

John M. and Petra B. Wood  
P.O. Box 271  
Cassville, WV 26527  
(304) 285-6159

19 January 2010

Randy Moore  
Permit Supervisor, Department of Environmental Protection  
Division of Mining and Reclamation  
105 South Railroad Street, Suite 301  
Philippi, WV 26416

Dear Mr. Moore,

We received a letter from Mr. John Angiulli dated 12/08/2009 with Coresco's response to comments that we submitted on 11/06/2009 regarding Surface Mine Application (SMA) O200709. Their response was wholly inadequate and did not effectively address the issues/concerns that we raised. Specific items are discussed below.

The response does nothing to contradict the facts that we have pointed out. Those facts show that the grossly unregulated, entirely profit-driven, and erroneously denominated, so-called "beneficial use" disposal of coal combustion waste (CCW) that has been allowed to date in the Monongahela River watershed of north-central West Virginia is *a time bomb waiting to explode*.

The Monongahela River is the drinking water source for 850,000 people.<sup>1</sup> Bioaccumulation of CCW pollutants in relatively slow-moving (lentic) water is a serious concern.<sup>2</sup> All of the fast-moving (lotic) creeks and runs in the Monongahela River watershed empty into the locked/dammed pools of the Monongahela River. Therefore, the regulatory authority needs to protect the Monongahela River from becoming a long-term storage site for CCW pollutants. We submit that under all of the data now available, it is clear that the West Virginia Department of Environmental Protection *must* compile a broad spectrum of data from all sites in Monongalia and Preston Counties that have used CCW. From these data, the WVDEP must scientifically demonstrate to the public, which this state agency serves, that there have been no, and will be no, adverse impacts to human health and the environment **before** any further CCW disposal permits are reviewed, much less approved.

These data should include, at a minimum: (1) the amount of CCW (cubic yards and tons per acre) that each application determined was required for attainment of net neutralization potential (NNP); (2) the quantities of CCW (cubic yards and tons per acre) that have been disposed of on each permit that was approved; (3) baseline surface and groundwater data; (4) Article 3 surface and groundwater data collected after those permits were issued; and (5) NPDES discharge monitoring reports.

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<sup>1</sup> < <http://www.post-gazette.com/pg/09322/1014258-113.stm> >

<sup>2</sup> United States Environmental Protection Agency. 2009. Steam Electric Power Generating Point Source Category: Final Detailed Study Report. EPA 821-R-09-008. 233pp. < <http://www.epa.gov/guide/steam/finalreport.pdf> >

Groundwater contamination represents a potential human-health risk if the aquifer is used as a drinking water source or has the potential to impact a drinking water source. However, even if a groundwater source would not directly be used as a drinking-water source, contamination represents a possible human-health risk due to the potential for groundwater to impact other nearby aquifers and surface waters designated as drinking-water sources.<sup>2</sup> Leaching to groundwater could take relatively little time or many years before CCW pollutants degrade local drinking-water wells and surface waters. In addition to potentially long temporal scales, groundwater contamination could be occurring on large spatial scales due to the fracturing of the subsurface from the extensive underground mining that has occurred in north-central West Virginia, and could be traveling long distances before it encounters a drinking-water well or discharges as a spring or as seepage into another stream or into the Monongahela River. Therefore, in addition to the traditional coal mine parameters, both historical and timely heavy-metal monitoring data also must be obtained and analyzed from an array of groundwater and drinking-water sources in Monongalia and Preston Counties, both near and far from CCW disposal sites, to scientifically demonstrate that the Coresco site or any other proposed CCW disposal site will not discharge heavy metals to nearby streams and groundwater.

By copy of this letter, we are asking the Environmental Protection Agency and the Office of Surface Mining to review these comments and this application, and to require that the permit application is complete before it is given further consideration. Before any substantive decisions are made about SMA O200709, the applicant should be required to provide all additional necessary data, and answer all questions identified herein and in our original comments.

The WVDEP, and the EPA and OSM, should review these data, and seek additional clarification from the applicant if necessary. We have copied these comments to other agencies that we believe have a legal duty to review these issues and see that all applicable laws and regulations are followed. Please note, then, that when we use the term "the regulatory agency" in these comments, we include the WVDEP -- but we also include the OSM and EPA and other copied agencies, because we think these agencies have a responsibility to take our comments into account and act accordingly.

### **1. Coal Combustion Waste (CCW)**

Mr. Angiulli replied that,

“In accordance with DEP policy, CCBs may be used as a source of alkaline addition to neutralize coal refuse so long as the net neutralization potential of the CCBs satisfies certain ratios, as determined by a mathematical formula. CCBs will be analyzed for toxicity in accordance with DEP standards. CCBs which exhibit potentially toxic or potentially acid producing characteristics will not be approved for beneficial use.”

If this last sentence is true, then this SMA must be rejected. Practically all of the toxic characteristic leaching procedure (TCLP) results for this CCW either fail to meet surface-water quality standards (§47 CSR 2) or the laboratory result was inconclusive. Therefore, they exhibit potentially toxic or potentially acid-producing characteristics.

The pH of all seven samples was <6.0. Arsenic concentrations of four samples clearly exceeded the 0.01 mg/l standard, while the laboratory result for the other three arsenic samples (MDL <.02) was inconclusive. The laboratory result for all seven cadmium samples (MDL <.01), and for all seven silver samples (MDL <.01), was inconclusive because this MDL is ten times greater than the surface water-quality standard (0.001 mg/l). Chromium concentrations exceeded the 0.05 mg/l standard in four of the seven TCLP samples. Lead concentrations exceeded the 0.05 mg/l standard in five of the seven TCLP samples. Mercury concentrations exceeded the 0.00014 mg/l standard in all seven TCLP samples. Selenium concentrations exceeded the 0.005 mg/l standard in three of the seven TCLP samples, while the laboratory result for the other four selenium samples (MDL <.02) was inconclusive.

Results of the leachate analysis also indicate that this SMA must be rejected. Arsenic concentrations of all nine weekly coal refuse/CCW blend samples clearly exceeded the 0.01 mg/l surface-water standard. The laboratory result for cadmium samples (MDL <.005) was inconclusive because this MDL is five times greater than the surface water-quality standard (0.001 mg/l). Beryllium was not even evaluated.

As we stated in our original comments, the leachate analysis that was conducted for this permit application provides only an estimate of the actual movement and infiltration rates of heavy metals that may occur on the permit area. The leachate analysis that was conducted for this permit assumes a constant rate and amount (1 liter once a week) and direction (vertical) of water infiltration, and only for a period of 10 weeks. The permittee proposes to perform leachate analysis once annually. This sampling protocol is not adequate to reflect actual field conditions, where rain events occur in greatly varying magnitudes, and perpetually. Further, rainwater is typically acidic which could lead to increased possibility of leaching.

The applicant is required to prevent violations of water quality standards in nearby streams and to clearly state how they will do so. Given the enormity of the waste that will be dumped on this site (85.5 million tons, up to 500 feet thick), in order for the application to even be considered, the applicant must describe a sampling protocol involving far more frequent monitoring and analysis of trace metal concentrations in surface water runoff and in groundwater beneath and surrounding the proposed refuse site.

Mr. Angiulli's contention that the Coresco facility qualifies for the designation of CCW as a beneficial use is incorrect and requires the rejection of the application. The fact is that the primary use of this facility is as a coal refuse disposal area. The application includes disposal of CCW in amounts far exceeding the quantity needed to neutralize AMD.

In this regard, it should be noted that **West Virginia Code §22-3 applies to surface coal mining and reclamation. It does not regulate beneficial-use exemptions for depositing CCW in a refuse area.** In the attachment to Section MR36-1 of the SMA, the applicant stated that, "...the proposed Refuse Disposal Area No. 4 will not include coal removal and will strictly be a refuse disposal site (all mining has been completed);" and in Attachment J-6 the applicant stated that, "No mining is proposed under this application." Thus, there is no authorization for beneficial use of CCW in this context, and this "Surface Mine Application" must be rejected. Simply put, this is not a SMA; it is a landfill permit application!

As we pointed out in our original comments, the application raises concerns about the long-term reliability of solidification and stabilization of the EPA Toxic Release Inventory (TRI) compounds that are contained in the CCW that will be buried on the coal refuse area. Mr. Angiulli did not address these concerns. Solidification and stabilization technologies are not useful for some forms of metal contamination, such as species that exist as anions (e.g., Cr(VI), arsenic) or metals that do not have low-solubility hydroxides (e.g., mercury)<sup>3</sup>. The limited leachate analyses and baseline water quality data that accompany this SMA do not demonstrate that CCW use has resulted in an altered physical or chemical characteristic of coal waste, nor do the data indicate a reduction of the potential for the resulting mixture to leach constituents into the environment. **Therefore, this application fails to qualify as a beneficial use of coal combustion by-products (§33 CSR 01.5.5.b.4), and the new Coresco facility must apply for a “coal combustion by-product facility” permit, subject to all requirements of the West Virginia Solid Waste Management Rule.**

## **2. Baseline Water Quality (BWO) Data**

Mr. Angiulli stated that,

“Surface water and ground water sampling was conducted at the required frequency and analyzed for the required parameters, providing sufficient baseline data to evaluate the quality of the site.”

In response to Mr. Angiulli’s assertion, we submit the following evaluation of the water-quality data that the applicant submitted in the SMA, and have summarized these data in the following paragraphs.

The applicant has provided a minimal amount of baseline sampling data, and the applicant cannot properly assert anything quantitatively unless and until there has been a scientific analysis of the baseline data and data from former refuse areas. The insufficient data supplied do not support any of the “anticipated” outcomes or qualitative declarations that the applicant sets forth in the probable hydrologic consequences (J-6) and hydrologic reclamation plan (J-11) sections of this SMA.

There is no simply no way to ascertain the scientific validity of these data. It is impossible to statistically analyze nor derive any conclusions from a sample size of one -- which is all that was provided for total dissolved solids (TDS) and trace elements for both groundwater (at Garlow spring) and surface water (BWQ sampling sites). The applicant states in section J-9 that, “Six months worth of background samples have already been taken and those results are provided in Section J.” In fact, samples were *not* provided for the Mepco Well, or for Pittsburgh Seep 3 (permitted under O101593) in Section J of the SMA. Data from all three groundwater sources must be provided. Additional groundwater data must be obtained (*e.g.*, from the core holes) for

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<sup>3</sup> Evanko, C.R. and Dzombak, D.A. 1997. Remediation of Metals-Contaminated Soils and Groundwater. Ground-Water Remediation Technologies Analysis Center, Pittsburgh, PA. 53pp.  
<<http://clu.in.org/download/toolkit/metals.pdf>>

the permit area and adjacent areas using scientific sampling techniques (stratification, randomization, etc) that are geographically and geologically representative. To not do so means not having enough sampling points to determine statistical significance. Groundwater monitoring must be performed both upgradient and downgradient from potential nearby pollution sources. Carefully designed monitoring is essential for determining from where existing pollution is coming. The regulatory authority must not make decisions based on speculative data. For the regulatory authority to consider or approve *any* application, the applicant must scientifically demonstrate that none of the existing pollution comes from the applicant's previous mine permits or CCW refuse areas.

The applicant has included one groundwater baseline sample of TDS and trace metal concentrations, and four surface water samples all on one date (5/11/09), which is inadequate. In section U (groundwater and surface water monitoring plans), the applicant proposed that they would not analyze any samples for TDS or trace metal parameters. Given the reported evidence that trace metals do leach from CCW, (i.e., the BWQ samples in this SMA as well as in reports cited here and in our original comments), this should not be allowed. The applicant has not included an analysis of monitoring data collected during and after the creation of Refuse Disposal Areas Nos. 1, 2, and 3. The limited data that were included were not scientifically analyzed. The applicant must present scientifically validated, objective evidence supporting the claims being made in this SMA.

In Section J-6, the applicant states that,

“There are two known developed sources of groundwater within ½ mile of the proposed permitted area...No adverse impacts to these developed groundwater sources are anticipated as a result of the proposed operation. These existing surface and groundwater sources currently and have previously been located in areas that have been deep and surface mined in multiple coal seams as well as in areas that have contained refuse/fly ash disposal.

Acid-Base accounts of all of the materials to be disposed of have been included in the application. The proposed addition of coal ash and FGD material will add alkalinity; thereby preventing acid formation and contamination of surface and groundwater sources.”

And in Section I-9 the applicant states that,

“The area proposed for refuse placement has been extensively deep and surface mined. A high degree of fracturing exists due to mine subsidence; therefore, any aquifers that did exist have previously been destroyed. The proposed operation shall have no further damaging effect on the hydrologic regime.”

And in Section J-11, the applicant states that,

“The proposed operation will not result in water supply diminution or interruption for any ground or surface water source currently being used for domestic, agricultural, industrial or any other legitimate purpose. The proposed operation is also not anticipated to result in

water supply contamination for the existing water sources used for domestic, agricultural, industrial or any other legitimate purpose.”

On the contrary, the limited baseline data provided for this SMA suggest that a cumulative hydrologic impact assessment (CHIA), if it had been scientifically conducted, would predict increasingly more groundwater pollution. In fact, there is no CHIA even included with this SMA. A high degree of fracturing suggests that this plume of polluted groundwater could move in any direction. The limited data (only four samples) from the Garlow spring indicate that the water supply is already contaminated by the existing area used for coal refuse/fly ash disposal; no other groundwater data were submitted in this SMA. Therefore, the applicant has no basis from which to anticipate that additional refuse/fly ash disposal will not compound the pollution of groundwater that has already occurred. The applicant presents no long-term data from the previous coal refuse areas which would have been monitored by this applicant. Such vague, subjective hearsay as “...is not anticipated to result in water supply contamination...” has no business being in *any* permit application. The regulatory authority must find this SMA incomplete and inconclusive.

Only four baseline groundwater quality samples from one site were analyzed for pH, iron, manganese, and dissolved aluminum. Two sampling periods had no flow (10/31/08 and 11/22/08) and should have been repeated; “no flow” sampling is useless because there is nothing to analyze. Only one sample on 5/11/2009 was tested for total dissolved solids (TDS), selenium, and other trace metals. The parameters listed below exceeded drinking-water standards (EPA 822-R-06-013; listed in our original, 11/06/2009, comments). Concentrations in parentheses are in mg/l:

- Garlow Spring (the *only* groundwater sampling point reported in this SMA):
  - 08/26/08 – iron (0.441), manganese (0.075), aluminum (0.417)
  - 09/30/08 – aluminum (0.146)
  - 10/31/08 – No flow
  - 11/28/08 – no measured parameters exceeded drinking water standards
  - 01/22/09 – No flow
  - 05/11/09 – iron (0.655), manganese (0.186), TDS (1144)

These groundwater data clearly indicate the presence of AMD pollutants in three groundwater samples (two of the six had “no flow,” which is useless information, and therefore must be redone). More baseline groundwater data are clearly needed, year-round, from this spring. Since no comparable data were included for the Mepco Well or for Pittsburgh Seep 3 (permitted under O101593), this SMA must be rejected.

Baseline surface water quality data were collected bi-weekly (2/12/2008 – 7/29/2008) and analyzed for pH, iron, manganese, and dissolved aluminum, and selenium. Sulfates, chlorides, TDS, and other trace metals were analyzed one time (on 5/11/09). No data were collected from BWQ-1. Real baseline data must be collected from station BWQ-1. Monitoring station BWQ-4 is already clearly impacted by AMD pollution from previous mining activities. However, since the application is lacking any detailed information or analysis of waters upstream and downstream of this source, there is no way to determine how much of this pollution may be coming out of the applicant’s own mine permits or CCW refuse areas, and no way to determine how it may be

interacting with or exacerbating the levels of pollution observed at station BWQ-4. Moreover, the source of AMD pollution at stations BWQ-2 and BWQ-5 has not been addressed by the applicant. Therefore, the CCW used on the applicant's previous refuse area permits does not qualify as a "beneficial use," since even the limited baseline-runoff data collected at stations 2 and 5 indicate that the water is polluted.

The limited data provided by the applicant indicate that three out of the four BWQ surface water monitoring stations are polluted (BWQ-1 had "no flow," which is, again, useless information). Because excessive TDS loads resulted in an ecological disaster in the relatively slow-moving (lentic) waters of Dunkard Creek<sup>4</sup> (which is in the Monongahela River watershed), and because the Monongahela River is the drinking water source for 850,000 people as well as identified by the WVDNR as a high quality stream, the applicant must be required to frequently monitor and control TDS loads at all outflow stations.

The parameters listed below exceeded surface water (§47 CSR 2) standards, or exceeded recommended Federal TDS standards.<sup>5</sup> Concentrations in parentheses, except pH which is standard units, are in mg/l:

- BWQ-1:
  - No flow on any dates sampled – no analyses performed. This station must be sampled when it is flowing.
- BWQ-2:
  - 7/29/08 – manganese (1.218)
  - 5/11/09 – beryllium (0.0004), TDS (1136)
- BWQ-3:
  - No measured parameters exceeded surface water standards
- BWQ-4:
  - 2/12/08 – pH (3.18), iron (37.15), manganese (1.576), aluminum (27.18)
  - 2/25/08 – pH (3.10), iron (51.23), manganese (1.929), aluminum (31.39)
  - 3/07/08 – pH (3.41), iron (28.55), manganese (1.670), aluminum (21.62)
  - 3/24/08 – pH (3.04), iron (44.35), manganese (1.775), aluminum (15.90)
  - 4/08/08 – pH (2.96), iron (50.64), manganese (2.006), aluminum (34.66)
  - 4/18/08 – pH (2.85), iron (48.39), manganese (2.036), aluminum (36.44)
  - 5/06/08 – pH (3.05), iron (53.12), manganese (2.425), aluminum (51.80)
  - 5/30/08 – pH (2.93), iron (65.13), manganese (2.149), aluminum (45.41)
  - 6/10/08 – pH (2.81), iron (60.40), manganese (2.442), aluminum (40.02)
  - 6/20/08 – pH (2.92), iron (61.13), manganese (2.341), aluminum (42.71)
  - 7/16/08 – pH (2.90), iron (71.87), manganese (2.835), aluminum (45.46)
  - 7/29/08 – pH (2.84), iron (77.70), manganese (3.000), aluminum (52.90)
  - 5/11/09 – pH (3.15), iron (40.78), manganese (1.839), aluminum (32.32), beryllium (0.0047), cadmium (0.0012), TDS (1696)
- BWQ-5:
  - 4/18/08 – manganese (1.257)
  - 6/10/08 – manganese (1.194)
  - 5/11/09 – beryllium (0.0003)

<sup>4</sup> Reynolds, L. 2009. Update on Dunkard Creek. USEPA Region 3. 17pp.

< <http://www.epa.gov/region03/dunkard.pdf> >

<sup>5</sup> < <http://www.epa.gov/ogwdw000/consumer/2ndstandards.html> >

In Section J-11, the applicant states that,

“In the unlikely event that acid and/or toxic drainage occurs as a result of the proposed operation, chemical and physical treatment will be conducted to ensure a compliance discharge at all outlets.

Surface drainage off of the proposed operation will be controlled by the use of collection ditches. Subsurface drainage will be routed through the site via a rock under drain. All surface and subsurface drainage will be routed to sediment control ponds for treatment prior to discharge to the receiving stream.”

This statement is entirely inadequate and self-contradictory. The applicant is saying that there is a possibility ("unlikely" means from a scientific and regulatory perspective "possible but less than probable") that they will generate illegal discharges that will require treatment; while in section P-10, the applicant stated that no treatment facilities other than sediment control, would be required. The applicant is absolutely required to prevent all acidic and toxic drainage and to unequivocally clearly state how they will do so. The applicant is not permitted to state that it may create illegal drainage and try to "fix" it after the fact. This approach would turn SMCRA on its head.

On this point further, based on three of the four samples with flow that were collected at the Garlow spring (no data for the Mepco Well or for Pittsburgh Seep 3 permitted under O101593 were provided in this SMA) and on the TCLP results, it would appear that chemical treatment would be needed even after CCW was used. It is illegal for the regulatory authority to even consider, much less approve, this permit application, unless the application demonstrates that pollution discharges, with no treatment, will have a defined endpoint. Simply raising the pH of the discharge water is not the only method of treatment, since alkaline discharge can still contain high levels of pollutants. To permit such a massive release of toxic-containing materials into the environment (85.5 million tons, up to 500 feet thick) with no validation or scientific justification is not beneficial to anyone or any thing except the limited-liability (LLC) owner, shareholders, and employees of the refuse area.

**For all of the above reasons, we believe that Mr. Angiulli is incorrect: The applicant has *not* provided sufficient baseline data to evaluate the quality of the site. And as we stated in our original letter: In addition to benthic macroinvertebrate monitoring, there must be provided to regulators and the public any and all existing water chemistry monitoring for the nearby streams. Specific information needed includes: (1) what pollutants were monitored; (2) at what frequency; (3) at what locations; and (4) using what method detection levels. Unless appropriate data were collected, particularly with respect to trace metals, it cannot be known whether the existing permit is polluting surface water. And without these data, the permittee cannot assert and regulators cannot determine that the proposed operation will not discharge trace metals and harm surface water.**



### 3. Underdrains

Regarding the underdrains, Mr. Angiulli has pointed out that Section N of the SMA depicts the location of the proposed underdrain system. However, as stated in our original comments, the location of the underdrain system is not specified on the erosion and sediment control drawings; nor are the underdrains depicted on the Proposal and Drainage Map. It would be more clear and informative to the public and regulators to have the location of the underdrain system placed on the same maps depicting the erosion and sediment control drawings.

**We insist on having the location of the underdrain system added to all erosion and sediment control drawings (Section P, both cross-sectional and areal), and on the Proposal and Drainage Map, using discernable symbology and coloring. Coresco must also provide any interested parties with access, as we indicated in our original comments, to have a site visit of the existing refuse areas and underdrain systems. Please have the applicant respond specifically to these requests.**

### 4. Post Mining Land Use and Wildlife Habitat

In Section F-4, the applicant states that,

“The applicant believes that a post mining land use of hayland/pasture provides the highest probability of success.”

This statement is meaningless. “Success” for what? Reclamation to hayland/pasture does nothing for the majority of wildlife species that required forested habitats, does little for carbon sequestration, and does nothing to reduce cumulative impacts of forest loss.

As stated in our original comments, Forestland should be retained as a post mining land use for wildlife habitat and to minimize cumulative impacts of land-use change. Mr. Angiulli ignored these issues in his reply. **Therefore, the wildlife-impacts section of this SMA is still seriously incomplete.** Further, Hayland/Pasture is already abundant in this area. The applicant does not specify when, how much, or how long any of the permit area would ultimately be used for grazing. Thus, a variance for change in post-mining land use is not warranted and should not be permitted. If the landowner, which is primarily Coresco, has any concern for environmental quality for future generations then Forestland should be required as the proposed post mining land use and appropriate forest reclamation techniques must be used <sup>6</sup>.

In summary, all of our concerns about this proposed permit remain meritorious -- and Coresco's response to those expressed concerns are nothing more than inadequate, conclusory statements.

To reiterate: the applicant must make a scientifically acceptable showing that the proposed operation will minimize disturbance and prevent material damage to the hydrologic balance both

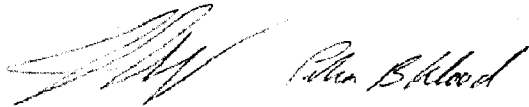
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<sup>6</sup> Burger, J., D. Graves, P. Angel, V. Davis, and C. Zipper. 2005. The Forestry Reclamation Approach. Forest Reclamation Advisory No. 2 of the Appalachian Regional Reforestation Initiative.

within the permit area and adjacent areas. This permit application is woefully incomplete and inadequate in this regard. There is no information from which regulators can make a proper cumulative hydrologic impact assessment (CHIA). There is no information from which regulators can make a determination that there will be no adverse impacts on human health and the environment. The so-called "beneficial uses" rationale for the application are patently absurd. There is absolutely no justification for the levels of CCW being proposed in this purported "Surface Mine Application." The applicant should properly resubmit and re-advertise this application as a landfill permit, subject to all requirements of the West Virginia Solid Waste Management Rule. And whatever sort of permit is eventually sought, the applicant must be required to include scientifically valid and persuasive facts and findings.

The regulatory authority must deny this SMA as submitted.

Sincerely,



John M. and Petra B. Wood

Cc: John M. Angiulli, Environmental Permit Manager, Coresco, LLC  
Roger W. Calhoun, Director, Office of Surface Mining Regulation and Enforcement  
Randy Huffman, Director, West Virginia Division of Environmental Protection  
Lisa Jackson, Administrator, US Environmental Protection Agency  
Shawn M. Garvin, Regional Administrator, USEPA Region 3  
The Honorable Alex J. Shook, Delegate of the West Virginia House of Delegates  
The Honorable Barbara Evans Fleischauer, Delegate of the West Virginia House of Delegates  
The Honorable Robert Beach, Delegate of the West Virginia House of Delegates  
The Honorable Darrell V. McGraw, Attorney General of the State of West Virginia  
The Honorable Eric Holder, Attorney General of the United States