE	FALSE	FALSE			4	4
10-AMB-004			Leptoxis sp	FALSE	FALSE	FALSE			1	1
10-AMB-004			Maccaffertium sp	FALSE	FALSE	FALSE			1	1
10-AMB-004			Microcyloepus sp	FALSE	FALSE	FALSE	6		6	12
10-AMB-004			Oligochaeta	FALSE	FALSE	FALSE			1	1
10-AMB-004			Optioservus sp	FALSE	FALSE	FALSE			2	2
10-AMB-004			Petrophila sp	FALSE	FALSE	FALSE			3	3
10-AMB-004			Polypedilum sp	FALSE	FALSE	FALSE			18	18
10-AMB-004			Rheocricotopus sp	FALSE	FALSE	FALSE			3	3
10-AMB-004			Rheotanytarsus sp	FALSE	FALSE	FALSE			4	4
10-AMB-004			Simulium sp	FALSE	FALSE	FALSE			20	20
10-AMB-004			Stenelmis sp	FALSE	FALSE	FALSE	1		1	2
10-AMB-004			Sublettea sp	FALSE	FALSE	FALSE			1	1
10-AMB-004			Tanytarsus sp	FALSE	FALSE	FALSE			2	2
10-AMB-006	8	204	Acentrella sp	FALSE	FALSE	FALSE			8	8
10-AMB-006			Antocha sp	FALSE	FALSE	FALSE			5	5
10-AMB-006			Baetis sp	FALSE	FALSE	FALSE			12	12
10-AMB-006			Caenis sp	FALSE	FALSE	FALSE			13	13
10-AMB-006			Ceratopsyche sp	FALSE	FALSE	FALSE			1	1
10-AMB-006			Cheumatopsyche sp	FALSE	FALSE	FALSE			10	10
10-AMB-006			Chimarra sp	FALSE	FALSE	FALSE			4	4
10-AMB-006			Corbicula sp	FALSE	FALSE	FALSE			1	1
10-AMB-006			Corydalus sp	FALSE	FALSE	FALSE			4	4
10-AMB-006			Cricotopus/Orthocladius gr	FALSE	FALSE	FALSE			2	2
10-AMB-006			Dineutus sp	FALSE	FALSE	FALSE			1	1
10-AMB-006			Isonychia sp	FALSE	FALSE	FALSE			49	49
10-AMB-006			Maccaffertium sp	FALSE	FALSE	FALSE			18	18
10-AMB-006			Microcyloepus sp	FALSE	FALSE	FALSE	16		2	18

