Eastern PA Coalition for
Abandoned Mine Reclamation

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RE: *Legislative Hearing on HR 4248, the "Surface Mining Control and Reclamation Act Amendments of 2019" before the Subcommittee on Energy and Mineral Resources*

Chairman Raul M. Grijalva of Arizona
Ranking Republican Rob Bishop of Utah
Representative Alan S. Lowenthal-Chairman of the Subcommittee on Energy and Mineral Resources
Members of the US House of Representatives Committee on Natural Resources

Good morning, my name is Robert E. Hughes, Executive Director, of the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR). I am accompanied here today by my very close colleague and long-time Program Manager, Michael A. Hewitt, representing the interests of community groups, Conservation Districts, and coalfield communities from Northeastern and Northcentral PA's Anthracite and Bituminous Coal Fields that cover a 16 County coverage area in Northern Appalachia.

On behalf of EPCAMR, I would like to thank you all for allowing me, a native son of the City of Wilkes-Barre, located in the heart of the Northern Anthracite Coalfields' Wyoming Valley, to speak before the Committee. It is an honor and a privilege to be a grassroots representative, coalition and consensus builder, and community organizer from the Hard Coal region and "Valley with a Heart" that has suffered tremendously from past mining practices and is still recovering today and making positive progress. I have spent my entire professional career, in the field of abandoned mine reclamation, environmental outreach and education of our youth, residents, colleges and universities, regional non-profits, and municipal leaders, building strong, diverse public-private partnerships through our Coalition to address our mine-scarred landscapes and polluted waterways. I am very proud and humbled to have the opportunity to present before the Subcommittee some of our thoughts at this legislative hearing this morning.

EPCAMR

EPCAMR is a regional, environmental educational, scientific, technical and non-profit, organization whose mission is to encourage the reclamation and redevelopment of land and remediation of polluted mine water affected by past mining practices. This includes reducing hazards to health and safety, elimination of soil erosion, improvement of water quality, and returning land to productive use, thereby improving the economy of our region.

EPCAMR has more than two decades of experience in working on abandoned mine reclamation issues in our communities at the local level. We are a small shop of **6** passionate and innovative Staff completely funded by grants, donations, a small membership base, and a Board of **25** regional community leaders that guide our policies, direction, purpose, and mission. We serve an area with a population of nearly **1** million people throughout the coalfields of Northern Appalachia. We have **114** underserved, poverty-stricken school districts

in our service area. Throughout Appalachia, an estimated **5.5** million people and at least **2.7** million people in PA live within **1** mile of an abandoned mine land.[1]

Northern Appalachian AML Legacy Impacts from Past Mining Practices

Not everyone realizes that PA is a part of northern Appalachia. Northern Appalachia, including the Bituminous Coal Region that stretches from the far southwestern corner of PA to the Marcellus Shale region of northcentral PA and contains the largest Anthracite deposits in four major coalfields that encompass a **484** sq. mile area. Since coal was first discovered in the Anthracite Region over 250 years ago, approximately **18** billion tons were extracted from the Earth. Our coal regions are scattered with health and safety hazards, environmental degradation, polluted mine water, and poverty-stricken environmental justice communities. Significant damage to our region is often not clearly visible until you fly over the region. It's just different in contrast in many ways to our Central Appalachian partners who are dealing with mountaintop mines, valley fills, and long wall mining issues. However, all of our communities are in need of more diversified economic, social, environmental, and recreational opportunities.

Mine fires, abandoned mine drainage (AMD), mine subsidence, hazardous abandoned vertical shafts and slope openings, flooded mine pools, contaminated water supplies, water-filled stripping pits, contaminated soils, ash piles, culm banks and coal refuse mountains--not just piles, vertical high walls, waste coal silt basins, and abandoned colliery grounds and foundations, are some examples of the legacy of past mining practices that have hindered economic development opportunities. Our culm banks or gob piles, are often mistaken by those who pass through the region as mountains because they have birch or poplar trees growing on them in the acidic soil conditions and don't really comprehend the scale of the problem that we face. The projected costs of reclamation, abatement, and remediation are substantial and many of our smaller municipal communities lack the capital financial resources, ability to leverage multiple sources of funding, and infrastructure investment opportunities. Simply put, are looking for better opportunities, jobs, workforce development, and reclamation funding to significantly improve our quality of life and our surrounding environment.

I have lived in the center of the Northern Coalfields my entire life among the shadows of all of these abandoned mine features and problem areas, mine fires, and polluted streams impacted by AMD.

EPCAMR and many of my colleagues, have dedicated our professional lives to making a difference focusing deeply on reclamation, remediation, education, and watershed restoration projects. We explore every opportunity for creative projects, ideas, collaborations, public-private partnerships, investment opportunities, and environmental action. Thousands of community volunteers and leaders work alongside of us. We are also determined not to let the deleterious impacts of abandoned mine-scarred lands and water pollution continue to degrade our quality of life. We've come up with innovative solutions from within our communities, yet we are at an extreme disadvantage in not having access to the resources and financial means to fully implement our ideas with enthusiasm and confidence. We don't deserve to have to wait any longer for clean streams, green spaces, vibrant and diversified regional economies, and communities in which our children can safely recreate, live, work, and play. We want to continue to revitalize and revive our communities so that people want to stay and raise their families.

We are a part of the PA AML Campaign, an unfunded, informal collective of local and national organizations advocating for the policies and programs on Abandoned Mine Reclamation.

[1] C.M. Mayne, OSMRE/AmeriCorps, May 2016 Report, Sources: US Census Bureau (2010 Census); OSMRE e-AMLIS

Support for Reauthorization in Pennsylvania and around the Country

49 PA Council of Trout Unlimited Chapters and the PA Council of Trout Unlimited, **22** Non-Profits, and **17** County Conservation Districts have all signed on to support Reauthorization. In addition, **15** PA County Governments have signed Resolutions, **4** Municipalities, and the Susquehanna River Basin Commission have written letters in support of Reauthorization. This is at a minimum, **116** different types of diverse interests across the coalfields of Appalachia that support Reauthorization.

Many other State organizations are also in support of Reauthorization, Nationally. We have verified support from **6** organizations in West Virginia, **2** in Alabama, and **1** from Maryland. National partners in Central Appalachia informed us that there are over **20** organizations in support of Reauthorization.

National Trout Unlimited, for example, has a strong presence in Colorado provided us with information that demonstrates just how critical this funding is to other States in the Western US beyond just the Appalachian States. CO's Inactive Mine Reclamation Program (IMRP), run by CO's Division of Reclamation Mining and Safety (DRMS), has shown that in 2019, **$1,322,055** in SMCRA funds were utilized to address abandoned coal mine-related reclamation projects (suppression and mapping of coal mine fires [**>30**], subsidence, emergency) and Priority 1 Physical Hazards (hazardous openings, shafts, adits, stopes, etc.). These SMCRA funds were part of a total project budget (**23** 2019 projects) of **$2,816,305** that successfully safeguarded **404** openings and reclaimed **42** acres of disturbed land. The writing on the wall is that SMCRA funding is essential across the US to address these health and safety hazards as well as our mine water pollution problems. Below are some examples of the types of projects SMCRA has funded in Colorado are common to many of the States across the country.

- Coal Reclamation and Mine fire abatement
    - Suppression and mapping coal mine fires
    - Subsidence abatement
    - Emergency projects
    - Coal waste/refuse reclamation and water quality improvement
    - Shaft and opening closures
- Priority 1 Physical Closures
    - Mitigation and safeguarding of hazardous openings that include shafts, adits, stopes, and subsidence features

EPCAMR would like to see that SMCRA is written and implemented in a way that most benefits coalfield communities and ensures that the funding isn't counterproductive to the affected communities.

Support Letters from PA Businesses and Industry in Support of Reauthorization

Letters of support were provided by local businesses in PA. EPCAMR submits to you with my written testimony, for the record, **5** of those letters of support for the Reauthorization of the collection of the fees to continue to support the AML Trust Fund. These letters of support emphasize job creation, economic investment, the importance of environmental cleanup, the protection of home ownership and businesses from mine subsidence, and public health and safety. The diversity of the types of entities that were able to provide me with a letter showing each of their support include, one from Frank M. Howard, III, Treasurer of Howard Concrete Pumping Company, Inc.[2], located in Cuddy, PA. A second support letter from R.J. Shaffer, General Manager of Scrubgrass Generating Company L.P.[3], located in Kennerdell, PA. A third support letter is from

[2] Howard Concrete Pumping Company Inc. Letter of Support for the Reauthorization of the Collection Fees Supporting the Abandoned Mine Land Trust Fund; website link

[3] Scrubgrass Generating Company L.P. Letter of Support for the Reauthorization of the Collection Fees Supporting the Abandoned Mine Land Trust Fund; website link

Timothy P. Danehy, QEP and President of BioMost, Inc., Mining and Reclamation Services[4]. A fourth letter of support comes from David L. Holman, Airport Manager of Zelienople Airport Authority[5], located in Zelienople, PA. Finally, a fifth letter of support comes from Jaret Gibbons, Executive Director of the Co-Generation Facility Trade Association, known as ARIPPA[6].

AML Reclamation and Off-site Job Generation Report

The Foundation for PA Watersheds AML Reclamation and Off-site Job Generation Report[7] from 2017 provides some insight to the jobs multiplier that occurs when reclamation projects occur that are not often counted. These are just the jobs created in our small non-profit office. The jobs created through abandoned mine land reclamation and AMD remediation are incredibly diverse and include the construction industry, equipment and materials, suppliers, academia and research institutions, engineering, land surveying, legal consultants, recreation outfitters, and the community businesses such as restaurants and gas stations that support it all. For those not directly involved in reclamation, it may be easy to view the process as strictly environmental. In actuality, many additional sectors, project services and categories are involved in abandoned mine reclamation and AMD remediation projects, that are off-site. A PA Department of Environmental Protection Bureau of Abandoned Mine Reclamation (DEP BAMR) Contractors' List of vendors expressing interest in reclamation or associated with reclamation totaled more than **600** companies.

Trout Unlimited's Eastern Abandoned Mine Program also created a report[8] in 2016 prepared by Downstream Strategies and West Virginia University on the retention of jobs regarding operation and maintenance at AMD passive treatment systems across PA.

Job Creation Opportunities

There are job creation and workforce development opportunities in the coalfields that are directly related to AML and AMD remediation. EPCAMR has many examples of job opportunities in place with our existing Staff. They include: Field Technicians who assess and monitor rivers and streams and sample AMD; Water Pollution Biologists who sample and survey rivers and streams for aquatic ecosystem health and fishery value; Visual Habitat Assessors of rivers and stream corridors for determining impacts to land prior to designing and implementing a watershed restoration plan; Culvert assessors for aquatic organism passage and stream restoration on abandoned mine lands; Technical Assistance Providers to local governments and municipalities to navigate for municipal stormwater under MS4 Permits that lack resources; Environmental Educators; Urban Outreach Coordinators to build capacity from within the coalfield communities; 3D Surface and Underground Mine Mapping Modelers and Developers; Watershed GIS Outreach Technicians and Specialists that can catalog, scan, geo-reference, digitize, map, and interpret surface and underground mine; Community Development Organizers and Grant Researchers to seek additional funds and funders to pull viable projects together within the coalfield communities; Program Managers to oversee reclamation, dam removal, natural stream channel design, and habitat restoration projects; and Green Infrastructure Planners for aiding municipal officials on the best management practices to reduce flooding, control runoff, and soil erosion from abandoned mine lands.

[4] BioMost, Inc., Mining and Reclamation Services Letter of Support for the Reauthorization of the Collection Fees Supporting the Abandoned Mine Land Trust Fund; website link
[5] Zelienople Airport Authority Letter of Support for the Reauthorization of the Collection Fees Supporting the Abandoned Mine Land Trust Fund
[6] ARIPPA Letter of Support for the Reauthorization of the Collection Fees Supporting the Abandoned Mine Land Trust Fund; website link
[7] Foundation for PA Watersheds AML Reclamation and Off-site Job Generation Report, prepared by Diehl, B. (2017)
[8] Abandoned Mine Drainage Treatment Systems Jobs Analysis: PA Abandoned Mine Lands Report, prepared by Downstream Strategies, LLC and West Virginia University for Trout Unlimited's Eastern Abandoned Mine Program (2016)

Private Partners Leverage AML Funds & Accelerate Reclamation

EPCAMR believes that there is a strong need to coordinate with county level economic development and redevelopment authorities, Utility companies, Alternative Energy companies, Industrial water users, Chambers of Commerce, Industrial Development Authorities, Small Business Development Centers, and private sector investors to leverage State and Federal abandoned mine land funds under SMCRA. These partnerships can lead to a reduction in the overall project costs coming from one source of funding and can spur economic development, re-use and reclamation of the abandoned mine lands, the flows from the underground mine pool complexes, and the AMD surrounding these sources of water pollution. In order to accelerate the reclamation of these abandoned mine lands, we need to be sitting at the table more often with these entities to share with them the funding opportunities that are available to make the development of the lands more attractive and economically feasible.

Multiple Sectors Identified as Areas of Economic Improvement

EPCAMR sees the following sectors as areas of economic improvement on abandoned mine lands: agriculture, alternative energy, recreational tourism, community recreational use, solar panel farms, hemp farms, bee-keeping, silviculture, greenhouses, electrical generation from wind farms, hydroelectric potential, geothermal energy, resource recovery of metals, consumptive use, and low-flow augmentation. EPCAMR encourages private, public, and entrepreneurial partnerships to look closely into these business sectors that have the potential to lead to a complete diversification of the local economies historically built around coal.

The Need for Reclamation is Bipartisan When It Comes to the Unreclaimed AML Inventory

For example, PA's 8th Congressional District, represented by the Honorable Matt Cartwright, is in the heart of the Northern Anthracite Coalfields of Luzerne County. It is plagued by **322** unreclaimed sites, **44** reclaimed sites, **1** active reclamation project, **1,615** unreclaimed features (63.9%), **913** reclaimed features (36.1%), for a total of **14,267** unreclaimed acres, **6,414** reclaimed acres, and **192** miles of AMD-impacted streams according to EPCAMR's PA Congressional District AML Inventory GIS Map[9]. Some of the most notable unreclaimed AML features of PA's 8th Congressional District include Old Forge Borehole and the Jeddo Mine Tunnel, (2 of the largest discharges in PA by flow volume), Duryea Breach, Plainsville Borehole, Solomon Boreholes, Askam AMD.

PA's 15th Congressional District, represented by the Honorable Glenn Thompson, is in central and western PA's Bituminous Coalfields. It is plagued by **2,649** unreclaimed sites, **75** reclaimed sites, **5** active reclamation projects, **13,673** unreclaimed features (**83.8%**), **2,637** reclaimed features (**16.2%**), for a total of **91,387** unreclaimed acres, **17,568** reclaimed acres, and **2,706** miles of AMD-impacted streams according to EPCAMR's PA Congressional District AML Inventory GIS Map[10]

I would like to thank both, Congressmen Cartwright and Thompson, for their bipartisan leadership over the years. I know they have seen witnessed, first-hand, the effects and impacts that these environmental scars have caused within your old and new Congressional Districts.

Chesapeake Bay Watershed Impacts

PA is effectively riddled with abandoned mine lands and AMD sites that need to be cleaned up with continued bipartisan support since these landscapes and waterways show no concern for Congressional or municipal boundaries. In Northeastern PA, where the majority of the reclamation and AMD remediation needs to occur, we have to address the Chesapeake Bay restoration goal deficiencies, it is even more dire to work with PA partners at all levels to reclaim **14,562** acres of mining impacted areas by 2025, under the Chesapeake Bay

[9] EPCAMR's PA Reclaimed Abandoned Mine Land Inventory System (RAMLIS) 2019 8th Congressional District Map
[10] EPCAMR's PA Reclaimed Abandoned Mine Land Inventory System (RAMLIS) 2019 15th Congressional District Map

Watershed Implementation Plan. There are an estimated **1,900** AML Problem Areas, **10,400** unreclaimed features totaling **73,080** acres and **2,290** reclaimed AML features totaling **13,140** acres. An estimated **1,305** stream miles impacted by AMD are in the Chesapeake Bay Watershed. This creates a lost recreational value for anglers alone, in the amount of nearly **$72** Million annually in the Susquehanna River Basin. When combined with the Delaware and Ohio River Basins, there are **2,834** stream miles impacted, for a total lost recreational value by anglers in the amount of **$146** Million annually[11].

Datashed Tool for AMD Passive Treatment Systems in PA

EPCAMR created an infographic[12] based on data found on the Datashed website that tracks AMD Passive Treatment Systems in PA that has private dollars leveraging State and Federal dollars for their construction, operation, and maintenance by locally concerned citizens. Datashed is a free online tool to assist volunteers, students, industry, and government agencies in the operation and maintenance of passive treatment systems. This tool and data does not include any active AMD Treatment Systems or Plants that are operated by the PA Department of Environmental Protection. Datashed is a collaborative effort of Stream Restoration Incorporated, PA DEP, EPCAMR, WPCAMR, USGS Water Resources Research Institute, BioMost Inc., US EPA Watershed Initiative, Foundation for PA Watersheds, and 241 Computer Services, to provide the tools needed to actively monitor and maintain passive treatment systems.

There are **147** AMD Passive Treatment Systems (**44%** of the **333** AMD Treatment Systems State-wide) in the Chesapeake Bay Watershed treating **49** Billion gallons of polluted AMD treated (**58%** of the 85 Billion gallons treated State-wide) and removing **4.4** Million pounds of metal sediments are removed every year (iron [**68%**], aluminum [**22%**], and manganese [**10%**]). State-wide in PA, there are **133** AMD Treatment Systems treating **85** Billion gallons of polluted AMD water removing **22.8** Million pounds of metal sediments are removed in the Datashed database.

Our biggest fear is that should we lose funding from the AML Trust Fund in place to operate and maintain active and passive treatment systems, the potential for all of the stream miles that have been improved over the last four decades will be lost and will have a detrimental impact on those downstream coalfield communities.

The Susquehanna River Basin Commission has documented **489** untreated AMD discharges in the Susquehanna River Basin alone. These untreated discharges send **73.6** Million pounds of acid and **31.5** Million pounds of metal sediments (iron [**89%**], aluminum [**11%**]) downstream to the Chesapeake Bay annually.[13,14]

The Need for Additional Co-Sponsors for HR4248

There has been a strong positive response for HR4248, however, the bottom line is we need more bipartisanship Congressional Leadership to step forward and co-sponsor the bill. This environmental degradation that is in our backyards and watersheds don't require a particular political affiliation to address the real issue and that is environmental justice for our coalfield communities that have suffered for far too long. It takes leadership who want to be proactive and do what's right.

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[11] PA Fish and Boat Commission's 2018 Non-Attaining Use of Impaired PA AMD Impacted Streams Inventory of Recreational Loss Value by Anglers/Year Excel File (2018)

[12] EPCAMR Infographic on Datashed's AMD Passive Treatment Systems: Susquehanna River Basin Drainage to Chesapeake Bay

[13] West Branch Susquehanna Subbasin AMD Remediation Strategy, Publication 254, Produced in partnership with the West Branch Susquehanna River Task Force, May 2008

[14] Anthracite Region Mine Drainage Remediation Strategy, Publication 279, Produced in partnership with EPCAMR, December 2011

Benefits of Reclamation of AML and Reauthorization

Perhaps most visibly, reclamation of abandoned mine lands can add to the economies of many of our regions by creating jobs, which generates increased tax revenue for the local municipalities, school districts, and county tax departments. But there are many ancillary benefits of AML reclamation including the increase of property values, increase in the sense of community pride, providing buildable sites for commercial, industrial, warehouse distribution, recreational, or residential development, increasing public health and safety by removing hazards, and providing stream-based recreation opportunities which may decrease stress-related health concerns.

The scope of the abandoned mine land and water problems continue to exhaust available resources, and the Abandoned Mine Land (AML) Trust Fund has been impacted over the years by sequestration, leading to even less funding being distributed for reclamation and water restoration to PA and other States and Tribes across the country. PA has the highest number of abandoned mine lands and AMD impacts nation-wide remaining in the e-AMLIS Inventory. Public health and welfare, restoration of the land, and cleaning of polluted streams require Congressional action.

As the sunset of SMCRA is just a few years away, EPCAMR is fully supportive of an extension of the AML Trust Fund through 2036 and does not want to see it end in 2021. We respectfully ask that Congress acts now and begins thinking about reauthorizing the Abandoned Mine Land Reclamation Trust Fund fee collection. Our PA AML Campaign has created a *Basics of SMCRA Title IV Reauthorization of the Abandoned Mine Reclamation Fee Collection Publication*[15] that details and outlines our collective desires and interests for the passage of HR 4248.

EPCAMR would like to see the fees restructured to 1977 historic levels for both underground and surface coal mining. EPCAMR supports increasing the Minimum Program State funds to **$5** Million annually since it doesn't impact the payouts to other States. These states could use the funding to speed up their progress because they are required to also use the funds for emergency projects.

Historic problems from underground mines account for more damage than from past surface mining. EPCAMR would also like to have the Title IV grants under SMCRA exempt from sequestration. The only way to end sequestration of these funds is to include it in legislation. The SMCRA Title IV AML Trust Fund Program is funded through fee collections, not tax dollars. They are dedicated funds which can only be used for AML reclamation and thus will not accomplish deficit reduction. We'd like to see all SMCRA Title IV sequestered funds returned to the States, retroactive to FY 2013, pursuant to the Budget Control Act of 2011.

We urge Congress to approve direct line-item in OSMRE's budget specifically to fund emergency projects thereby allowing the States to utilize their annual AML grants to fund high Priority 1/2 health and safety projects. The current priorities should be maintained, including the ability to fund water-related projects dealing with AMD under Priority 2/3 projects. We support the continuation of mandatory distribution of the funds so that PA can receive the most funding possible in a given year. It is also important to maintain the 30% Set-Aside provision to maintain flexibility for use of the funds for AMD treatment. We support the continuation of the transfer of the interest to the Combined Benefit Fund to defray health care costs for retired miners and their dependents whose companies have gone bankrupt or are no longer in business. We support a continuation of the Non-Profit AMD Watershed Cooperative Agreement Program.

SMCRA continues to eliminate the health and safety hazards in our communities and create jobs and infrastructure at the same time. It's the jobs that don't get as much attention as the reclamation or remediation that occurs on projects. As a Nation, States need to work to improve on showcasing just how many ancillary jobs and other local and regional businesses are positively impacted by reclamation and remediation projects.

[15] PA AML Campaign Basics of SMCRA Title IV Reauthorization of the Abandoned Mine Reclamation Fee Collection Publication 5 (June 2019)

We need to begin quantifying the economic impacts that are both local, regional, and further downstream, in communities that eventually benefit from the cleanup and remediation projects, indirectly. SMCRA Reauthorization can become a major jobs generator in some of the hardest hit areas where coal mining is in current decline.

We believe that States or Tribal Governments should be eligible to receive reimbursement from the Secretary of the US Department of the Interior, upon approval, if they submit an AML Emergency Program as a part of an approved State or Tribal Reclamation Plan.

AMD Remediation, Infrastructure, and Economic Development

EPCAMR believes that we need to talk about remediation and the improvements to water quality from abandoned mine discharges (AMD) in a different light and opportunity, aside from land reclamation. AMD remediation is like comparing apples to oranges when it comes to calculating expenses. It is not determined the same way as abandoned mine land reclamation costs. Active treatment versus passive treatment cost scenarios for cleaning up polluted mine water are very different (See *AMDTreat software*). We need to have the foresight to build into the development of water-related economic development projects, the operation, maintenance, rehabilitation, and repair costs over the life of the treatment system infrastructure. We have found this out the hard way in PA. There also needs to be funding made available to properly quantify both the flows of the mine discharges, the chemistry, and an assessment and feasibility study done of the available land for treatment and the overall size of the underground mine pool drainage areas when considering how to size the AMD treatment operations, whether they be passive treatment, semi-active, or active.

Alternative productive and profitable uses of AMD need to be a part of our discussions. We need to highlight what the alternative opportunities can be when the private sector funding can complement State, Federal, County, Corporate, Municipal, and or Foundation support.

AMD, Mine Pool Reuse, and Alternative Energy Projects

There are many innovative remediation ideas that further investment is needed that include: alternative energy projects that reuse AMD, consumptive use, low-flow augmentation, low-head hydroelectric generation, pump storage, geothermal systems, aquacultures, greenhouses, heating, ventilation, air conditioning, resource recovery of rare earth metals, resource recovery of trace metals (iron, aluminum, manganese, etc.), pigment manufacturing, pottery glaze additives, additives as a co-product in permeable pavers additives, concrete additives, and iron oxide uses in other markets with high-end commodity values.

The complex geologic setting and historical mining of the Anthracite mine pools creates a challenge to calculate the volume of water stored within the underground mines. EPCAMR's underground mine pool mapping efforts over the last decade has reasonably found that an estimated **9** Billion gallons reside in storage in **10** mines in the Southern Anthracite Coal Fields and approximately **435** Billion gallons in all the Northern Anthracite Coal Fields. These mine pool water volumes are for the most part untapped in PA and many other States and it's about time we start looking at them as resource and underground reservoirs of pollution that we continue to ignore to the detriment of our communities and our quality of life.[16]

The mine pools are viewed as both a blessing and a curse. The blessing is the potential availability of the billions of gallons of water and high volumes of AMD in the pools as resources for present and future use. Metal precipitates, such as iron and aluminum oxides, have potential markets, when separated from AMD.

A cost/benefit analysis can be run on individual mines to determine feasibility and possible profit-potential for private sector investment. General framework concepts related to future economic redevelopment opportunities include mine pool re-use, underground storage, water withdrawal requests, AMD treatment,

[16] Mine Water Resources of the Anthracite Coal Fields of Eastern Pennsylvania, EPCAMR (2011); weblink

industrial water usage, hydroelectric potential, resource recovery of metals, and fisheries recovery. Extensive groundwater pollution and **5,567** miles of streams degraded by AMD are the curse of more than 250 years of coal mining. It is unknown how long it will take for all the pyritic material to leach and drop out from any given underground mine.

Diverse Partnerships in the EPCAMR Region Lead to Successful Reclamation

EPCAMR works closely with the Earth Conservancy (EC) on their mission and accomplishments, another regional reclamation partner in Northeastern PA. They have processed waste culm materials from 1995-2016 in the amount of **8,053,000** Tons that were recovered for electricity usage that improved **570** acres on **7** projects alone. At a 40% recovery rate, **20** million Tons of culm and coal waste have been processed. Future work on the West End Bank, near Mocanaqua, PA, will reclaim another **3,500,000** Tons on **300** acres of abandoned mine lands, in the southern Wyoming Valley. EC has reclaimed over **2000** acres at an investment of over **$49.1** Million on lands that have been recently sold to private companies that have come in to the area and sold the properties to major warehouse distribution companies like Chewy, Adidas, DHL Supply Chain Logistics to bring thousands of jobs to the area.

EC has promoted the redevelopment and reclamation of the Wyoming Valley in Northeastern PA where the existing infrastructure was already in place, such as sewer, water, gas, electric, telecommunications, wireless technology, fiber optics, and rail access. They have extended them into these former abandoned mine lands to create economic development and job opportunities. They have planted trees, riparian areas along stream corridors, created job opportunities, supported the incorporation of green infrastructure landscaping designs that controls stormwater runoff and incorporate them into on-site water conservation practices on the abandoned mines as a part of the reclamation process. EPCAMR supports EC grants and works with them to introduce new businesses who come to the region to locate. We discuss opportunities to collaborate, sponsor, and fund local environmental stewardship, community outreach, and restoration projects.

ARIPPA Contribution to Reclamation

In PA's inventory of waste coal piles sites maintained by the PA DEP's Bureau of Abandoned Mine Reclamation (BAMR), approximately **820** waste coal banks covering **9,500** acres still remain unreclaimed. **50** of them are actively burning, like the well-known mine fire in Centralia, PA. The estimated volume of waste coal in these banks is over **224,000,000** cubic yards of material, suitable for burning in a co-generation plant, like those of the ARIPPA trade association. Over **5,000** acres of mine-scarred lands were reclaimed by the ARIPPA plants across PA, at no cost to PA taxpayers. To date several hundred million tons of coal refuse have been converted into alternative energy by member ARIPPA plants. Through ARIPPA's reclamation efforts, streams recover, property values increase, and the reclaimed land is available for higher uses and can often become taxable parcels, bringing in much needed revenue to municipalities with stagnant tax bases.

Circulating Fluidized Bed (CFB) technology allows ARIPPA member plants to convert low BTU coal refuse into electricity, thereby abating AMD from coal refuse stockpiles. By converting coal refuse into alternative energy, ARIPPA members are removing one of the principal sources of contamination to surface and groundwater in legacy coal mining regions. Further, an alkaline-rich by-product of CFB is used, as a soil amendment, as well as in concrete and asphalt, at no cost to taxpayers. Through soil amendments, trees, grasses, and wildflowers, are reestablished, reducing sediment and erosion into the local waterways. Circulating Fluidized Bed (CFB) technology, one of the cleanest methods available today, has been used to convert coal refuse into electricity and an alkaline-rich ash by-product utilized for decades in a highly regulated, safe, and beneficial manner to fill and reclaim unsafe, abandoned mine lands; to remediate streams damaged by AMD; and serve as an additive in concrete/asphalt for construction and roadways.

ARIPPA's member facilities constitute the overwhelming majority of the coal refuse power production industry in the world generating approximately 10% of the total electricity in the PA/West Virginia region. The unique nature of ARIPPA's environmental efforts combined with the desire to coordinate these efforts with "hands on"

environmentally oriented groups, like EPCAMR, and governmental agencies symbolizes its commitment to improving our Commonwealth's landscape and environment at no expense to the taxpayer.

ARIPPA's 2016 Economic and Environmental Analysis of PA's Coal Refuse Industry Final Report[17], analyzed the economic and environmental benefits of the 14 plants comprising the PA coal refuse energy industry and showcases the value and public benefits of the waste coal industry. In June 2019, ARIPPA released an updated report prepared by Econsult Solutions, a Philadelphia-based economic consulting firm, analyzing the economic and environmental benefits of Pennsylvania's coal refuse reclamation to energy industry. According to the report, the industry contributes **$615** million per year to the Pennsylvania economy, supports at least **3,000** jobs, and provides **$37** million in annual environmental and public benefits on top of the up to **$267** million in annual avoided costs to the Commonwealth from the remediation performed by the industry.[18]

10 Years of Progress on the W. Branch Susquehanna River: TU Eastern Abandoned Mine Program

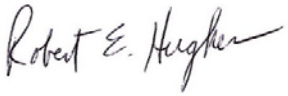
I have referenced a 10-year report[19] (2004-2014) that Trout Unlimited's Eastern Abandoned Mine Program authored covering AMD remediation success for the West Branch Susquehanna River basin that includes multiple success stories from a number of different entities across the watershed. TU's Eastern Abandoned Mine Program also produced another valuable report entitled, Cleaning Up Abandoned Mine Drainage in the West Branch Susquehanna Watershed Program Summary: Why It Makes Economic Sense[20], in 2008.

Lastly, my hometown, like many others, in the coalfields, deserves attention, clean water, greener landscapes, living wage jobs, workforce development opportunities, and a better quality of life that can be gained through the continued extension and passage of the SMCRA Amendments of 2019.

Thank you for the opportunity to provide you with many of the reasons why the reclamation of abandoned mine lands and the restoration of our watersheds is important to EPCAMR, our national coalfield communities, and our PA AML Campaign.

EPCAMR looks forward to working with Congress to further our goals in some of the hardest hit, economically depressed areas of the US in Appalachia that ironically, helped to build our country and this great Nation, we call America.

Respectfully submitted,



Robert E. Hughes
EPCAMR Executive Director

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[17] Economic and Environmental Analysis of PA's Coal Refuse Industry Final Report, prepared by Econsult Solutions (2016)
[18] The Coal Refuse to Reclamation Energy Industry: A Public Benefit in Jeopardy (June 2019)
[19] A Decade of Progress for the West Branch Susquehanna River Initiative: TU's Eastern Abandoned Mine Program, prepared by Trout Unlimited's Eastern Abandoned Mine Program (2014)
[20] Cleaning Up Abandoned Mine Drainage in the West Branch Susquehanna Watershed Program Summary: Why It Makes Economic Sense, prepared by Trout Unlimited's Eastern Abandoned Mine Program (2008)