Our 10<sup>th</sup> Anniversary



# 

"Reclaiming our Past - Shaping our Future"

> August 12 - 14, 2008 Ramada Conference Center State College, PA

www.treatminewater.com

#### Welcome

Dear 2008 Conference Attendee,

On behalf of the Planning Committee, welcome and thanks for joining us.

This marks our 10th Anniversary. You've likely noticed the conference name is a bit longer this year. Commemorating our 10th, we've added a section featuring Pennsylvania's Coal Mining Heritage and its preservation.

The traditional focus of Abandoned Mine Reclamation (AMR) continues as it includes presentations aimed at everyone from grassroots volunteers to seasoned reclamationists. Both technical and "timely topics" are part of the fare.

The Coal Mining Heritage (CMH) segment aims to help preserve Pennsylvania's rich mining history and heritage, which many agree is largely being lost to the sands of time. We've

often observed an overlap of interests between the reclamationists and the preservationists: this served as the main inspiration for CMH's inclusion.

The conference website, www.treatminewater.com, serves as an integral companion to the conference itself. For example, presentation abstracts, presenter biographies, and other supplemental materials are permanently archived there to serve as a resource. The website serves as the conference's year to year memory.

Networking and relationship-building are vital to our reclamation work. We've structured the conference to have long breaks, displays, meals encouraging interaction, and a Wednesday evening mixer to help break the ice.

Renowned guitarist Ken Bonfield, who shares our environmental and preservation interests, has kindly volunteered to provide the entertainment after the mixer. His soulful music will stir your emotions—it's a concert not to be missed!

Finally, we've provided a couple of "extras" -a bus tour featuring abandoned mine problems and solutions on Monday prior to the official beginning of the conference and a half day writing workshop on Wednesday.

Have a great and productive time and... Let the conference begin!

Andy McAllister, Conference Coordinator



Visit a variety of mine drainage treatment sites and a AMD impacted area called "Death Valley". This photo is of a semi-active treatment system that's on the tour. Bus departs 11:30 AM from the Conference Center. Wear old clothes and walking shoes.



Our 10th Anniversary





Foundation for Pennsylvania Watersheds

# Our sponsors

- \* Pennsylvania Department for Environmental Protection Office of Mineral Resources Management & Bureau of Watershed Management
- \* Foundation for Pennsylvania Watersheds
- \* US Office of Surface Mining Reclamation and Enforcement
- \* HDR, Inc. (corporate)
- \* Ionic Water Technologies, Inc. (corporate)



# 2008 Planning Committee

- \* Andy McAllister & Bruce Golden Western PA Coalition for Abandoned Mine Reclamation, Greensburg (lead organization) \* Robert Hughes & Michael Hewitt Eastern PA Coalition for Abandoned Mine Reclamation, Shavertown (co-lead organization) \* Arielle Avishai, US Office of Surface Mining & Reclamation Enforcement, Pittsburgh \* Shaun Busler, Stream Restoration Incorporated, Mars \* Donna Carnahan, PA DEP NonPoint Source Section, Harrisburg \* Beth Kern, PA DEP Bureau of District Mining Operations, Ebensburg \* Tim Gourley, Dietz Gourley Consulting, State College \* Tom Grote, Stream Restoration Incorporated, Mars \* Bernie Hoffnar, Six Mile Run Watershed Association, Defiance \* Evelyn Hovanec, Coal and Coke Heritage Center, Uniontown \* Mark Killar, Western PA Conservancy, Freshwater Conservation Program, Blairsville \* Mike Korb, PA DEP Bureau of Abandoned Mine Reclamation, Wilkes Barre \* Irwin Marcus, Indiana University of Pennsylvania, Retired, Indiana \* Pam Meade, Cowanshannock Watershed Association \* Theresa McDevitt, Indiana University of Pennsylvania, Special Archives, Indiana
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# Tuesday - Schedule

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	7:00 - 8:30	Registration	7:00 - 8:30	SISdon
	8:30 - 8:45	Welc	come	SVI SVI
	8:45 - 9:30	<i>E. Cavazza</i> : An Update on the Development Selection Guidelines for SMCRA Title IV Fund	t of Mine Drainage Treatability and Project ed Projects	
	Track	New Approaches	Timely Topics	
	9:30 - 10:15	<i>N. Wolfe</i> : Optimizing Oxic Limestone-based AMD Treatment	<i>D. Sammarco, A. Dehoff</i> : Interbasin Transfer of Minepool Water	5
	10:15 - 10:45	Break 10	9:15 - 10:45	
N	10:45 - 11:30	<i>R. Beam , B. Braverman</i> : The Kalp and Melcroft AMD Abatement Projects	B. Means : AMD Treatability	
sda	11:30 - 12:15	<i>J. Dietz</i> : Activated Iron Solids and Aeration Approaches for AMD Treatment	<i>J. Pizarchik</i> : ABS Forfeiture Site Discharges: Treatment Opportunities and Challenges	
lue	12:15 - 1:30	Lunch in Atrium 12:15 - 1:30		
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-	Irace	New Approaches	limely lopics	6
	1:30 - 2:15	New Approaches <i>M. Crittenden</i> : In-stream Limestone Dosing	<i>D. Johnson, D. Hamilton</i> : ARRI at Jennings Environmental Center	
	1:30 - 2:15 2:15 - 3:00	<i>M. Crittenden</i> : In-stream Limestone Dosing <i>W. Burgos</i> : Low-pH Fe(II) Oxidation Can Improve Passive Treatment of AMD	<i>D. Johnson, D. Hamilton</i> : ARRI at Jennings Environmental Center <i>S. Wilson</i> : SMCRA Title IV: Public Comments and DEP Response	
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	1:30 - 2:15 2:15 - 3:00 3:00 - 3:30 3:30 - 4:15 4:15 - 5:00	New Approaches   M. Crittenden : In-stream Limestone Dosing   W. Burgos : Low-pH Fe(II) Oxidation Can   Improve Passive Treatment of AMD   Break 3:   M. Strager : Watershed Model for   Evaluating AMD Treatment Scenarios   R Hornberger, B. Leavitt : Mine Pool   Mapping	D. Johnson, D. Hamilton : ARRI at Jennings   Environmental Center   S. Wilson : SMCRA Title IV: Public   Comments and DEP Response   COO - 3:30   A. Deal, L. Lichvar : The Stonycreek River   Watershed Reassessment Project   P. Milavec : Operations & Maintenance of   AMD Treatment Systems	- 7
	1:30   - 2:15   2:15   - 3:00   3:00   - 3:30   3:30   - 4:15   4:15   - 5:00   5:00   - 5:30	New Approaches   M. Crittenden : In-stream Limestone Dosing   W. Burgos : Low-pH Fe(II) Oxidation Can   Improve Passive Treatment of AMD   Break 3:   M. Strager : Watershed Model for   Evaluating AMD Treatment Scenarios   R Hornberger, B. Leavitt : Mine Pool   Mapping	D. Johnson, D. Hamilton : ARRI at Jennings   Environmental Center   S. Wilson : SMCRA Title IV: Public   Comments and DEP Response   coo - 3:30   A. Deal, L. Lichvar : The Stonycreek River   Watershed Reassessment Project   P. Milavec : Operations & Maintenance of   AMD Treatment Systems	

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# Tuesday - Synopses

8:45 -	An Update on the Development of Mine Drainage Treatability and Project Selection Guidelines for SMCRA Title IV Funded Projects	
9:30	Eric E, Cavazza, P.E., PA DEP Bureau of Abandoned Mine Reclamation (BAMR)	
	PADEP-BAMR in cooperation with OSM recently developed draft guidelines for treating AMD and selecting projects for funding provided through the recently reauthorized and amended SMCRA. To gain public comment, the draft document "Mine Drainage Treatability and Project Selection Guidelines" was recently presented to a focus group. These guidelines, still in development, will be discussed.	
	Ontimizing Oxic Limestone-based AMD Treatment	
9:30	Neil Wolfe, Hedin Environmental, Inc.	
10:15	An update on the ongoing research project "Limestone Upflow Pond Optimization" funded through a DEP Innovative Treatment Grant will be presented. Monitoring of existing systems and operation of two pilot-scale (30 ton) treatment systems has produced some very interesting results that will lead to the improvement of oxic limestone-based systems.	
	Interbasin Transfer of Minepool Water Dan Sammarco, PA DEP Bureau of Abandoned Mine Reclamation Andrew Dehoff, Susquehanna River Basin Commission	_
	The Department of Environmental Protection (DEP) and the Susquehanna River Basin Commission (SRBC) have entered into a unique partnership. What that partnership will accomplish is to provide more clean water to the West Branch of the Susquehanna River in the process of treating and controlling water from a polluted abandoned underground mine pool. An obsolete, inefficient AMD treatment facility (located in the Ohio basin) will cease operations once a modern facility is relocated several miles away at the headwaters of the West Branch (in the Susquehanna basin), providing the equivalent of 10 million gallons of clean water per day. The DEP will con- struct the facility while SRBC will take over the annual operations and maintenance costs.	Tuesda
10:45 - 11:30	The Kalp and Melcroft AMD Abatement Projects <i>Richard Beam</i> , <i>P.E.</i> , <i>PA DEP Bureau of Abandoned Mine Reclamation (PA DEP BAMR)</i> <i>Beverly Braverman</i> , <i>Mountain Watershed Association</i> An innovative mine drainage abatement project involved two abandoned underground mine sites having sig- nificant water quality and public health and safety problems. In-seam directional drilling was used to control the mine pools and collect mine discharges. Directional drilling is used extensively in underground mining applica- tions , but this was a first for a PA AML site to convey and control abandoned mine pool discharges. Directional drilling relocated discharges to areas close to the proposed (phase 2) treatment systems. About 30 feet of mine pool hydraulic head was gradually and permanently removed at both project sites. Directional drilling provided both a superior mechanism to address and reduce the blowout potential while providing a lower cost, minimal disturbance alternative to the construction of overland mine drainage pipelines.	У
	AMD Treatability	
	Guidelines for selecting AMD remediation and abatement projects through SMCRA Title IV will place "treat- ability" requirements on the treatment technologies employed. To be funded, the technologies chosen for a given discharge should have a reasonable expectation of dependability during the project's design lifetime. Scoring for 3 separate parameters of "proven", "reliable" and "predictable" will collectively rate a given technology's treatability merits in the context of the discharge it would be treating. Passive treatment techniques will continue to be eligible for funding, although will generally fare best for less challenging discharges. "Treatability" is one of several scoring categories that are considered in the draft document "Mine Drainage Treatability and Project Selection Guidelines", as discussed in the earlier presentation by Eric Cavazza.	

# Tuesday - Synopses

11:30	Activated Iron Solids and Aeration Approaches for AMD Treatment Jon Dietz, Ph.D., Iron Oxide Technologies, LLC
12:15	Two new innovative approaches which more effectively allow the treatment of high flow AMD discharges are discussed: Activated Iron Solids (AIS) treatment; and mechanical aeration. AIS exploits properties of iron particles (catalytic surface chemistry sorption/oxidation process) as they precipitate in ways that make the process much quicker and effective than traditional methods. Mechanical aeration of AMD increases dissolved oxygen necessary in the treatment of AMD and, more importantly, increases the pH through carbon dioxide removal.
	Alternate Bonding System Primacy Bond Forfeiture Discharges: Treatment Opportunities and Challenges Joseph Pizarchik, Director, PA DEP Bureau of Mining and Reclamation
	PADEP is facing new challenges resulting from a court decision. Affected are active mining sites having acid mine drainage and which have forfeited bonds which used the now defunct alternate bonding system (ABS). These AMD discharges are now the responsibility of DEP. The court ruling mandates treatment of AMD for each ABS forfeiture site. Though in principle this may appear to be a good ruling, it has practical consequences which diminish DEP's comprehensive efforts in addressing AMD. However, this situation has bred new opportunities in which citizens may help DEP to address these ABS legacy discharges. Find out how.
1:30	In-stream Limestone Dosing Malcolm Crittenden, PA DEP Bureau of District Mining Operations
2:15	In-stream Limestone Sand Dosing (ILS) can be an inexpensive method to add alkalinity to a stream system. Limestone Sand Dosing of acidified streams has been done with varying success in the Appalachian highlands for the last two decades. Other (in-stream or side-stream) options which raise stream alkalinity have been advocated but do not typically enjoy the cost-benefits of ILS. The Standard Practices of ILS will be reviewed along with the many site factors which affect results.
	ARRI at Jennings Environmental Center D. Johnson, Jennings Environmental Education Center, PA DCNR David Hamilton, U.S. Office of Surface Mining
	The Appalachian Regional Reforestation Initiative (ARRI) is a cooperative effort spearheaded by OSM encour- aging restoration of high quality forests on reclaimed surface mines using a relatively new method called the Forestry Reclamation Approach. A modest-sized demonstration project was recently commenced at the Jennings Environmental Education Center as an experimental model to showcase the ARRI approach to mine reclamation. This presentation will discuss the initial construction and early success of the project.
2:15	How a better understanding of low-pH Fe(II) oxidation can improve passive treatment of acid mine drainage <i>William D. Burgos</i> , <i>Ph.D.</i> , <i>Penn State University</i>
3:00	A naturally observed biological phenomenon called low-pH Fe(II) oxidation is the focus of a research project that may lead to significantly lower costs for treatment of an important class of AMD. In traditional passive treatment of low pH water having high iron concentrations, an often difficult and problematic first step is to dissolve limestone, raising the pH so ferrous iron can better react with oxygen. However, certain bacteria may be able to oxidize ferrous iron at low pH, enabling a much less problematic way to dissolve limestone <i>after</i> the iron has been oxidized and removed. This presentation describes those research efforts.
	SMCRA Title IV: Public Comments and DEP Response Sue Wilson, PA DEP Citizens Advisory Council
	Review DEP's response to key comments received on expenditure of the increased funds that will be available to the Commonwealth for abandoned mine reclamation under the reauthorized Federal Surface Mining Control and Reclamation Act (SMCRA). A key area of concern is the decision to set aside funds for mine drainage abatement and treatment, and the appropriate level, which must be weighed against the need to restore sites that impact the health and safety of the Commonwealth's citizens.

Tuesday

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# Tuesday - Synopses

3:30 - 4:15	<b>An Application of a Hydrologically Networked Watershed Model for Evaluating AMD Treatment Scenarios</b> <i>Michael P. Strager</i> (presenting), J. Todd Petty, Brady Gutta, Jennifer Fulton, Richard Herd, James Stiles, Julie Svetlik, and Paul Ziemkiewicz	
	The West Virginia Water Research Institute has developed a GIS-based decision support system to aid in restora- tion planning of waters degraded by AMD. The system integrates various chemical and ecological modeling components using the popular GIS platform ArcMap. With it the user is able to compare and explore treatment options and locations for building AMD restoration plans that display, among other things, costs and ecological benefits. It's possible to visually explore outcomes downstream of various treatment/restoration scenarios. The result is a spatially explicit watershed modeling framework for quantifying stream conditions at multiple scales.	
	The Stonycreek River Watershed Reassessment Project Amanda Deal and Len Lichvar, Somerset Conservation District	
	The Stonycreek River watershed in Somerset and Cambria Counties is now the subject of a watershed "re-assessment", measuring the effects of nearly \$10 million in project funding since an original 1997 USGS assessment of AMD discharges within the watershed. Directly resulting from AMD remediation projects, the Stonycreek River was reversed from net acidic to net alkaline conditions with over fifteen miles of fisheries restored. The current reassessment is developing a baseline data set to extend the previous study area. The project will quantify water quality changes, identify new projects, and complete the restoration efforts that began over fifteen years ago. Significant results of the study will be presented.	
4:15 -	Mine Pool Mapping Roger Hornberger, P.G.	T
5.00	The Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR) is conducting a study to provide information for promoting the reuse of the mine water resources of the Anthracite Region. Employing a geospatial approach to studying these minepools, numerous layers of GIS data, including the minepool locations, water quality and quantity, locations of barrier pillars and flow paths of the minepools, are being developed. Over a hundred underground mines contribute to the many tens of billions of gallons of water stored in minepools, some of which may someday be used for beneficial use.	lesday
	<b>Bruce Leavitt</b> , P.G. The flooding status of underground mines in Western Pennsylvania has a significant impact on the water quality of the mine drainage that flows from these mines. The basics of mine flooding will be presented including a defi- nition of common mine flooding terms. Water quality coming from the Pittsburgh seam has been found to change with time depending on the extent of inundation and the location of the discharge with respect to the predominant source of ground water recharge. Maps will be presented showing the flooding of the below drainage coal mines in the Pittsburgh seam. Water quality and discharge volume distribution will also be shown on a regional basis.	1
	<b>Operations &amp; Maintenance of AMD Treatment Systems</b> <b>Pam Milavec</b> , PA DEP, Bureau of Abandoned Mine Reclamation	
	This presentation will provide an update on the current thinking of AMD treatment system Operation, Mainte- nance and Replacement (OMR). Topics of discussion include the role of the project sponsor and local partners, the role of funding agencies and the current efforts within DEP to provide funding for OMR.	
	t's the conference's permanent record and provides valuable extra	e. S
t	o the presentations, useful for future reference.	

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# Wednesday - Schedule

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	7:00 - 8:00	Registration 7:00 - 8:00		sisdor
	8:00 - 8:15 Track	W Abandoned Mine Reclamation Mainstream Presentations	elcome Supplemental Topic	
	8:15 - 9:00	M. Dunn : The Watershed Model is Working	g for AMR	
	9:00 - 9:45	<i>T. Schmidt</i> : Synopsis of Innovative AMR Materials and Technologies	<i>T. Kerr</i> : Sponsor Presentation: HDR, Inc.	
	9:45 - 10:30	<i>R. Herd, T. Petty</i> : Optimizing Resources for Restoring AMD Impaired Watersheds in West Virginia	<i>T. Tsukamoto</i> : Sponsor Presentation: Ionic Water Technologies, Inc.	9
	10:30 - 11:00	Breat	r 10:30 - 11:00	
	11:00 - 11:45	<i>S. Smith</i> : The Industrial Legacy of Wales –	from Blight to Asset	
11:45 - 12:30 <i>S. Roberts</i> : Abandoned Mines – the Seinfeldian Side of Pennsylva		Idian Side of Pennsylvania's Mining Herita	ige	
	12:30 - 1:30	Lunch in Atr	ium 12:30 - 1:30	
	1:30 - 1:45	Welcome to Coal Min	ing Heritage Attendees	
)	Track	Mining Heritage Presentations	Supplemental Topic	10
•	1:45 - 2:30	<i>R. Lighty</i> : Pennsylvania's Historical Annual Mining Reports, 1870-Present	T. Tsukamoto: Overviews of TwoAdvanced AMD TreatmentTechnologies: a Semi-passive SulfateReducing Bioreactor and the RotatingCylinder Treatment System™	Jorkshop /riting
	2:30 - 3:15	J. Enman : Pennsylvania Patch Towns	<i>J. Quaranta</i> : Coal Impoundment Location and Warning System	ch W
	3:15 - 3:45	Break 3:1	5 - 3:45	un .
	3:45 - 4:30	<i>J.D. McAteer</i> : The Monongah Disaster and Mine Safety History	<i>C. Trumann, C. Webster, S. Lyons</i> : ACCWT in the Anthracite Region	OwerF
	4:30 - 5:15	<i>M. Auktakalnis</i> : Anthracite Region Tourist Mine Trio	<i>D. Freudenberger</i> : The Anthracite Heritage Alliance (AHA)	
	5:15 - 6:00	Free Time 5:15 - 6:00		
	6:00 - 8:00	Mixer with Heavy	Appetizers 6:00 - 8:00	
	8:00 - 10:00	Entertainment	8:00 - 10:00 <i>S ee page 11</i>	

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# Wednesday - Synopses

8:15 - 9:00	- The Watershed Model is Working for AMR   - Margaret Dunn, P.G., Stream Restoration, Inc.	
	Using the successes of the Slippery Rock Creek Watershed Coalition and success stories shared by the audience, this presentation examines how public-private partnerships initiated by grassroots movements across Pennsylva- nia illustrate and reaffirm how the watershed model is working to solve abandoned mine issues in Pennsylvania.	
9:00 -	Synopsis of Innovative AMR Materials and Technologies Terry W. Schmidt, P.E., Skelly and Loy, Inc.	
9:45	Treating Acid Mine Drainage requires the addition of alkalinity to neutralize the water. Most passive treatment systems use limestone. However, a variety of alternate and new materials may have advantages over traditional sources of alkalinity in treating mine drainage. Similarly, new techniques are under development to dispense treatment materials, improve treatment system operation, and reduce manpower needed to perform operation and maintenance, some of which rely on the natural forces of wind, water, and the sun. This presentation offers a glimpse of some of these materials and techniques.	
	Sponsor Presentation: HDR Inc. Thomas Kerr, Ph.D.	
	Tom Kerr will lead a conversation about an embryonic effort to discover ways to integrate, through creative link- ages, current successful AMR/AMD/brownfields activities with new, innovative ideas and improved technologies. Participation in this emerging effort is being sought from all possible stakeholders. Interesting things are already developing. Come to learn and to participate.	
9:45	Optimizing Resources for Restoring Acid Mine Drainage Impaired Watersheds in WV     Richard Herd, National Mine Land Reclamation Center   Todd Petty, Ph.D., West Virginia University	
- 10:30	A process to make objective decisions in optimizing resources to recover AMD impaired watersheds is presented. Recognizing the magnitude of AMD impairment often is too widespread to address in the traditional source by source treatment approach, restoration actions are being prioritized to produce the greatest ecological and eco- nomic benefits per unit cost. This process integrates various AMD treatment alternatives into a GIS-based deci- sion support system that quantifies the maximum possible ecological and economic outcomes.	
	Sponsor Presentation: Ionic Water Technologies, Inc. <i>Timothy Tsukamoto</i> , Ph.D, Ionic Water Technologies, Inc.	
	Ionic Water Technologies (IWT) specializes in treating impacted water. IWT's unique suite of products includes the patented Rotating Cylinder Treatment System <sup>TM</sup> (RCTS <sup>TM</sup> ), extensive expertise in sulfate reduction bioreactor construction and most recently, the application of Permanganate Passivation. The Rotating Cylinder Treatment System (RCTS) efficiently, effectively treats contaminated mine water. IWT's sulfate-reducing, semi-passive bioreactor is often the better choice over traditional bioreactor applications and alkalinity-based bioreactors. The Permanganate Passivation technology is applied at the source of acid generation to prevent the contact of sulfide mineral with air.	
11:00	The Industrial Legacy of Wales – from Blight to Asset	
- 11:45	Steve Smith, Head of Land Rectamation, Dept. for the Economy and Transport, Welsh Assembly Government, UK Wales has pursued a major program of land reclamation and environmental improvement for almost 40 years. The major priority has been the removal of physical hazards from coal mine waste placed on inherently unstable, steep valley slopes. Reclamation from other adverse features created by historic mining and other industries has also been a focus. Wales has benefited from the transformation of land previously despoiled into land which can support valu- able recreational and leisure pursuits, new habitats and an enhanced landscape. Coupled with preservation of his- torically significant structures, this reclamation has resulted in improved local economies and a benefit to tourism.	

Wednesday

# Wednesday - Synopses

11:45 -	Abandoned Mines – the Seinfeldian Side of Pennsylvania's Mining Heritage J. Scott Roberts, Deputy Secretary, PA DEP Office of Mineral Resources Management
12:30	If <i>Seinfeld</i> was a show about nothing, then the history of Pennsylvania's abandoned mines is a story about nothing. Mines close for many reasons but they are abandoned because of <i>nothing</i> – nothing done to reclaim the mine site, nothing done to restore the environment or, in some cases, nothing done to transition the community to a new future. Examining <i>the nothing</i> may not make us wiser but it does put our responsibility for the future into proper context. Besides, to paraphrase David McCullough, no harm's done to nothing by making it something someone would want to hear.
1:45	Workshop on Effective Writing: PowerPunch Writing1:45 - 5:00Peter Geissler, Ph.D.1:45 - 5:00
5:00	PowerPunch Writing for technologists and others focuses on how and why your words can make you rich (or poor)how experienced writers develop empathy for readers to shape content, structure, and toneand how good writers have internalized the Big Ten habits and Big Six techniques that are guaranteed to bring order out of chaos by creating documents that are <i>clear</i> , <i>concise</i> , <i>and purposeful</i> . Concepts are supported fully by before-and-after examples written by scientists, engineers, and managers.
1:45 -	Pennsylvania's Historical Annual Mining Reports - 1870 to Present Robin Lighty, PA DEP Bureau of Mining and Reclamation
2:30	Published since 1870, PA's official annual reports on coal mining activities are a valuable resource for histori- ans and genealogists, providing individual mine identification, mine production and employment statistics, and detailed accident and mine disaster reports. Annual mine inspectors' reports for 1870 to 1920 are particularly detailed, containing narrative on mine conditions, new technological developments, reports on mine disasters with maps, and summaries of new mining and safety laws. The DEP Bureau of Mining and Reclamation website provides a wealth of information on these historically valuable reports.
	<b>Overviews of Two Advanced AMD treatment Technologies:</b> a Semi-passive Sulfate Reducing Bioreactor and the Rotating Cylinder Treatment System <sup>TM</sup> <i>Timothy Tsukamoto</i> , <i>Ph.D., Ionic Water Technologies, Inc.</i>
	Overviews of two advanced mine water treatment systems are presented. The first is a semi-passive sulfate reduc- ing bioreactor design which overcomes problems encountered by purely passive sulfate reducing bioreactors. This system introduces a carbon source to mine water influent, allowing a substrate composition not prone to plugging, and metals collection external to the bioreactor. The second is the Rotating Cylinder Treatment System <sup>TM</sup> (RCTS), employing a unique aeration and mixing technology for treating AMD. This system precipitates metals at a lower pH while using less energy and costing less money than conventional active treatment systems.
2:30	Pennsylvania Patch Towns John Enman, Ph.D.
3:15	Hundreds of small mining communities, locally known as Patch Towns, were established in Western PA in the heyday of coal mining. Patch towns are planned communities whose layout was largely determined by the needs of the mines they supported. Considered in this presentation is the placement of components such as streets, the company store, schools, churches, recreational facilities, and dwellings. Also discussed is the construction of dwellings and variations from one patch town to the next.
	<b>Coal Impoundment Location and Warning System</b> John D. Quaranta, Ph.D., West Virginia Water Research Institute at West Virginia University
	Coal impoundments are structures constructed to confine waste products (slurries) derived from washing newly mined coal. Some coal waste impoundments take the form of dams holding back waste slurries. If not properly constructed or maintained impoundments can be breached representing a significant hazard to land and life nearby, occasionally with disastrous results. This presentation describes an Internet web site developed to provide citizens, regulators, industry, and emergency responders with information to enhance the safety and emergency response at coal waste impoundments, as well as the rationale and need for the web site's creation.

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# Wednesday - Synopses

- 3:45 The Monongah Disaster and Mine Safety History
  - J.D. McAteer, Ph.D., Wheeling Jesuit University
- **4:30** Using the Monongah, WV disaster of 1907 as an example, this presentation provides a unique perspective of the evolution of mine safety, the connections between mine management and politics of the day.

## The Appalachian Coal Country Watershed Team (ACCWT) in the Anthracite region Carly Trumann, Catherine Webster, Savanna Lyons, OSM-VISTA Members for ACCWT

Learn about how a low-cost, full-time OSM/VISTA (Office of Surface Mining/AmeriCorps Volunteers in Service to America) volunteer can help your organization restore its watershed and invigorate community projects! Three OSM/VISTA members present information on the history that led up to the creation of the ACCWT, the purpose of the partnership, and examples of recent projects. Historical, cultural, economic, educational, and AMD monitoring and treatment projects will be discussed.

#### 4:30 Anthracite Region Tourist Mine Trio

Michael Auktakalnis, Director, No. 9 Coal Mine & Museum

5:15 In the Anthracite region, there are three tourist mine sites, all having a volunteer base to maintain the mine and conduct tours: The Pioneer Mine Tunnel in Ashland, The Lackawanna Coal Mine Tour in Scranton, and the No. 9 Mine Tour located in Lansford. This presentation will focus on the similarities and differences in those three mine tours.

#### Anthracite Heritage Alliance (AHA)

Dale Freudenberger, Delaware and Lehigh National Heritage Corridor

An overview of the new Anthracite Heritage Alliance created in 2008 in the coal region of northeast Pennsylvania will be presented. The Anthracite Heritage Alliance is a partnership consisting of 3 National Heritage Areas, working together with multiple local non-profit and regional watershed and conservation groups, along with state and federal agencies. The goals of the AHA are to utilize the resources and technical expertise of each of these partners to increase attention on cleaning up and preserving our anthracite watersheds, while preserving our anthracite heritage and culture.

## The extra-conference event you don't want to miss!

Wednesday's early evening mixer will offer heavy appetizers, a cash bar, a fun time and, just as importantly, a great opportunity to make valuable connections.

Renowned *Guitarist Ken Bonfield* was so inspired



about our environmental and heritage efforts he offered to be our conference entertainment. A guaranteed treat! Silent Auction of a framed WYSO print, kindly donated by presenter **Steve Lichak** and the WYSO Foundation. Proceeds benefit next year's conference.

World premier of a rough-cut showing of our own Andy McAllister's debut video "*Out of the Ground"* documenting Pennsylvania's rich coal heritage.



Wednesday

# Thursday - Schedule

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	7:00 - 8:00	Registration 7:0	0 - 8:00
	8:00 - 8:15	Welcome	
	Track	Preserving Coal Mining Heritage	Historic Topics
	8:15 - 9:00	Chester Kulesa : The Anthracite Museum Complex	x
	9:00 - 9:45	J. Tobal : History in the Classroom	<i>I. Marcus</i> : An American Tragedy: The Response of the Federal Government to the Coal Mining Disasters of December 1907
	9:45 - 10:30	<i>E. Bella</i> : Anthracite Living History Group & Avondale Mine Site Historic Preservation Efforts	<i>E. Ricketts</i> : Climbing Jacob's Ladder: The Coal Mine Disasters of December 1907 in Historical Perspective
	10:30 - 10:45	Break 10:30 -	10:45
ay	10:45 - 11:30	<i>R. Morgan</i> : Broadtop Coal Museum Center	<i>J. Dougherty</i> : Why Pennsylvania's Coal Story of the 1920s is Important to Us Today
sd	11:30 - 12:15	<i>S. Lichak</i> : The Artwork & Life of Frank Wyso	<i>L. Metz</i> : Transportation in the Anthracite Region
	12:15 - 1:15	Lunch in Atrium	12:15 - 1:15
Thu	1:15 - 2:00	<i>W. Taylor</i> : Connecting Youth to Pennsylvania's Coal Heritage	<i>M. Beik</i> : Autocracy and Resistance in Windber, PA
	2:00 - 2:45	<i>P. Seighman, E. DeFrank</i> : Coal & Coke Heritage Center	<i>D. Lembeck</i> : Post Office "Local Heri- tage Artwork"
	2:45 - 3:00	Break 2:45-3	3:00
	3:00 - 3:45	E. Hovanec : Mining & Coking in Perspective	
		Conference Ends - 3:45 Have a	safe drive home!



Our 10th Anniversary

# Thursday - Synopses

8:15 - 9:00	The Anthracite Museum ComplexChester Kulesa, Pennsylvania Anthracite Heritage Museum
	The Anthracite Museum Complex preserves and interprets all facets of life in the Anthracite Region. Eckley Miners' Village focuses on everyday life of the miner and his family. The PA Anthracite Heritage Museum showcases the economic and institutional development of the region, immigration and ethnicity, the development of transportation and communities, and the formation of social and labor organizations. The Scranton Iron Furnaces was once the second largest producer of iron in the United States and represented an important market for anthracite coal.
	History in the Classroom
	James Tobal, Laurel Highlands School District (retired)
9:45	This session will introduce teaching strategies used by the presenter to incorporate local history into the Social Studies curriculum at a rural school district in southwestern Pennsylvania. As students develop an awareness of the significance of past events, they have a better understanding and appreciation of the world in which they live today. The construction of the National Road in the early 1800's and the Coal and Coke era are two periods which continue to impact the economy and culture of Southwestern Pennsylvania and will be the focus of this discussion.
	An American Tragedy: The Response of the Federal Government to the Coal Mining Disasters of
	<b>December 1907</b> Irwin Marcus, Ph.D., Indiana University of Pennsylvania (retired)
	Although coal mine fatalities reached record levels in December 2007, neither the coal industry nor the federal government embarked on a remedial program. While safety experts and the United Mine Workers have some culpability in failure to press the industry to adopt more stringent standards, this paper highlights the role of the federal government and focuses particular attention on the actions of President Theodore Roosevelt.
9:45 -	Anthracite Living History Group & Avondale Mine Site Historic Preservation Efforts Eric Bella
0:30	Eric Bella, a 17 year old senior at Lake Lehman High School, presents an examination of the past, present and future of the Avondale mine site and the Avondale mine disaster.
	Climbing Jacob's Ladder: The Coal Mine Disasters of December 1907 in Historical Perspective Elizabeth Ricketts, Ph.D., Indiana University of Pennsylvania
	This paper explores the causes of and responses to the deadliest month in coal mining history. The paper focuses on the two deadliest of these explosions—Monongah and Darr—reexamining the traditional interpretation which paints these disasters as tragic events which inaugurated a serious commitment to mine safety in the United States. Instead, the paper argues that the tragedies and their aftermath must be viewed within the context of en- trenched corporate power which allowed coal corporations to avoid implementing numerous safety measures that

Post Office Art from the Depression Era in Belle Vernon, PA. David Lembeck will present other Post Office Art examples where coal mining was part of the theme.



Photograph of "Men of Coal and Steel" courtesy of the National Archives

had become standard in European mines before the disastrous month of December 1907 and to deflect meaningful

federal supervision of coal mines in the U.S. for more than another half century.

# Thursday - Synopses

	10:45	Broadtop Coal Museum Center Ron Morgan, Broad Top Area Coal Miners Museum and Entertainment Center
	- 11:30	The Broad Top Coal Field, situated in south-central Pennsylvania, has a coal mining history dating back to the early 19th century. Originally dominated by small "country mines", the area saw an increase in deep mining after the construction of the Huntingdon and Broad Top Mountain Railroad in the early 1850s. After World War II, large-scale surface mining would come to dominate the Broad Top until the 1980s. This presentation will trace the history of the Broad Top Coal Field and the efforts of the Broad Top Area Coal Miners Historical Society to preserve and interpret the heritage of King Coal on the Broad Top.
		Why Pennsylvania's Coal Story of the 1920s is Important to Us Today James Dougherty, Ph.D., Indiana University of Pennsylvania
		Following WWI the U.S. had an overdeveloped industry. Energy demands receded as the nation slowly moved back to a peace-time economy. For the coal industry, this produced a situation where there were too many mines and miners and too little demand, a challenge to both operators and miners, each offering plans to remedy the situation. Dr. Dougherty will discuss these proposals and their outcome. He will offer suggestions on linking knowledge of those times with contemporary situations, potentially helping our society in planning responses to economic and social change.
ay	11:30	The Artwork and Life of Frank Wyso Steven J. Lichak, The Wyso Foundation
ursda	- 12:15	The talk will explore the life, legends and lore of the late artist Frank Wyso and how the WYSO Foundation is keeping alive the heritage and history of the coal miners of North Eastern Pennsylvania through that artwork. In this presentation, Steve Lichak weaves the interlinked stories of Wyso's art, the eclectic man who created it, and the formation of the foundation created to commemorate it.
		Transportation in the Anthracite Region
		Lance Metz, National Canal Museum
		Canals, built to ship coal from mine to market, were widely used in the Anthracite region from the early 19th cen- tury until the early 20th century. They also served as a dumping ground for coal waste, also known as "coal dirt" or "coal fines". After the invention of coal fine-burning power plants, coal fines deposited in the canals became a valuable commodity. This presentation will trace the story of Lehigh Navigation, the last of those coal fine opera- tions, in the development of that industry.
	1:15 -	Connecting Youth to Pennsylvania's Coal Heritage Wil Taylor, Jennings Environmental Education Center
	2:00	Discover how Jennings Environmental Education Center makes Pennsylvania's coal heritage personal by using tangible objects and artifacts, innovative hands-on activities and interpretive techniques. This interactive session will demonstrate these techniques and stress the importance of creating lasting experiences and personal connections for your audience.
		Autocracy and Resistance in Windber, PA Millie Allen Beik Ph D
		In the late 19th century, Windber, PA a company town in Somerset County was promoted as a "model town". However, many area residents viewed the town and the company's autocratic rule in a very different light. Take a fascinating journey into the history of Windber and the conflicts between company rule and democracy while examining the power struggles that still go on today in what Beik calls, "a modified company town".

*Our 10th Anniversary* 

# Thursday - Synopses

#### 2:00 - Coal & Coke Heritage Center

2:45 Pamela Seighman & Elaine DeFrank, Coal and Coke Heritage Center at Penn State Fayette

Since 1977, The Coal and Coke Heritage Center at Penn State Fayette has worked to capture and preserve the history and heritage of the coal and coke industries. Curator, Pamela Seighman will introduce the newly expanded and renovated Center where visitors can learn more about the world renowned Connellsville Coke Region. Elaine DeFrank, oral historian, will offer insights into the over 500 hours worth of recorded interviews in the oral history collection housed at the Center.

#### Post Office "Local Heritage Artwork" David Lembeck

During the New Deal Era the federal government embarked on a massive public works building program. The most visible of these projects were the charming post office buildings designed for small towns. Artists were often commissioned to create murals and sculpture for these post offices reflecting the community. Many of the industrial themed artworks portray coal mining. In the anthracite region, coal mining is depicted in all post office artworks in Luzerne and Lackawanna Counties and in several towns outside of these counties. In southwestern PA, a number of murals depict the bituminous coal industry, often combined with images of steel making.

#### **3:00** Mining & Coking in Perspective

#### - 3:45 *Evelyn Hovanec, Ph.D, Coal and Coke Heritage Center at Penn State Fayette*

As we begin a new century and, it seems, a new energy era, we need to learn the lessons that 150+ years of United States dependence on fossil fuels—especially coal-- can teach us. What have we learned from these industries? What have they given us and what have they cost us? What are we willing to pay for energy this time around in resources, environment, and impact upon people and society? This presentation outlines the development of the coal/coke industries of southwestern Pennsylvania with an emphasis upon the Connellsville Coke Region and surrounding areas in the late 19th and early 20th centuries, their decline in the mid 20th century, and then looks at the negative and positive effects these powerful industries had upon the land, people, regional economics, politics, etc.

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# Thursday

