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*Champions for Sustainability  
Member Workshop Summary Series*

Vol. 3 No. 4  
September 2010

# **Regional Water Conference: Protecting and Using Our Greatest Asset**

**Workshop Date:  
September 9, 2010**

***In collaboration with:***



Champions for Sustainability (C4S)  
A Program of Sustainable Pittsburgh  
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## Executive Summary

Co-organized with the Environmental, Water, and Resources Institute (EWRI) of the American Society of Civil Engineers (ASCE) Pittsburgh Section, this third annual sustainability conference highlighted the ways in which our region leads in the management of water and how we are using our greatest asset. The event was held for professionals seeking to learn about practical solutions as well as engineering practitioners looking to understand what is on the minds of community leaders relating to sustainability and clean water. This workshop covered:

- Our Region's Water Advantages
- Marcellus Shale Mining Impacts and Solutions
- Early Warning Detection Systems for Water Protection
- The Future of Water Quality Regulations and Solutions
- The Water Consortium Initiative in Southwest PA
- Innovative Solutions to Clean Water
- Water Demand Issues

## C4S Workshop Series

Champions for Sustainability engages its members by convening a series of events and workshops for its membership approximately six times per year. Each workshop event explores a strategic topic of interest for the membership. Events make accessible current trends and challenges, provide access to tools, knowledge, and examples, and engage the membership in assessments and reflections to help craft the regional practice of sustainability. This publication series summarizes and makes accessible the most important outcomes from these workshop events.

## About C4S

Champions for Sustainability brings together companies large and small, from many different industries, entrepreneurs, community leaders, university researchers, educators, and other social ventures to put sustainability into practice. C4S aspires to be the most effective region-based collaboration of leaders accelerating the practice and policy of sustainability in business and civic circles. Champions for Sustainability provides value to firms and organizations that seek sustainable solutions to operational practices through convening, networking, and direct consulting.

## Memberships and Information:

- Champions for Sustainability [www.C4SPgh.org](http://www.C4SPgh.org)
- Sustainable Pittsburgh [www.sustainablepittsburgh.org](http://www.sustainablepittsburgh.org)

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## 1 Event Summary

**Title:** Regional Water Conference: Protecting and Using Our Greatest Asset

**Location:** Regional Learning Alliance at Cranberry Woods

**Date:** September 9<sup>th</sup>, 2010

### 1.1 Agenda

7:30 – 8:30 Registration & Continental Breakfast/Introductions

*Thomas Batrone, Chair, EWRI Pittsburgh Section*

*Matt Mehalik, Ph.D., Program Manager, Sustainable Pittsburgh*

8:30 Pittsburgh – A World Center of Water Resources Management Projects and Opportunities

*Werner Lohlein, P.E., Chief, Water Management Branch Operations Division, Pittsburgh*

*District of the Army Corps of Engineers*

9:15 The Future of Pittsburgh’s Water Quality Management and Regulation

*Dr. Stanley States, PhD., P.E., Water Quality Manager, Pittsburgh Water and Sewer Authority*

9:45 The River Alert Information Network - Safeguarding Pittsburgh’s Water Supply

*Thomas McCaffrey, Pennsylvania Department of Environmental Protection*

10:15 –10:30 Break

10:30 Treatment of Marcellus Shale Flowback Using Acid Mine Drainage Treatments

*Radisav Vidic, Ph.D., Professor and Chair, Civil Engineering, University of Pittsburgh.*

11:00 Marcellus Hydrofracture Flowback and Wastewater Treatment, Recycle, and Disposal Technologies

*Timothy Keister, Chief Chemist/President, ProChem Tech International, Inc.*

11:30 Looking Towards the Future of Marcellus Shale Exploration

*Dr. Michael Arthur, Ph.D., Professor, Pennsylvania State University and Co-Director,*

*Marcellus Initiative for Outreach and Research.*

12:00 –12:45 Lunch

12:45 Emergency Water Response: Transitioning from Short-Term Needs to Long - Term Viability

*Ronald Cross, P.E, Cardinal Resources LLC*

1:15 H2Opportunity: An Assessment of Southwestern Pennsylvania’s Water Sector

*Jerry Paytas, Ph.D., GSP Consulting*

1:45 - 2:00 Break

2:00 Water Innovation Opportunities in Southwestern Pennsylvania

*Dr. Jean VanBriesen, PhD., Professor, Department of Civil and Environmental Engineering at Carnegie Mellon University*

2:30 – 3:45 Pittsburgh Regional Water: Protecting and Utilizing our Greatest Asset

Panelists:

*Timothy Prevost, P.E., ALCOSAN Manager of Wet Weather Programs*

*Gregory Scott, P.E., Region 2 Governor of the American Society of Civil Engineers*

*Curtis Fontaine, P.E., Chair of Southwestern PA American Water Works Association*

*David Kaufman, P.E., VP Engineering, PA American Water*

*Paul T. Rice, Director, Municipal Market and Product Portfolio, Siemens Water Technologies*

*Mark Poole, P.E., Senior Project Manager, Wade Trim*

3:45 - 4:15 Q&A / Forum Discussion / Adjourn

## **1.2 Event Speakers**

### **Werner Lohlein, Pittsburgh District of the Army Corp of Engineers**

#### ***Pittsburgh –A World Center of Water Resources Management Projects and Opportunities***

Werner C. Loehlein, P.E. is the Chief of the Water Management Branch, Operation Division. He received a BS degree in 1974 and a MS degree in 1977 in Civil Engineering from the University of Pittsburgh.

Beginning as a summer engineer aide in 1972, Mr. Loehlein has worked his entire career for the Pittsburgh District in Water Resources Engineering. Werner began his career by performing the hydrologic analysis of several floods including the June 1972 “Hurricane Agnes” and July 1977 “Johnstown” Floods. In the late 1970s, he performed the hydrologic analysis for several Flood Insurance, Flood Plain Information and Water Supply Potential studies. In March 1991, Werner began in his current position and has responsibility for planning, organizing and directing the District’s water control activities of 17 reservoirs, water quality program, and hydro-meteorological gage network.

Werner has published 26 technical papers and made over 200 technical presentations on a wide range of water resources engineering topics. He is heavily sought out as a public speaker and by the media. He is recognized as one of the Corps’ Water Management Subject Matter Experts.

### **Ronald G. Bargiel, Pennsylvania American Water Company and Gina**

#### **Cyprych, Pittsburgh Water and Sewer Authority**

#### ***The River Alert Information Network –Safeguarding Pittsburgh’s Water Supply***

Ronald is the Water Quality Manager at PAWC for the past 21 years. Prior to his time at PAWC he worked for CONSOL Energy for 13 years focusing on environmental quality control.

His professional background includes: Spectroscopy Society of Pittsburgh, Society for Analytical Chemists, Pittsburgh Conference on Analytical Chemistry (BOD & President designate 2013), AWWA Member, PA certified waterworks operator, and the River Alert Information Network (Board Member).

Gina Cyprych is a Microbiologist for the Pittsburgh Water and Sewer Authority. Gina has been employed by PWSA for the past six years. Prior to this, Gina attended Penn State University.

The River Alert Information Network (RAIN) is a regional Source Water Protection (SWP) program that will implement a continuous on-line river monitoring system to better ensure the protection of public health and drinking water across the region.

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**Stanley States, Pittsburgh Water and Sewer Authority**

***The Future of Pittsburgh's Water Quality Management and Regulation***

Stanley States is the Director of Water Quality and Production for the Pittsburgh Water and Sewer Authority (PWSA). Stanley has been employed by PWSA for the past 34 years. Stanley has an MS in Forensic Chemistry and a Ph.D. in Environmental Biology from the University of Pittsburgh. In addition to his other duties, Stanley currently teaches a graduate level course in Environmental Microbiology at the University of Pittsburgh School of Engineering.

**Radisav D. Vidic, University of Pittsburgh**

***Looking Towards the Future of Marcellus Shale Exploration***

Radisav D. Vidic, Ph.D., P.E., is William Kepler Whiteford Professor of Environmental Engineering and Chairman of the Department of Civil and Environmental Engineering at the Swanson School of Engineering, University of Pittsburgh. Dr. Vidic holds a BS in Civil Engineering from the University of Belgrade (1987) and received his graduate education in Civil and Environmental Engineering from the University of Illinois (M.S., 1989) and University of Cincinnati (Ph.D., 1992).

His research efforts focus on advancing the applications of surface science by providing fundamental understanding of molecular-level interactions at interfaces, development of novel physical/chemical water treatment technologies, water management for Marcellus shale development, and reuse of impaired waters for cooling systems in coal-fired power plants.

Dr. Vidic published over 150 journal papers and conference proceedings on these topics. He received 2000 Professional Research Award from the Pennsylvania Water Environment Federation for his research accomplishments and dedication to the profession, was a Fulbright Scholar in 2003/04 and was elected by the Pittsburgh section of American Society of Civil Engineers as 2008 Professor of the Year.

**Michael A. Arthur, Pennsylvania State University**  
***Looking Towards the Future of Marcellus Shale Exploration***

Michael A. Arthur, a geochemist and sedimentary geologist, is a Penn State Professor of Geosciences and Co-Director of the Penn State Marcellus Center for Outreach and Research (MCOR). He is a past Department Head in Geosciences and is a recipient of the L.L. Sloss Medal in Sedimentary Geology (Geological Society of America), the Francis P. Shepard Medal for Marine Geology (Society for Sedimentary Geology), the Wilson Awards for Research and Service in the College of Earth and Mineral Sciences, and is a Fellow of the American Association for the Advancement of Science, the American Geophysical Union, and the Geological Society of America. His research interests include investigating the nature of climates and oceans of the past and the causes of past global change. He has long focused on studies of modern marine environments characterized by organic-carbon rich sediment deposits and the origin and nature of ancient "black shales." The geology and geochemistry of the Devonian Marcellus Shale is a current research emphasis through the efforts of the Appalachian Basin Black Shales Group at Penn State.

**Timothy Keister, ProChemTech**  
***Marcellus Hydrofracture Flowback-Treatment, Recycle, and Disposal Technologies***

Timothy Keister, CWT, holds a B.Sc. in Ceramic Science from Penn State and is the Chief Chemist/President at ProChemTech International, Inc. He is an Association of Water Technologists Certified Water Technologist, Fellow of the American Institute of Chemists, Senior Member of the American Institute of Chemical Engineers, and member of the American Society of Heating, Refrigeration, and Air Conditioning Engineers, American Chemical Society, and the Water Environment Federation. Timothy's career in the environmental/technical water field began at Brockway Glass Company in 1973, where he was responsible for management of water and wastewater activities at 38 manufacturing plants across the country. In 1987 he founded ProChemTech, which specializes in innovative water and wastewater management technology with emphasis on treatment/recycle and zero discharge projects. Some spare time is also devoted to activities as Chairman of the Brockway Area Sewerage Authority and Technical Director of the Toby Creek Watershed Association.

**Ronald Cross, Cardinal Resources*****Emergency Water Response: Transitioning from Short-Term Needs to Long-Term Viability***

Mr. Cross' background includes a Bachelor of Science degree in chemical engineering from the University of Pittsburgh and professional engineering licensure in North Carolina, Ohio, and Pennsylvania. He has twenty years of experience in the environmental field with a focus on water and wastewater treatment. His experience includes all aspects of wastewater treatment projects, including treatability testing, pilot testing, engineering design, construction oversight, plant start-up, operator training, and troubleshooting. Mr. Cross also has been instrumental in the development and testing of mobile water treatment systems, including Cardinal Resources' patented Red Bird Systems.

**GSP Consulting Corporation*****H2Opportunity: AN Assessment of Southwestern Pennsylvania's Water Sector***

GSP Consulting Corp. enables the growth of organizations, companies, communities, and economies through a suite of innovative government, business and economic development consulting services. Founded in February 2001, GSP relies on a revolutionary business model to provide world-class support and value at a responsible price. With this principle as its guiding mission, GSP Consulting today is a full-service consulting firm headquartered in Pittsburgh, PA with offices and partners across the country including Harrisburg, PA; Philadelphia, PA; Washington, D.C.; Minneapolis/St. Paul, MN; and Columbus, OH. The firm currently employs 26 people.

**Jeanne VanBriesen, Carnegie Mellon University *Water Innovation***

***Opportunities in Southwestern Pennsylvania*** Dr. VanBriesen received her M.S. and Ph.D. in Civil Engineering from Northwestern University. She is currently a Professor in the Department of Civil and Environmental Engineering at Carnegie Mellon University with a courtesy appointment in the Department of Biomedical Engineering. She recently served on the National Research Council study on water quality in southwestern Pennsylvania (<http://www.nap.edu/catalog/11196.html>) and was named director of an urban water quality center launched at Carnegie Mellon in 2005 (<http://www.ce.cmu.edu/~wquest/>). Her research interests include biogeochemistry of recalcitrant organics (including chelates and PCBs), thermodynamic analysis of biological systems, and detection and quantification of pathogenic organisms in drinking water systems.

***Panel Discussion –Pittsburgh Regional Water: Protecting and Utilizing our Greatest Asset*****Curtis Fontaine, American Water Works Association**

Curt is the current Chair-Elect for the American Water Works Association's Pennsylvania Section. Also, he serves as the Western Program Chair for the Water Works Operators' Association of Pennsylvania. He is a member of The University of Pittsburgh –Institute of Politics, Water Task Force Technical Advisory Committee and the Westmoreland County Conservation District / Penn State Cooperative Extension, Water Quality Advisory Board.

Curt earned his Bachelor of Science and Master of Engineering Degrees in Environmental Engineering from the Pennsylvania State University, University Park, PA. He is a licensed Professional Engineer in the Commonwealth of Pennsylvania and a Pennsylvania Department of Environmental Protection certified waterworks and wastewater operator. He is a veteran of the U.S. Army and the Pennsylvania National Guard. Curt is employed by the Municipal Authority of Westmoreland County where he serves as the Operations Manager, Engineering.

**David R. Kaufman, Pennsylvania American Water Company**

Mr. Kaufman is employed by American, as Vice President-Engineering for Pennsylvania American Water Company (PAWC). Dave managed the water operations in PAWC's Northeast operations, which included

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water and wastewater operations in Wilkes-Barre/Scranton and the Poconos, where he had overall responsibility for production, treatment, and distribution system operations.

Mr. Kaufman has more than 30 years of experience in the fields of civil/environmental engineering and operations administration of water and wastewater systems. His career has involved all aspects of water supply, water and wastewater treatment, water distribution, and wastewater collection systems.

Dave is a graduate of Penn State University with a Bachelor of Science degree in Civil Engineering and became a registered professional engineer in 1980. Dave has served on the AWWA Pennsylvania Section – Water Utility Council, and the Board of Directors for the National Association of Water Companies (NAWC) and the Pennsylvania Chapter of the NAWC.

#### **Mark D. Poole, Wade Trim, Inc.**

Mark Poole is the Regional Wastewater Treatment Practice Manager and Senior Associate in Wade Trim's Pittsburgh Office. He has over 25 years of experience representing local and regional municipal clients in the areas of wastewater treatment and water supply management. Projects have included water and wastewater planning studies, regional economic development studies, feasibility studies, wastewater treatment plant design, wastewater collection system design, water treatment plant and water distribution system design, infiltration/inflow analysis, rate studies, inter-municipal agreements, industrial pretreatment programs, construction management and project budgeting and funding assistance. Wade Trim, Inc. is an employee-owned consulting engineering firm providing wet weather and wastewater engineering, civil engineering, planning, surveying, operations assistance, landscape architecture and environmental science services through 22 offices nationwide.

**Timothy Prevost, ALCOSAN** Tim Prevost began his career with ALCOSAN in July 1997 after working for ALCOSAN as an engineering consultant. As a civil engineer in the Engineering Division at ALCOSAN, Tim analyzed the ALCOSAN Service area through flow monitoring and modeling while managing capital contracts. In January 2003, Tim was promoted to his current position of Manager of Wet Weather Programs within the Regional Conveyance Division. Tim is responsible for the engineering oversight for projects related to the 95 miles of interceptor lines and pump stations as well as Consent Decree compliance from the EPA to address combined and sanitary sewer overflows. Tim oversees a staff of five and numerous engineering consulting firms. Tim received his Bachelor of Science Degree in Civil Engineering Technology from Rochester Institute of Technology and earned his Professional Engineering license in 2002. Tim has presented papers on the subject of ALCOSAN internationally. Tim and his wife Kim reside in Moon Township with their two daughters Linnea and Keira.

**Paul T. Rice, Siemens Water Technologies** Paul T. Rice is Director, Municipal Market and Product Portfolio for Siemens Water Technologies. In his role, he focuses on global and regional issues facing the Municipal Water and Waste Water marketplace, and directs Siemens in the development of new technologies and answers for these challenges. Mr. Rice has a Bachelors of Science in Chemical Engineering from Washington State University, and a Master of Science in Industrial Administration from Purdue's Krannert School of Business.

**Greg Scott, Region 2 Governor of the American Society of Civil Engineers** Over the past 18 years, Gregory Scott has managed the design and construction of civil municipal, water and wastewater projects for communities throughout western Pennsylvania. Employed by Buchart Horn Inc., he participates in comprehensive facilities planning; coordinates design of collection, transmission, storage, distribution and treatment systems; implements combined sewer overflow programs; and manages all phases of civil municipal, water and wastewater construction for his clients. A former chairman of the ASCE Pittsburgh Chapter of the Environmental and Water Resources Institute and Pittsburgh Section, Greg currently serves as a Region 2 Governor of ASCE. In 2005 he received the Pittsburgh Section's Young Civil Engineer of the Year award and in 2008 the Pittsburgh Section's Civil Engineer of the Year award. A registered Professional Engineer, Mr. Scott earned his Bachelors in

Environmental Engineering Technology from Penn State University and his Masters in Civil Environmental Engineering from the University of Pittsburgh.

### 1.3 Event Sponsors

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Engineering, Inc.**  
Civil Engineers and Surveyors

**Many thanks to the generous financial support our sponsors contributed towards making this event a success.**

## **2 Workshop Report Results—Participant Information**

### **2.1 Event Attendees:**

The following organizations had representatives attend this workshop:

ACF Environmental (2)  
Alcosan  
Allegheny County Health Department (2)  
Almes Enterprises, LLC  
AMEC (2)  
Aquatech  
ASCE  
Cardinal Resources  
CDM (2)  
Chester Engineers  
CMU (13)  
Collective Efforts, LLC  
Cosmos Technologies Inc  
FedEx Ground  
Friends of the Pittsburgh Urban Forest  
GAI Consultants, Inc  
Gannett Fleming, Inc (3)  
Gibson-Thomas Engineering Co., Inc  
Glenn Engineering  
Green Tree Borough  
GSP Consulting  
Hatch Mott McDonald (3)  
HDR Engineering, Inc.  
Highmark  
HRV Conformance Verification Associates  
JCS Engineering  
Johnston Engineering  
Kurtanich Engineers & Associates, Inc.  
Lennon, Smith, Souleret Engineering, Inc (2)  
Malcolm Pirinie  
McCormick Taylor, Inc  
Michael Baker Jr., Inc  
Moon Township  
Nine Mile Run Watershed Association  
PA American Water (4)  
PBS&J  
Pennsylvania Department of Environmental Protection  
Pennsylvania Environmental Council  
Pennsylvania State University  
Pittsburgh District of the Army Corps of Engineers



- Pittsburgh United
- Pittsburgh Water and Sewer Authority
- ProChem Tech International, Inc
- Rachel Carson Homestead Association
- Sci-Tek Consultants, Inc. (4)
- Siemens Water Technologies (2)
- Southwestern PA American Water Works Association
- Steel Valley Council of Governments
- Sustainable Pittsburgh (2)
- University of Pittsburgh
- Urban Engineers
- Wade Trim

A total of 84 people attended the event. Of the 84 attendees, 50 were from the private sector, 7 were from nonprofit institutions, 8 were from the government sector and 15 were from an educational institution.

## 2.2 Business Needs Survey Regarding Energy Tracking

### 1. In your opinion, what are some ways a focus on water technology, engineering and policy help local engineers, researchers, manufacturers and designers to become more innovative?

- Collaboration \*\*\*\*\* (6)
- Create public awareness \*\*\*\*\* (4)
- Education \*\* (2)
- Export the technology \*\* (2)
- Consolidate water, wastewater, and storm-water authorities
- Provide incentives

### 2. In your opinion, what is the region’s most pressing priority in terms of getting a water technology and water engineering sector cluster going in our region? What are your reasons for this view?

- Improve efficiency through cooperation, synergies, and a regional approach \*\*\*\*\* (5)
- Replace aging infrastructure \*\*\* (3)
- Marcellus Shale Development
- Funding for technology

### 3. What strategy should the region pursue to foster a water technology and water engineering sector cluster?

- Take a regional approach \*\*\*\* (4)
- Encourage collaboration \*\*\* (3)
- Maintain the current course \*\* (2)
- Have one “clearing house” organization

Attract new industry

**4. What are barriers to the adoption of water-related innovation solutions? What can be done to overcome those barriers?**

Local politics working against a regional strategy \*\*\*\*\* (6)  
Investment in new experimental technology \*\*\*\*\*(4)  
Public apathy \*\*\* (3)  
Pennsylvania's Report Card

**5. What are some new breakthroughs in terms of technologies, policies, or information that you think are critical to achieving broader demand for water technology solutions?**

Technologies that create additional revenue \*\*(2)  
Higher energy costs and water costs  
Regional policies  
Horizontal well drilling  
Desalination methods

**6. What are some resources that the organizers should work to bring to the region in order to better serve your and the region's interests related to water technology cluster?**

Collaborative opportunities \*\*\* (3)  
Grants \*\*(2)  
Region already has the resources \*\*(2)  
New technology and its adoption results  
Political policy champions

**7. What motivated you to participate in today's event?**

General interest \*\*\*\*\*(4)  
Speakers \*\*\* (3)  
Marcellus Shale presentation \*\*\* (3)  
Regional water issues \*\*(2)  
Research

**8. What expectations did you have for today's event? Were these expectations met?**

6 Yes  
1 No

Informative and engaging \*\*\*\*\* (5)  
Meet others  
Did not identify future strategies

**9. What new information did you learn and/or new connections did you make at this workshop?**

Technical information about Marcellus Shale and Frac water      \*\*\*\*\* (7)  
New developments & trends in SWPA      \*\* (2)  
New Techniques      \*\* (2)  
History

**10. What suggestions do you have for improving events like this one in the future?**

None – Very good event      \*\* (2)  
More students      \*\* (2)  
Mix up the format more  
More materials in advance  
More time for questions  
More speakers like Dr. Vidic & Dr. Van Briesen