



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
DEP14486

PAGE
4

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

Bruce E. Fishman PhD DABT
 RBR Consulting Inc.
 650 Shady Drive
 Beaver Falls, PA 15010
 724-846-4096 phone
 724-846-6974 fax
 Bruce.fishman@riskbasedremedies.com

SHIP TO

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

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
12/22/2008				

BID OPENING DATE: 01/22/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
BUYER: CB-23						
RFQ. NO.: DEP14486						
BID OPENING DATE: 01/22/2009						
BID OPENING TIME: 1:30 PM						
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: 724-846-6974						
CONTACT PERSON (PLEASE PRINT CLEARLY): Bruce Fishman						
* Bruce E. Fishman PhD DABT RBR Consulting Inc. 650 Shady Drive Beaver Falls, PA 15010 724-846-4096 phone 724-846-6974 fax Bruce.fishman@riskbasedremedies.com				***** TOTAL: _____		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
SIGNATURE			TELEPHONE		DATE	
TITLE		FEIN		ADDRESS CHANGES TO BE NOTED ABOVE		

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

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

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130

State of West Virginia **VENDOR PREFERENCE CERTIFICATE**

Certification and application* is hereby made for Preference in accordance with **West Virginia Code, §5A-3-37**. (Does not apply to construction contracts). **West Virginia Code, §5A-3-37**, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

1. Application is made for 2.5% resident vendor preference for the reason checked:

- 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,
- Bidder is a partnership, association or corporation resident vendor and 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 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,
- Bidder is a nonresident vendor which has an affiliate or subsidiary which employs 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; or,

2. Application is made for 2.5% resident vendor preference for the reason checked:

- 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; or,

3. Application is made for 2.5% resident vendor preference for the reason checked:

- 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 Bidder's 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; or,

4. Application is made for 5% resident vendor preference for the reason checked:

- Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,

5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:

- Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,

6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:

- Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of 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) reject the bid; 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 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 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: _____ Signed: _____

Date: _____ Title: _____

**Check any combination of preference consideration(s) indicated above, which you are entitled to receive.*

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:

West Virginia Code §5A-3-10a provides that: 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.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:

West Virginia Code §21-1D-5 provides that: Any solicitation for a public improvement construction contract shall require each vendor that submits a bid for the work to submit at the same time an affidavit that the vendor has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code. A public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the West Virginia Code may take place before their work on the public improvement is begun.

ANTITRUST:

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

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 is in compliance with the requirements as stated.

Vendor's Name: RBR Consulting Inc.

Authorized Signature: Bruce Fisher Date: 1-20-09

REQUEST FOR QUOTATIONS
SPECIFICATIONS
DEP14486

The West Virginia Department of Environmental Protection (DEP) is releasing this request for quotations (RFQ) to qualified vendors to secure an environmental risk assessor to determine ecological and human health risks that may be associated with projects in our Voluntary Remediation and Redevelopment Program (VRRP). As part of this quotation, a mandatory prebid conference will be held to answer questions and provide clarification to vendors. Any changes to the RFQ will result in an addendum being provided to all vendors in attendance at the prebid.

BACKGROUND

The West Virginia Department of Environmental Protection (WVDEP), Division of Land Restoration, Office of Environmental Remediation (OER) oversees the Voluntary Remediation and Brownfield Programs which encourages the voluntary clean-up of contaminated sites and redevelopment of abandoned and under-utilized properties. Within this program, human health and ecological risks are evaluated by use of 1 or more levels of evaluation, in order to determine their suitability for reuse, and the need for applying engineering or institutional controls to mitigate remaining site risks.

The primary responsibility for providing an accurate assessment of site risks resides with the Licensed Remediation Specialist (LRS), who is retained by the property owner or interested party, to oversee the site evaluation. Once submitted, the risk assessment is reviewed by an agency Risk Assessor to ensure it complies with applicable regulatory requirements, and is supported by adequate analytical data. In addition, an agency risk assessor is often consulted during the early stages of a site investigation, to assist in developing a sampling and analysis plan. This ensures that samples are collected from appropriate locations, analyzed for relevant contaminants, and that the resulting data are appropriate for use in assessing site risk.

At the present time, risk assessments are most often performed and/or evaluated by agency toxicologists. Due to the variability in workloads of internal personnel, however, and the statutory requirements for timely review of documents submitted to the VRRP, the agency may experience a temporary need for additional capacity in order to meet required review deadlines for risk assessment and related documents. As this need is transient, the agency has determined that it is best met by use of an independent contractor.

DEFINITION

An *Environmental Risk Assessor* evaluates the exposure of human and ecological receptors to contaminants in environmental media (soil, groundwater, air) and determines the likelihood that such exposure, over a defined period of time, would result in an adverse impact to the health of the receptor. Because risk assessments are dependent upon mathematical constructs of interactions between living organisms and contaminants in their environments, risk assessors must possess a knowledge of toxicology, statistics, biology, and chemistry, as well as the ability to apply appropriate computer models to simulate contaminant behavior in environmental media and/or contaminant uptake and distribution within a biological system.

In addition to technical skills, a risk assessor should have an understanding of state and federal regulations and guidance specific to risk assessment and environmental law is necessary. A cursory knowledge of related disciplines (e.g. geology, ecology, etc.) is also helpful.

CONDITIONS

WVDEP will enter into an *open-end contract* with one (1) Risk Assessor. Any expenses incurred while developing this cost proposal are considered incidental to the project and will not be billed to the WVDEP. In addition, WVDEP may contract separately with any source(s) considered qualified, due to their professional specialization, proximity to project site and any other considerations pertinent to the performance of Risk Assessor services by putting the project out for public bid through the Purchasing Division of the Department of Administration.

SCOPE OF WORK

The work involves assisting the Office of Environmental Remediation in reviewing and making recommendations on risk assessment, risk characterization and risk management related documents and activities submitted and performed by Licensed Remediation Specialists (LRSs). Results of the review must be communicated to both the OER Project Manager and senior OER Toxicologist as a written report that may be included as an attachment to, or summarized in subsequent communication to the LRS.

All results, submittals, and reports shall become the sole property of WVDEP.

At the discretion of the Vendor, any individual possessing sufficient experience in the preparation of human health and ecological risk assessments and/or knowledge in the applicable disciplines of toxicology, statistics, biology, and chemistry may conduct the review. The final report, however, must be prepared by, or under the direction of, an Environmental Risk Assessor, possessing qualifications as listed below.

QUALIFICATIONS

For purposes of this RFQ, an Environmental Risk Assessor must possess the following qualifications:

- **An earned doctoral degree in a relevant field of study from an accredited university and a minimum of three years of relevant professional experience; or**
- **A Masters of Science degree in a relevant field of study from an accredited university and a minimum of five years of relevant professional experience.**
- **Relevant professional experience must consist of work related directly to risk assessment, risk characterization and risk management activities, including at least one year performed at the supervisory or project manager level.**

Vendor must submit a current resume of pertinent education and work experience for the qualified individual, including proof of educational qualifications along with their bid. Failure to submit this required information will result in rejection of your bid.

NOTE: The DEP OER reserves the right to request and approve the credentials of any person assigned to perform work under this contract.

INVOICE:

A flat rate per hour will be the total charge to the state and will cover the full cost of all work hours including labor, travel and materials. The vendor will be contracted to provide Risk Assessor services on an "as needed" basis only. The vendor will invoice DEP on a monthly basis. All invoices must be accompanied by a sworn statement detailing actual hours worked.

INDEMNIFICATION:

The Vendor agrees to indemnify, defend and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person or firm performing or supplying services, materials or supplies in connection with the performance of the contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use or disposition of any data used under the contract in a manner not authorized by the contract, or by Federal or State statutes or regulations; (3) Any failure of the Vendor, its officers, employees or subcontractors to observe State and Federal laws, including but not limited to labor and wage laws.

RECORD RETENTION (Access & Confidentiality):

Vendor shall comply with all applicable Federal and State of West Virginia rules and regulations, and requirements governing the maintenance of documentation to verify any cost of services or commodities rendered under this contract by Vendor. The Vendor shall maintain such records a minimum of five (5) years and make available all records to Agency personnel at Vendor's location during normal business hours upon written request by Agency within 10 days after receipt of the request. Vendor shall have access to private and confidential data maintained by Agency to the extent required for Vendor to carry out the duties and responsibilities defined in this contract. Vendor agrees to maintain confidentiality and security of the data made available and shall indemnify and hold harmless the State and Agency against any and all claims brought by any party attributed to actions of breach of confidentiality by the Vendor, subcontractors, or individuals permitted access by Vendor.

VENDOR REGISTRATION

It is not required to be a registered vendor with the WV State Purchasing Division to submit a bid. However, the apparent successful vendor must be registered prior to the award of an actual contract.

DEP14486 BID SCHEDULE

¹Risk Assessor: \$ 80 / Hour X 700 Hours = 56,000

Bruce E. Fishman PhD DABT
RBR Consulting Inc.
650 Shady Drive
Beaver Falls, PA 15010
724-846-4096 phone
724-846-6974 fax
Bruce.fishman@riskbasedremedies.com

Vendor Name: RBR Consulting Inc.

Signature: Bruce Fishman
Bruce Fishman

Date: 1-20-09

¹ The total number of hours listed are only used to determine the lowest cost and actual total hours may be greater or less.

The University of Connecticut

To all to whom these presents may come greeting

As it knoweth that

Bruce Elliott Fishman

having satisfied the requirements for the Degree of

Doctor of Philosophy

in the

Graduate School

has been admitted to that degree with all the honors, privileges, and obligations thereto appertaining
In Testimony Whereof the seal of the University and the signatures as authorized by the Board of Trustees are hereunto affixed

Given at Storrs on the thirty-first day of August, A.D., 1987.



17.M. 00710

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Risk-Based Remedies

RBR Consulting, Inc.

650 Shady Drive
Beaver Falls, PA USA
15010

BRUCE E. FISHMAN, Ph.D. DABT

Consulting Toxicologist in Human Health and Ecological Risk Assessment, Applied Toxicology and Risk Communication

EDUCATION

- . 1980 B.S., Zoology, University of Massachusetts
- . 1983 M.S., Pharmacology, University of Rhode Island
- . 1987 Ph.D., Toxicology, University of Connecticut

PROFESSIONAL APPOINTMENTS AND REGISTRATIONS

- . Diplomate of the American Board of Toxicology (1993); Recertified 2008
- . Cleanup Standards Science Advisory Board, Pennsylvania Land Recycling Program, Risk Assessment Committee Member, 2001-present
- . Editorial Board Manuscript Reviewer for SETAC Journal, 2004-present
- . Hazmat International Conference Advisory Board, 1993-1997

PROFESSIONAL SOCIETY MEMBERSHIPS

- . Society of Toxicology (SOT)
- . Society for Risk Analysis (SRA)
- . Society of Environmental Toxicology and Chemistry (SETAC)
- . Air and Waste Management Association (AWMA)
- . American Chemical Society (ACS)

EMPLOYMENT HISTORY

August, 1995 - Present, Director of Risk-Based Remedies, RBR Consulting, Inc., a niche-focused international environmental company specializing in health risk assessment, risk communication, ecological risk assessment, applied toxicology and statistical analyses.

July, 1991 - July, 1995, Senior Project Manager and Chief Toxicologist, ICF Kaiser Engineers, Inc.: Dr. Fishman was the founder, business developer, business and technical manager for a technical professional group of biologists, toxicologists, ecologists, statisticians and physicists.

June, 1990 - July, 1991, Project Manager and Senior Toxicologist, ENSR Consulting and Engineering: Dr. Fishman provided expert witness support and managed and directed large risk assessments and risk-based investigations.

BRUCE E. FISHMAN, PH.D. DABT (continued)

May, 1988 - May, 1990, Project Manager and Environmental Toxicologist, McLaren Environmental Engineering. Dr. Fishman provided management, expert witness and other technical support on litigation projects, permitting and site risk assessment.

May, 1987 - May, 1988, Senior Scientist, Smithkline Beecham Corporation. Dr. Fishman conducted innovative research projects to assess the pharmacology and toxicology of investigational new drugs.

May, 1983 - September, 1983, Graduate Student Toxicology Intern, Sandoz Research Institute. Dr. Fishman conducted preclinical safety assessments on investigational new drugs.

EXPERIENCE

Dr. Fishman has 28 years of experience in:

- Risk-Based Rationales for Appropriate Remedy Selection
- Risk Communication
- Regulatory Affairs, Response, and Compliance
- Health Risk Assessment and Risk Management
- Litigation Support
- Ecological Risk Assessment
- Applied Toxicology and Pharmacology
- Legislative Review
- Program and Project Management

Dr. Fishman's primary focus is the application of site-specific risk assessment approaches to establish the potential for adverse effect upon exposure to potentially toxic substances in the environment and to optimize appropriate remedy selection to mitigate the exposure. Dr. Fishman manages comprehensive human health risk assessments, literature-based or field ecological risk assessments, health-based environmental investigations, remedial analyses, and permitting efforts internationally. As a technical expert, he has presented courtroom testimony and directed, prepared, or reviewed more than three hundred quantitative human health and ecological risk assessments. His main technical focus is on site-specific, multipathway, multimedia risk assessments for permitting projects and environmental site investigations. His work has included legislative development and review and elucidation of optimal remedial actions and health standards.

PROGRAMMATIC EXPERIENCE

Dr. Fishman has provided strategic programmatic support for a number of government agencies and corporate entities with respect to using a risk-based approach on a large number of sites to assure health protection, minimize liabilities and augment timely site closure. These include: ICI Americas, Shell Oil Company and Beazer East, Inc. (Koppers). Dr. Fishman has provided support to the development of environmental programs for both Pennsylvania and West Virginia, as well as technical health risk assessment and toxicology program development support to Health Canada, the branch of the Canadian government responsible for human health issues.

REPRESENTATIVE PROJECT EXPERIENCE

Chemical Company, West Virginia: Dr. Fishman prepared an expert report and is preparing to provide testimony in a case for this carbon black plant located on the Ohio River in which 128 plaintiffs have claimed to be harmed by the inhalation of and other contact with facility emissions.

Little Rock, Arkansas: Dr. Fishman provided expert risk assessment support for this wood treating facility in which creosote released from process activities at the facility migrated to groundwater and pooled in the subsurface beneath an adjacent residential community. Dr. Fishman prepared a risk assessment for both on and off site exposures, an ecological risk assessment and an assessment of multiple drainage ditches with the potential for exposure to young children. The assessment required negotiation with the USEPA Arkansas DEQ and Arkansas DOH. Numerous public meeting were required to discuss the potential exposures with the community.

CFB Gagetown, New Brunswick: On behalf of the military base and Health Canada, Dr. Fishman evaluated multiple areas of the base on which agent orange had been applied in the 1960s during testing. The purpose of the assessment was to evaluate the potential that residual polychlorinated dibenzo-p-dioxins (PCDDs) would pose a potential health hazard to current or future receptors at the base including soldiers, power line workers, trespassers, hunters, fishermen, or other base personnel. The assessment concluded that the potential for any receptor to be exposure to concentrations of PCDDs that might cause unacceptable risk was negligible, with the exception fo the hunters and fishermen, for who data on incidental pathways of exposure were unavailable.

Former Pennzoil Refineries and Supporting Properties: Dr. Fishman has provided risk assessment and toxicology support to Shell Oil Company for twelve properties including legacy refinery properties in Pennsylvania, West Virginia and Virginia. The properties include former refineries, bulk terminals and gasoline stations. The former Pennzoil refineries in Pennsylvania are historical properties, located in Oil City, where oil was first discovered and purposefully used in the US. These facilities require extreme sensitivity due to their value as historic properties, their locations adjacent to high quality trout waters, their presence in proximity to commercial and some residential properties, and the continuing presence of naturally occurring LNAPL as well as industrial residuals including LNAPL from one hundred years of refining operations. One property is in the process of redevelopment as a condominium complex despite the continuing presence of LNAPL while others are associated with ongoing commercial operations such as quick oil change.

Chemical and Manufacturing: Dr. Fishman managed and negotiated six risk assessments for different areas of this pre-WWII former oil and gasoline storage facility and styrene plant in Western Pennsylvania. The risk assessments were conducted under the auspices of the Pennsylvania Land recycling Act (Act 2) which requires the application of risk-based approaches to remedial decision-making. The risk assessments were complicated by the presence of petroleum NAPL in the deep subsurface soils at the water table and the fact that the site is adjacent to the Ohio River. The risk assessments addressed site constituents including petroleum residuals associated with oil and gasoline as well as BTXE, styrene, and various inorganics using realistic current and anticipated continued industrial future use scenarios. Ecological risk assessment was conducted for the adjacent Raccoon Creek and for former retention ponds on the site. Detailed vapor intrusion, groundwater and surface water modeling was conducted to evaluate the relationship between the subsurface and the river and the human health and ecological risk assessments for offsite receptors.

Sydney Tar Ponds Project – North of the Coke Ovens: Dr. Fishman was co-technical director for the planning, strategy development, implementation, technical development, report preparation, communication, and defense of the major risk assessment program in the area north of the Coke Ovens in Sydney, Nova Scotia, Canada. This program consisting of 124 individual residential and industrial site risk assessments. The technical component of the risk assessments consisted of the assessment of primarily lead, arsenic, PAH and other substances. Major technical issues requiring considerable effort and expertise included the development of background concentrations for the substances of interest as well as a bioavailability (magnitude of absorption) analysis. The project team was credited with a highly successful effort by the Canadian government committee of clients as well as many affiliated organizations after completing and explaining the complex technical risk assessment work in this emotionally charged and challenging social setting.

PUBLICATIONS AND PRESENTATIONS

Ecological Risk Assessment for Brownfields sites under the West Virginia Voluntary Remediation Program. Presented to the West Virginia AWMA. September, 2007.

Assessment of Vapor Intrusion at Contaminated Sites. Presented to the West Virginia AWMA. September, 2005.

Use of Risk Assessment in the West Virginia Voluntary Program. Presented to the West Virginia AWMA. October, 2004.

Application of the Site-Specific Standard of Act 2 in the Vapor Intrusion Guidance. Presented as a portion of a training course conducted by PADEP to users of the Voluntary Land Recycling Program (Act 2) Harrisburg, PA. January, 2004.

Risk Assessment and Redevelopment of the Sydney Tar Ponds and Surrounding Area. Brownfields Conference, Charlotte, NC, November 2002.

"Accumulation of Metals in Vegetation from an Alkaline Artificial Soil". (2001) M.B. Griffith, K.S. Super, W. Lynch and B.E. Fishman. J. Environ. Sci. Health A36(1) 49-61.

"Rapid Ecological Assessment for Brownfields Redevelopment: Factors to Consider to Ensure a Streamlined Process" B.E. Fishman and K. Reinert. SETAC Abs. November, 1998.

"Innovations in the Risk Assessment for Lead: Case Study of a Multiple Land Use Neighborhood". Hazmat International, Atlantic City, NJ. June, 1997.

"Potential for Translocation of Trace Metals from an Alkaline Artificial Soil to Vegetation" (1997) M.B. Griffith, K.S. Super, W. Lynch and B.E. Fishman.

"Using Risk-Based Approaches to Control Costs in Brownfields Redevelopment". Brownfields '96: A New Environmental Frontier. Pittsburgh, PA. September, 1996.

BRUCE E. FISHMAN, PH.D. DABT (continued)

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