January 6, 2004

Mr. John Forren
U.S. EPA (3EA30)
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RE: Joint Coal Industry Comments on the Mountaintop Mining/Valley Fill Draft Environmental Impact Statement

Dear Mr. Forren:

Coal Operators and Associates, the Kentucky Coal Association, the National Mining Association , the Ohio Coal Association, and the West Virginia Coal Association appreciate the opportunity to share our views on this Draft Environmental Impact Statement (EIS) on Mountaintop Mining and Valley Fills (hereinafter, "MTM") in Central Appalachia. This issue is extremely important to our members because many of them utilize coal extraction methods that require the construction of head of hollow fills and valley fills in their coal mining operations in the study area. As recognized by the EIS, MTM operations are generally the most economical and efficient forms of surface mining in this area. EIS III I-1.

Using valley and head of hollow fills in this region is absolutely necessary, because when mining is conducted in steep slope areas such as Appalachia, the volume of the spoil material is significantly greater than the volume of the

overburden excavated from its original geological location.[1] This is true whether the mining methods are mountaintop mining, contour mining, or even, in many instances, when creating the necessary surface area to begin and support an underground mine. Consequently, the excess spoil must be placed in valley and head of hollow fills. MTM is a major factor in coal production in this area, and accounts for ¼ to 1/3 of Appalachian coal production, and about 95% of the surface mining in West Virginia. EIS III I-23; III N-1. A brief description of the signatory trade associations to these comments follows.

Coal Operators & Associates, Inc. (COA) is a trade association that represents nearly 300 member companies involved in the ownership, leasing, mining, transportation and preparation of coal in Eastern Kentucky; or, supply goods and/or services to the coal mining industry. Our members mine by both surface and underground mining methods and represent the majority of coal mined in Eastern Kentucky.

The Kentucky Coal Association (KCA) is a non-profit corporation whose membership includes large and small, surface and underground coal operators in both the eastern and western Kentucky coal fields. KCA's membership also

[1] The volume of spoil is greater than the overburden that is excavated because the material swells by as much as 25% when it is removed. *See Bragg v. Robertson*, 248 F.3d 275, 286 (4th Cir. 2001), cert. denied, 122 S.Ct. 920 (2002); *See also Illinois South Project, Inc. v. Hodel*, 884 F. 2d 1286, 1292 (7th Cir. 1988)(recognizing that overburden from mining may swell in the range of 15-40% depending on how compact it was in its natural state).

includes a wide range of businesses associated with the coal industry. The KCA seeks to promote the best interests of the Kentucky coal industry.

The National Mining Association (NMA) is a national trade association that includes the producers of most of the nation's coal, metals, industrial and agricultural minerals; the manufacturers of mining and mineral processing machinery, equipment and supplies; and the engineering and consulting firms, financial institutions and other firms serving the mining industry.

The Ohio Coal Association is a non-profit trade association that is dedicated to representing Ohio's underground and surface coal mining production. Today, the Association represents close to FORTY coal producing companies and over FIFTY Associate Members, which include suppliers and consultants to the mining industry, coal sales agents and brokers and allied industries. As a united front, the Ohio Coal Association is committed to advancing the development and utilization of Ohio coal as an abundant, economic and environmentally sound energy source.

The West Virginia Coal Association (WVCA) is a State coal trade association representing the interests of companies engaged in the extraction of coal in the State of West Virginia. WVCA's producing members account for 98% of the Mountain State's underground and surface coal production. WVCA also represents 250 associate members that supply an array of services to the mining industry in West Virginia. These associate members include permitting

consultants, engineering firms, mining equipment manufacturers, coal transportation companies, coal consumers and land and mineral holding companies. WVCA's primary goal is promoting the continued viability of the West Virginia coal industry by supporting and facilitating environmentally responsible coal removal and processing through reasonable, equitable, and achievable State and Federal policy and regulation.

Our comments are divided into several sections that will convey our views. First, we will provide some background information on the statutory and regulatory framework for mining in general and MTM in particular, under which our members operate. Second, we provide extensive general comments on the EIS. This section explains how the EIS shows that MTM has minimal individual and cumulative effects on the environment, highlights some of the significant positive aspects of MTM, and discusses its programmatic nature. The document will demonstrate that, based on the evidence in the EIS record, the best alternative to select would be Alternative III, including an explanation of why Nationwide Permits (NWP) under Clean Water Act (CWA) Section 404 are appropriate in most cases for coal mining operations including mountaintop mining, and why individual permits are normally not appropriate in most MTM situations. Next, our comments analyze all 17 action items contained in the EIS. Third, we provide a section of specific comments on aquatic, terrestrial, and community impacts of MTM.

I. Background

a. Mining in General, and MTM in Particular, is Very Heavily and Closely Regulated, but is also Expressly Sanctioned by Federal Law

Mining is one of the most heavily regulated industries in American history. There are several statutes that specifically regulate mining, and many other general laws that are applicable to mining operations. Just some of the most significant Federal laws include the Surface Mining Control and Reclamation Act (SMCRA), the Clean Water Act (CWA), the Clean Air Act (CAA), the Endangered Species Act (ESA), and the Mine Safety and Health Act. In addition to all of these laws, and the thousands of pages of Federal rules in the Code of Federal Regulations pursuant to these laws that are designed to protect the environment and the public, there are hundreds of State laws that regulate mining.

There are also several provisions in these laws and regulations that apply even tougher standards for some of the activities that take place at MTM operations. Although the law sets tough standards for operators mining in these areas, the indisputable logical corollary to this is that Congress has specifically sanctioned MTM by enacting these provisions. Some of these provisions include SMCRA sections 515(b)(3)(requiring restoration of approximate original contour); 515(b)(22)(governing excess spoil placement); and 515(c)(2) and (3)(expressly

discussing MTM techniques). *See also* Office of Surface Mining (OSM) regulations at 30 C.F.R. 785.14 (MTM); 30 C.F.R. Part 824 (MTM); 30 C.F.R. § 780.29 (stream channel diversions); 30 C.F.R. 816.57 (Stream Buffer Zone Rule); 30 C.F.R. § 816.72 (Disposal of Excess Spoil in Valley Fills); 30 C.F.R. § 816.151(d)(5)(relocation of natural stream channels). The EIS itself recognizes that "Congress acknowledged the necessity of valley fill construction in streams [in SMCRA § 515(b)(22)]." EIS II D-2.

OSM regulations also recognize the necessity of mining in or near streams. 30 C.F.R. § 816.43 expressly allows and regulates the diversion of streams. MTM and mining in or near streams is presumed necessary and valid by Congress and the regulatory agencies, such as the OSM, so long as adverse effects to offsite areas are minimized. There are additional protections in the law for areas that are designated as unsuitable for mining. In extraordinary circumstances, States may designate specific areas in § 522(a)-(d) of SMCRA, if the evidence in the record supports such findings by the State government. *See also* 30 C.F.R. §§ 761-764.

Given all of these statutory and regulatory requirements that must be met, mining operations produce volumes of analyses and plans before they are issued a permit to build a mine. During this process, the public is provided with numerous opportunities to provide input and comment on the permit application, and may object to the regulatory authority. 30 U.S.C. §§ 1263-1264. Even after the permit

is issued, Federal and State laws provide for regular monthly and quarterly inspections of surface coal mining operations to ensure their compliance with applicable laws, regulations, mine plans, and their permit conditions. 30 C.F.R. Part 842; 30 C.F.R.§ 840.11. In addition, mines are subject to inspection following any citizen complaint giving rise to a concern that a violation of SMCRA or regulations has occurred. 30 C.F.R. § 842.12.

The CWA, like SMCRA, is also crystal clear that valley fill construction for excess spoil placement is permissible under Federal and State law. Environmental groups have repeatedly tried and failed to convince appellate courts that MTM is somehow illegal based on misguided interpretations of the CWA, SMCRA, and their implementing regulations. However, the 4th Circuit Court of Appeals has clearly held that such a view of the law is wrong because: (1) EPA's and COE's interpretation of "fill material," which expressly included coal mining overburden placement in waters of the U.S. (including the streams at issue in the EIS), was a reasonable interpretation of the CWA; and (2) SMCRA anticipates that excess spoil from MTM "could and would" be placed in waters of the U.S.[2]

As the EIS correctly notes, both the CWA and SMCRA recognize that incursions and disturbances of streams are frequently unavoidable. EIS II C-30. Congress, the administrative agencies, and the courts all recognize that Federal

law anticipates that excess spoil will be placed in streams. **The real question is not whether MTM or excess spoil placement is permissible, but rather how to regulate it.** Therefore, the question is not what happens to the stream segment that is filled, but whether the downstream impacts or impacts to areas outside the permit area are so significant that they cannot be avoided or satisfactorily mitigated. With this background and this issue in mind, we next turn to an examination of MTM, how it has been analyzed over the years, and what this most recent EIS teaches us about MTM.

b. MTM/VFs have been Studied for Decades, and those Studies Have Consistently Demonstrated that they Are Acceptable Mining Methods

As demonstrated above, Congress was well aware of MTM/VF techniques when it enacted the SMCRA legislation, and recognized the legitimacy of these practices through Federal law. MTM/VF practices have been extensively studied and analyzed since that time as well. For example, in 1979, EPA authored a report concluding that MTM is actually environmentally desirable, and that head of hollow fills can reduce adverse environmental impacts. EPA concluded[3] that:

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[2] *See Kentuckians for the Commonwealth v. Rivenburgh*, 317 F. 3d. 425, 443 (4th Cir. 2003).

[3] *Environmental Assessment of Surface Mining Methods: Head-of-Hollow Fill and Mountaintop Removal, Interagency Energy/Environment R&D Program Report* (hereinafter: "*EPA EA of Surface Mining Methods")*; U.S. EPA (July 1979) p. 6.

(1) Mountaintop removal mining is an environmentally desirable surface mining technique in the steep sloped terrain of southwestern West Virginia and eastern Kentucky when conducted in compliance with existing reclamation criteria; and

(2) Head-of-hollow fill reclamation can reduce environmental impacts occasionally associated with other reclamation practices such as contour regrading in steep terrain or downslope spoil casting. Specifically, these improvements are realized in erosion and sedimentation control, spoil stabilization, revegetation success and land use potential.

In 1989, the Department of Interior prepared a report to Congress on mountaintop mining. This report found that OSM and other Federal agencies are committed to studying the environmental impacts of MTM thoroughly. One of the key studies[4] attached to the Congressional report, the WV Governor's Report, found that "numerous regulatory programs are in place to assure protection of State water quality," and also found "…no significant evidence of widespread or routine violations of State and Federal water quality standards…" *See WV Governor's Report* at ENV9-10. It concluded that, "On balance…the positive

[4] "*State of West Virginia Governor's Task Force on Mountaintop Mining and Related Practices,*" (December 1998)(hereinafter "WV Governor's Report").

impacts of mountaintop removal mining can outweigh the negative impacts." *See Id*. at People-7.

The current EIS contains an additional 30 studies on MTM/VF, and continues the trend of careful and continuous study, evaluation, and improvement of MTM/VF practices. A summary and analysis of the contents of this latest comprehensive analysis of MTM/VF is explained below.

II. General Comments on the EIS

a. The EIS Demonstrates that in Most Areas of Concern, MTM Does Not Raise Significant Issues

Inspector Gregory:

"Is there any other point to which you would wish to draw my attention?"

Holmes: "To the curious incident of the dog in the night-time."

"The dog did nothing in the night-time."

"That was the curious incident," remarked Sherlock Holmes.

From "The Adventure of Silver Blaze" by Arthur Conan Doyle

i. Overall Impacts of MTM

The EIS commissioned 30 comprehensive scientific studies over a span of four years to determine the impact of MTM on the study area, which includes parts of four different States in Appalachia. Based on this information, it is clear that the overall impact of MTM on the study area is not significantly adverse. For example, studies found that despite the size of these MTM operations, about 98% of the streams in the study are not directly impacted by MTM. EIS III D-2. Only slightly more than 1% of streams are actually filled, and many of those "streams[5]" consist of areas that either flow only intermittently for part of the year, or are dry channels that contain water only immediately after a rainstorm[6]. The EIS acknowledges that its estimates of potential future stream losses are overstated because they do not take into account avoidance, minimization, and mitigation already required by the 2002 Nationwide Permit (NWP) 21. EIS IV B-3. Such estimates are probably even more inflated, given that changes to the status quo made by any of the three Alternatives would improve environmental protection and better coordinate the CWA and SMCRA. EIS II B-1. The studies also found that even when aggregating all MTM activity over the past decade, about 97% of the study area was undisturbed by MTM. EIS II C-62. Finally, the evidence shows that MTM has been decreasing, both in numbers and in average size in recent years. EIS II C-5.

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[5] Regulatory agencies, such as the COE, define "streams" much more broadly than the general public does. More common definitions of the term say it includes only "A body of *running* water;" or "a steady current of a fluid." (emphasis added) *See* American Heritage Dictionary, 2nd Edition.

[6] In Kentucky and Virginia, many of the fills are not valley fills but rather head of hollow fills impacting only stretches of ephemeral streams.

In addition to the fact that these overall impacts are minimal, one must recognize that "…surface mining is a temporary use of the land and, with proper mining and reclamation techniques, the land is not irretrievable for a variety of future land uses." EIS IV F-1. Therefore, many of the impacts listed above, such as forest fragmentation will ultimately be a temporary phenomena.

ii. Specific Impacts of MTM Found Insignificant

1. Air Quality Impacts

The EIS found that air quality concerns were not an issue with MTM. MTM has not been considered a major source of air pollution since it does not meet the criteria for major source air quality permits under Title V of the CAA. EIS III V-3. Moreover, except for ozone, monitoring stations reported good air quality for all criteria air pollutants. EIS III V-1. OSM regulations already specifically require an air pollution control plan. 30 C.F.R. § 780.15.

In addition, the Mine Safety and Health Administration (MSHA), maintains separate air monitoring requirements for mining operations to protect mine workers, and has established enforceable exposure limits for respirable coal dust. EIS III V-4 MSHA regulations also require every mine to submit a ventilation

system and methane and dust control plan every six months. *Id.* Finally, MSHA is required by statute to make surprise inspections of every surface mine in the United States at least twice each year. 30 U.S.C. § 813(a).

2. Impacts to Land, Blasting, Stability, Scenery, and Forest Cover Are Insignificant

The studies found that land use is not a significant issue because "existing regulatory controls are adequate to address the issue." EIS II A-7. Likewise, blasting is not considered a significant issue with MTM because the studies concluded that "existing regulatory controls provide adequate protections from coal mining related blasting impacts on public safety and structures including wells." EIS II A-6. The EIS found that stability of valley fills is not a significant issue because there were "very low occurrences of stability failures, and those identified failures were generally minor in nature and posed no risk to public safety." EIS II A-8. Finally, the EIS found that scenery and culturally significant landscapes have statutory and regulatory controls that are adequate to address the issue. *Id.*

The EIS explains that only 3.4% of the forested land in the study area was changed to grassland by surface mining[7] over the past ten years (in WV, Valley

[7] For example, the EIS predicts that if MTM continues at its current rate, there may be a potential loss of up to 3.4% of the salamander population in the study area. EIS Appendix I at 92-93. Although we do not necessary concede that losses would be this dramatic, even if the estimate is correct, the EIS predicts that

Fills (VF) account for only 0.7% of forest loss). EIS Appendix I at V. Therefore, MTM does not have a significant adverse effect on forest cover, particularly when one considers that some of this land will be reforested through reclamation, which will be further facilitated by pending changes in OSM rules to encourage tree planning. Statistics from the EIS show that there is actually more forest cover today than there was in 1950.[8] EIS III R-2. In addition, this land will eventually revert to forest through natural succession. EIS IV A-4.

The EIS concludes that "…impacts to soils from MTM/VF are not irreversible and that over time, soils similar to those that existed prior to mining are likely to be re-established on reclaimed mine sites." EIS IV C-7. In addition, providing grassland areas and edge habitat in this region will have positive environmental benefits for many species that require diverse habitats to flourish. EIS Appendix I at 15. Fragmented forests have more edge habitat, and the creation of more edge habitat often corresponds to an increase in local species diversity as "edge" species are attracted to the region. EIS Appendix I at 43.

3. Exotic and Invasive Species are not Invading; Threatened and Endangered Species are not Threatened

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there would still be an abundant salamander population of over 35 billion in the study area—or about 100 salamanders for every man, woman, and child in the United States.

[8] This trend is continuing. Data from the U.S. Forest Service indicates that the average cubic feet of forest growth exceeds the average annual rate of forest loss for ALL states in the region. EIS IV C-2.

The studies found no evidence that MTM has contributed to the spread of invasive and exotic species in Southern WV. EIS III F-16; Handel 2001. Nor is there a significant issue regarding the Endangered Species Act (ESA). The biological opinion issued in 1986 states that "…surface coal mining conducted in accordance with properly implemented State and Federal regulatory programs under SMCRA would not be likely to jeopardize the continued existence of listed or proposed species, or result in the destruction or adverse modification of designated or proposed critical habitats." EIS IV D-5. Another EIS study says that "…ample forest will remain in the West Virginia portion of the study area to maintain relatively high PEC[9] scores, [but] impacts to many forest interior bird species are likely to occur." EIS Appendix I at 90. Finally, the EIS notes that "there are no significant differences among the No Action Alternative and Alternatives I, II, and III in terms of their ability to protect [threatened and endangered] species." EIS IV D-7.

4. Water Issues are not Significant

The EIS found that flooding due to MTM is not a significant concern. The EIS found that downstream flooding potential is not significantly increased by existing mining practices so long as approved drainage control plans are properly

[9] PEC stands for potential ecological condition, and is a value calculated to determine the ecological health of a defined landscape scale, usually a watershed level, but this cumulative impact study did so on a State

applied. EIS IV I-7; Appendix H. In addition, "…valley fills do not seem to be causing excessive sediment deposition on the first and second order streams." EIS III D-8. "…[T]he substrate characteristics of the filled, filled/residential, and mined classes were not substantially different from the unmined class." EIS III D-13. In other words, the EIS found no significant sediment problem that could be attributed to MTM. Finally, "the EIS studies did not conclude that impacts documented below MTM/VF operations cause or contribute to significant degradation of waters of the U.S." EIS II D-9.

The EIS suggests that changes in water chemistry downstream from MTM operations are cause for concern. EIS III D-7. First, with respect to USEPA's water chemistry data, the USEPA identified problems with the quality assurance/quality control (QA/QC) implemented during the collection and analysis of the water chemistry data, causing all the water chemistry data to be called into question.[10] Assuming these QA/QC issues do not change the overall conclusion that significant differences exist between the filled and unmined sites and between the filled/residential and unmined sites, supplemental studies conducted in conjunction with the MTM/VF EIS studies conclude that neither the changes in the biological community, nor changes in water chemistry in the filled sites appear to have significant adverse impacts on the stream function with respect to

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by State level. According to the EIS, PEC is an effective measure of biologic integrity. EIS Appendix I at 17.

downstream segments. Instead, these studies found sites influenced by mining continue to support abundant populations with representatives of all the functional feeding groups and stream function does not appear compromised at these sites.[11]

Second, the evidence does not show a clear impact on the study streams by the mountaintop mining/valley fill activities. To the contrary, the data establishes that MTM/VF activities result in changes in water chemistry and biological communities typical of any large scale development project, e.g. road construction or residential development. Such changes in community structure are more likely the result of changes in temperature regimes, typical whenever ponds, dams or municipal discharges are present. *Id.* Therefore, it is fair to say that any statement in the EIS attributing a cause and effect to a single activity where others such as temperature or ponds which provide a different food source are playing a role must be considered with caution. In addition, it should also be noted that USEPA reported studies compare a mined site on a third, fourth or fifth order stream with an unmined site on a first or second order stream. No unmined sites were selected on third, fourth or fifth order streams. Changes in water chemistry and biological communities between first or second order streams and third or fourth order streams are expected. USEPA failed to consider changes associated with

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[10] These problems are discussed in the report "A Survey of the Water Quality of Streams in the Primary Region of Mountaintop/Valley Fill Coal Mining" (April 8, 2002).
[11] Arch Coal Supplemental MTR/VF EIS Study Report, April 2002.

increasing stream order in data interpretation and presentation to the public. This flaw in the data must be addressed in the Final EIS.

Finally, concerns about elevated selenium at test sites are minimized when considered in light of the latest scientific data on aquatic toxicity of selenium. EPA's current nationally recommended chronic criterion for selenium (5ug/l in the water column) and 20 ug/l acute criterion have been adopted by many States and utilized in water quality standards programs. However, based upon the latest scientific knowledge on selenium toxicity, EPA made a decision to update the acute and chronic criteria for selenium and published, in March 2002, a draft selenium criteria document.[12] EPA's draft document proposes a revised freshwater acute criterion (185 *ug/l*) in the water column and 7.9 ug/g (dry weight) in fish tissue that is considerably higher than the current national criterion. It is important to note that in some geographic areas in the study area background levels of total Se exceed 20 ppb, yet no acute toxic effects are observed. Therefore, the levels of concern expressed in the EIS studies become much less significant when considered pursuant to the agency's proposed revised criteria.

The EIS found that "Overall, the abundance of macroinvertebrates was found to be similar in upstream and downstream stations or to be slightly higher in

[12] See *Draft Aquatic Life Water Quality Criteria for Selenium 2002*, EPA Contract No. 68-C6-0036 (March 2002 Draft).

downstream stations. EIS III D-9. This strongly suggests that MTM operations are not having an adverse impact on downstream water quality. Likewise, the studies note that: "Biological conditions in the mined sites generally represented very good conditions, although a few sites did score in the good and poor range." EIS III D-12. This strongly suggests that MTM can be conducted with minimal effects on the environment, provided that appropriate mitigation techniques are applied.

Environmentalists have alleged that all of the above areas are at severe risk due to MTM. As explained above and in the EIS, the scientific data from the 30 comprehensive studies does not support the environmentalists' alarmist predictions. At the end of the day, the EIS observed that: "Watershed impacts directly attributable to mining and fills could not be distinguished from impacts due to other types of human activity." EIS II C-74. As Sherlock Holmes observed, the "dog that didn't bark" is a clue in and of itself.

b. The EIS Demonstrates that MTM has Numerous Positive Benefits that Suggest it Should be Permitted

i. MTM has Provided Environmental Benefits

MTM has resulted in improvements in water quality in several areas. Studies commissioned by the EIS have found that MTM resulted in improvements

in pH, iron, and manganese levels downstream. EIS III D-7. As the EIS notes, "the Appalachian coalfields provide almost limitless opportunities for watershed improvement." EIS IV B-9. Such opportunities are presented both in the form of remining operations, which can greatly improve water quality and improve public safety be removing highwalls, as well as mitigation conducted as part of the MTM process.

Runoff and groundwater are stored in valley fills. EIS IV B-4. Valley fills hold approximately 7 times more water as their pre-mining counterparts. EIS III H-4. This water is slowly released downstream, increasing base flows, lowering peak discharges, and moderating water temperatures. EIS IV B-6. An increase in base flow may eliminate intermittent flow, improving an intermittent stream to a perennial stream.

MTM activity also creates ponds. The EIS recognizes that functions of man made ponds exist and may be considerable, and may tend to limit the effect of disturbances on the downstream watersheds. EIS III C-18 & 20; Wallace B. in EPA et al. March 20, 2000. Wetland areas are being created at reclaimed mine sites. It is anticipated that wetland acreage has actually increased as a result of these steep slope [MTM] activities. EIS III D-19. These newly created wetland habitats, in conjunction with results from other mining reclamation efforts, have created habitat, such as grasslands, edge habitat, and scattered ponds that are

important for game species such as wild turkey, bobwhite quail, ruffed grouse, and white tailed deer. EIS III F-11. Some forest edge and grassland species (certain reptiles, birds, mammals, raptors, etc.) are positively impacted by the terrestrial habitat diversity created by MTM. EIS II C-75. The EIS documents that there has been an increase in the abundance of edge and grassland bird species at reclaimed MTM sites. EIS III F-7.[13]

ii. MTM has Provided Economic and Social Benefits

MTM has provided immeasurable economic and social benefits to one of the poorest regions of the United States. These mines provide high paying jobs, economic activity for other businesses, taxes for governments and schools, roads (EIS III J-2), and land that, in certain cases, can be used for commercial development.

The population in the study region is exceptionally poor. According to the Census, over 1/3 of the residents in 24 counties in the study area are below the poverty level. EIS III P-2. What the study area lacks in personal income, it makes up for in natural resources. The area contains over 28.5 billion tons of coal. EIS ES-2 MTM/VF operations are generally the most economical and efficient forms of surface mining in steep slope Appalachia and provide for the highest possible

[13] See also Wood and Edwards, 2001; Canterbury 2001.

recovery of multiple coal seams. EIS III I-1. Such operations may be able to mine as many as 18 seams. EIS III J-1. At current rates of coal production, this area could produce coal for the next 100 years.

One of the many benefits of these MTM operations are the high paying jobs and taxes created by the activity. Mining made up more than 10% of employment in a number of the study area counties. EIS III Q-5. Impacts are even greater in certain regions of the study area. Whereas MTM operations account for about ¼ to 1/3 of Appalachian coal production, in southern West Virginia, about 95% of the surface mining is done by the MTM method. Such impacts are also reflected in the tax revenues of these areas. For example, in West Virginia, 90% of the severance taxes come from coal. EIS III Q-10. Surface mining is particularly important to the economies of Boone, Logan, and Mingo counties. EIS III Q-13.

iii. Unnecessary Limitations on MTM Will Cause Both Economic and Environmental Harm

Unnecessary limitations on MTM in the study area would have significant adverse consequences, for the economy, the people of the region, government, and the environment. The EIS recognizes that if mining costs increase too greatly in the study area, mining employment would drop and tax revenue from coal would decline. Other studies have found that prohibiting valley fills in West Virginia would cause State tax revenues to decline by as much as $168 million annually,

plus an additional $83 million drop in County tax collections.[14] Commensurate school closings, and diminished State and government services would occur. EIS IV I-2. The EIS also recognized comments in the record stating that local governments depend on revenues and taxes in order to provide police and fire protection, ambulance service, and education. EIS I-20. Impacts to the private sector would be even greater, resulting in the loss of over 15,000 jobs and a $2.4 billion decrease in economic output in West Virginia. *See* Marshall Study, cited *supra*. The EIS does not offer any significant economic activity that would replace MTM if it were lost.

Moreover, "if coal in the study area is rendered economically unrecoverable, it may never be mined…" EIS IV F-1. This would be contrary to what is best for the environment, because it would waste natural resources and require coal to be mined somewhere else that may not involve the most economical and efficient form of surface mining that does not provide for the highest possible recovery of multiple coal seams. EIS III I-1. As early as 1979, EPA has stated that MTM may be preferable to other forms of mining, such as contour mining: "Mountaintop removal may serve as an excellent alternative to contour mining in these mountainous areas primarily because of the potential for reduced environmental impact, improved reclamation, increase land value,

[14] *See "The Fiscal Implications of Judicially Imposed Surface Mining Restrictions in West Virginia*," Marshall University Center for Business and Economic Research, (February 2001).

expanded land use potential and total resource recovery." *EPA EA of Surface Mining Methods* at p. 25. In addition, the Marshall study also found that mining firms would be "extraordinarily unlikely" to replace lost MTM tonnage with additional coal mined underground. Indeed, a policy that did not maximize utilization of our coal resources would actually violate OSM's regulations, which provide that surface mining activities must be conducted to maximize the utilization and conservation of the coal so that reaffecting the land in the future is minimized. *See* 30 C.F.R. § 816.59.

Finally, the EIS fails to address impacts to national security if the amount of coal reserves noted elsewhere in this document are excluded from recovery. There is no consideration for this Administration's National Energy Strategy, aimed at securing energy independence for the United States. This strategy relies heavily on the continued use of this nation's abundant coal resources as a low-cost and reliable source of energy.

c. The EIS is Programmatic in Nature

The agreement to prepare the EIS is contained in a settlement agreement that resolved Federal claims in the case of *Bragg v. Robertson*, 54 F.Supp. 2d 653 (S.D. WV 1999). The stated purpose of the EIS is:

> "…to consider developing agency policies, guidance, and coordinated agency decision-making processes to minimize, to the maximum extent practicable, the adverse environmental effects to waters of the United States and to fish and wildlife resources affected by mountaintop mining operations, and to environmental resources that could be affected by the size and location of excess spoil disposal sites in valley fills."

64 Fed. Reg. 5778 (February 5, 1999).

The EIS is not specific to any particular action, but rather is a "Programmatic EIS" in that it evaluates broad Federal actions such as the adoption of new or revised agency program guidance, policies, or regulations. An EIS is not itself "final agency action" subject to judicial review. Standing alone, it does not establish any rights, obligations, or other legal consequences.[15] A programmatic EIS is essentially procedural in nature and not substantive. In the future, policies will be finalized and rules promulgated based on information and analysis contained in the EIS, but the EIS itself does not change any current laws or regulations. Future actions proposed as an outgrowth of this EIS may require independent or supplemental NEPA analysis.

[15] *See Bennett v. Spear*, 520 U.S. 154, 177 (1997).

The EIS has done exactly what it is supposed to have done—it has considered various policies, guidance, and coordinated agency decision-making processes to minimize the impacts of MTM to the extent practicable. Accordingly, in the framework of this programmatic EIS, we turn now to a discussion of Alternative III, and why we believe that it should be selected as the best Alternative in the Final EIS.

d. Alternative III is Preferable

Although the EIS states that "the alternatives were developed with the objective that each would satisfy the requirements of the CWA and SMCRA," EIS II B-1, and each would likewise "improve environmental protection and better coordinate implementation of the CWA and SMCRA…" *Id.*, Alternative III is the most preferable alternative for the following reasons.

i. Alternative III Will Produce the Best Decisions, Which Will Improve the Environment

The EIS correctly observes that: "[Alternative III] would provide clear environmental performance targets for industry, stakeholders, and regulators based on combined analyses of SMCRA and CWA performance standards, a better basis for decisions and findings by SMCRA regulators, and an improved ability for States, with more knowledge about environmental resources within their borders,

local conditions, etc., to set priorities for mitigation." *Id.* The EIS also recognizes that the U.S. Army Corps of Engineers (COE) does not have staff with mining engineering background as OSM does, and that CWA § 404 minimization alternative analyses involve a knowledge of mine planning theory and practice, as well as operational feasibility to determine if all practicable alternatives have been considered. EIS IV I-17. Therefore, Alternative III is the most logical choice because the Federal regulatory personnel with the best knowledge about the subject will more frequently be in a lead role in making environmental decisions.

ii. Coordination will Also Yield Better Decisionmaking

Alternative III is based on a joint permit application that will provide for concurrent review, which will result in better decisionmaking. It will enhance the coordinated regulatory processes by serving as the platform for evaluation of compliance with SMCRA and CWA Sections 401, 402, and 404 programs. EIS II C-22. Although a single permit application would be used, each agency would remain responsible for ensuring that all statutory and regulatory responsibilities in SMCRA and the CWA are met, further enhancing environmental protections. A memorandum of agreement (MOA) and field operating procedures (FOP) will further enhance coordination and decisionmaking. EIS II C-25-26.

SMCRA requires that Federal and State agencies, such as OSM, State regulatory authorities, and the COE, coordinate implementation of their programs and cooperate "to the greatest extent possible" in order to minimize duplication, delays, and conflict. 30 U.S.C. §§ 1211(c)(12) & 1292(c); 30 C.F.R. § 773.5. The CWA likewise mandates the agencies minimize duplication.[16] Alternative III is clearly the best option to fulfill this statutory mandate, because it would minimize duplication by promoting "a single lead agency with coal mining regulatory expertise for permitting and a framework for efficient, environmentally responsible production of energy resources." EIS II B-15. Requiring both an individual permit (IP) and a SMCRA review would be duplicative and inefficient, unless it is determined necessary by the COE in a particular situation, and justified by the particular circumstances.

iii. Alternative III Correctly Presumes the NWPs are Appropriate in Most Cases

Data from the EIS demonstrates that the vast majority of MTM operations are currently authorized pursuant to NWP 21. For example, in West Virginia from 1990-2002, 81 NWPs have been issued for MTM operations, versus only 5 individual permits (IP). EIS II C-46. The COE has been independently applying the statutory requirements of the CWA over this time, and has concluded 94% of

[16] 33 U.S.C. § 1303(a); 33 C.F.R. § 322.2(f)(2); *See also WV Governor's Report* at ES-4 ("[COE, FWS, OSM & EPA] should be encouraged…to cooperate in resolving outstanding mountaintop removal issues.").

the time that NWPs are appropriate. Environmental organizations have repeatedly challenged approval of these permits, and have repeatedly lost their claims in Federal courts.[17] Therefore, it is apparent that Alternative III is the most appropriate alternative, because it establishes the regulatory paradigm that will most often produce the correct decision.

iv. Balancing Environmental, Economic, and Technical Considerations

Alternatives are considered not only with regard to their impact on the environment, but also on technical and economic factors. For example, one of the primary purposes of SMCRA is to "assure that the coal supply essential to the Nation's energy requirements and to its economic and social well being is provided and strike a balance between protection of the environment…and the Nation's need for coal as an essential source of energy." 30 U.S.C. § 1202(f). Agencies are required to follow all Congressional mandates, including those in SMCRA and other laws. Since the comprehensive analysis concluded that: "the environmental benefits of the three alternatives are very similar," EIS II B-13, the agencies should select Alternative III because it is the best alternative that also fulfills other statutory mandates by minimizing the adverse impacts to the

[17] *See Bragg v. Robertson, 72 F. Supp. 2d 642, 658 (S.D. W. VA 1999); vacated, Bragg v. West Virginia Coal Association, 248 F.3d 275 (2001); cert. denied, 122 S.Ct. 920 (2002); See also Kentuckians for the Commonwealth v. Rivenburgh*, 317 F. 3d. 425 (4th Cir. 2003).

economy. This approach is also consistent with NEPA and regulations by the Council on Environmental Quality (CEQ), which allow agencies to consider economic and technical issues: "An agency may discuss preferences among alternatives based on relevant factors, including economic and technical considerations and agency statutory missions." 40 C.F.R. § 1505.2(b); 42 U.S.C. § 4332(B).

v. Why NWPs are Appropriate for MTM

1. COE Asserts that NWP are Appropriate for MTM

The COE reauthorizes its nationwide permits (NWPs) every five years. In all of its previous actions, and particularly in its most recent reauthorization, the COE clearly stated that NWP 21 is appropriate for MTM: "…this [NWP 21] permit is designed for use by mountaintop mining operations as well as other surface coal mining activities. 67 Fed. Reg. 2042 (January 15, 2002). The COE also states that "…valley fills may be pursued under the current regulations." *Id.* at 2039. The COE, through NWP 21, ensures that surface coal mining activities do not cause more than minimal adverse effects to the aquatic environment after considering mitigation. *Id.*

The COE believes that NWP are appropriate and useful for expediting the processing of permits provided there is adequate compensatory mitigation. Id at

2043. The COE found that proposed projects under NWP 21 are generally located at the upper limits of the watersheds and are therefore not interfering with aquatic species migration. *Id.* Moreover, the COE is ensuring that such projects are avoiding and minimizing impacts to the extent practicable and providing adequate mitigation, especially in the form of enhancement or rehabilitation of existing streams through stabilizing old mined sites to reduce sedimentation and acidic water releases. Such activities can result in substantial improvement in downstream water quality and aquatic habitat within a watershed. *Id.* These findings are consistent with those of the EIS, which found that Appalachian coalfields provide almost limitless opportunities for watershed improvement. EIS IV B-9. The EIS also agrees that mitigation could not only offset, but enhance aquatic resources. *Id.* Finally, the COE recognizes that coal mining is different than many other activities authorized under NWPs, because coal mining projects are thoroughly reviewed for environmental impacts under several other authorities. *Id.* at 2042.

2. There are many protections built into the NWP framework

There are many protections available under NWP 21 to ensure protection of aquatic resources. Such protections are always evolving and improving, as necessary. For example, just last year, the COE made two changes to NWP 21. First, the COE now requires a specific written determination by the District

Engineer (DE), on a case-by-case basis, that the proposed activity complies with the terms and conditions of this NWP, and that adverse effects to the aquatic environment are minimal both individually and cumulatively, after consideration of any required mitigation before any project can be authorized. 67 Fed. Reg. 2038. Second, the COE clarified specifically in the NWP 21 that the agency will require mitigation when evaluating surface coal mining activities in accordance with General Condition 19. The COE also will now address direct and indirect effects to the aquatic environment from the regulated discharge of fill material in its § 404 review.

Furthermore, under Alternative III, the COE retains discretion to (1) require an individual permit if the adverse individual or cumulative effects on the aquatic environment will be more than minimal after mitigation; (2) add regional conditions on a watershed, regional, or geographic basis; or (3) suspend, modify, or revoke authorizations under a NWP. NWPs do not authorize any activity that is likely to jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the ESA, or to destroy or adversely affect the designated critical habitat of such species. Not only does the COE have substantial discretion to regulate NWPs, but EPA is also authorized to veto any § 404 permit. EIS II C-8; CWA § 404(c).

vi. IPs Are Duplicative and Unnecessary in Most Cases Because SMCRA Provides Comprehensive Information on all Aspects of Mining for Use by COE in § 404 Reviews

The COE, pursuant to CWA § 404, is limited to regulating the placement of fill material in waters of the United States, and the scope of its analysis is limited to impacts on aquatic resources. However, SMCRA provides much broader coverage through several statutory and regulatory provisions, through which OSM protects fish, wildlife, and the hydrologic balance. Indeed, that is why NWP 21 is the only "programmatic" Nationwide Permit—that is, a general permit directly tied to another environmental regulatory program that already comprehensively regulates the authorized activities. As the COE has repeatedly found, SMCRA adequately addresses environmental concerns and provides similar protections for aquatic resources as the § 404 program requirements. [18] The language of NWP 21 has always tied the authorization directly to those activities that are "authorized by [OSM] or States with approved programs under Title V or [SMCRA]." *See* 51 Fed. Reg. 41026, 41256 (November 13, 1986); 67 Fed. Reg. 2020, 2081 (January 15, 2002). A number of these SMCRA protections are discussed below.

SMCRA § 515(b)(10) requires operators to "minimize the disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems…"

[18] *See* 56 Fed. Reg. 14598, 14604 (April 10, 1991); 56 Fed. Reg. 59110, 59124 (November 22, 1991).

In addition, § 515(b)(24) provides that operators must minimize disturbances and adverse impacts of operations on fish, wildlife, and related environmental values to the extent possible using best technology currently available (BTCA).

For permit applications, SMCRA also requires information on maps, mining plans, watersheds, climatological factors, geological information regarding overburden strata, coal seams, aquifers, the water table, spoil, topsoil, blasting, natural drainways, and chemical analyses. 30 U.S.C. § 1257(b). Further information is required for the mine's reclamation plan. 30 U.S.C. § 1258.

In addition, SMCRA § 507(b)(11) requires a determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site. This section results in information collected on the hydrologic regime, quantity and quality of water in surface and underground water systems, information on dissolved and suspended solids, and such other data as required to assess the probable cumulative impacts (set forth in a Cumulative Hydrologic Impact Analysis, or "CHIA"). *See also* 30 C.F.R. § 780.21.

All of this information is available to the COE to assist in making its required determinations pursuant to its authority under CWA § 404. Because SMCRA provides such comprehensive information regarding the mine, and because Alternative III provides numerous avenues for coordination between

OSM and COE, it would be unnecessary, duplicative, and contrary to Congressional intent to require lengthy individual permits as the norm, as is likely under Alternative I. Moreover, courts have observed that they will not uphold presumptions, such as Alternative I, that are counterfactual.[19]

vii. OSM Will Promulgate Rules to Fill any Regulatory Gaps

OSM will issue rulemakings (Action 3.3 and Action 7) and an MOA to ensure that any gaps, including § 404 data collection, impact prediction, and alternative analysis, including avoidance and minimization are addressed. EIS II C-23. These actions include amending the "stream buffer zone" rule and the OSM regulations on the placement of excess spoil. We strongly support these regulatory changes by OSM that are more fully explained in Section II(e)(iii) & (vii) of our comments, *supra*.

e. Discussion of Specific EIS Action Items (EIS II C)

The EIS proposes seventeen specific action items. Our comments on these Action items are provided below.

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[19] *NMA v. Babbitt*, 172 F.3d 906, 913 (D.C. Cir. 1999)(we do not see how a counterfactual procedural device could be justified even as a matter of policy); S*ee Allentown Mack Sales & Serv., Inc. v. NLRB, 522 U.S. 359, 118 S. Ct. 818, 828, 139 L. Ed. 2d 797 (1998).*

i. Action Item 1: Regulatory Alternatives

As explained in great detail in Section II(d). of our comments, we strongly support Action 1.3, commonly referred to as "Alternative III."

ii. Action Item 2: Consistent Stream Definitions

We support this action. Like the definition of "fill material" that was clarified by the COE and EPA in 2000, creating consistent definitions of streams would be beneficial so that the same definitions would apply to various regulatory programs. This would lead to greater efficiency, better coordination, and consequently better environmental analysis, decisionmaking, and consistency among the various programs.

iii. Action Item 3: Clarification of the Stream Buffer Zone Rule

We strongly support this action.

SMCRA has never mentioned, let alone mandated, a requirement that there needs to be a "buffer zone" around a stream. Quite the contrary, SMCRA is

replete with references to mining near, under, and/or through streams. Instead of prohibiting stream disturbance altogether, the law requires an effort to minimize adverse effects *outside the permit area and downstream*. *See, e.g.* SMCRA §§ 515(b)(10(B)(i)(prevent to the extent possible using BTCA additional contributions of suspended solids to streamflow or runoff outside the permit area); 515(b)(22)(D)(allowing disposal in springs, natural water courses or wet weather seeps as long as drains are constructed); 516(b)(9)(B)(focusing on limiting additional contribution of suspended solids to streamflow outside the permit area); 516(b)(11)(minimize, to the extent possible using BTCA disturbances & adverse impacts of operations on fish & wildlife); 516(c)(allowing mining under perennial streams, except where imminent danger to human inhabitants exists). Congress reiterated its concerns in SMCRA's legislative history, which emphasized that Congress was not primarily concerned with the footprint of MTM VFs, but rather with the downstream impact, both in terms of safety to populations and the environment. *See* Senate Report No. 95-128, 1st Session, p. 83.

The original purpose of the stream buffer zone (SBZ) rule was to protect a stream from sediment bearing water flowing from the disturbed area. See 44 Fed. Reg. 30619 (May 25, 1979). This purpose confirms the fact that the rule was never meant to apply to valley fills in the first place. Instead, it was directed at mining near a stream. As OSM recognized in its 1983 rule, "It is impossible to conduct surface mining operations without disturbing a number of minor natural

streams, including some which contain biota." 48 Fed. Reg. 30313 (June 30, 1983).

The CWA, as well as OSM regulations, provide ample protection for streams. CWA § 404 permits provides extensive protection, including mitigation requirements that are beyond that required by SMCRA. In addition, almost a dozen other SMCRA regulations provide protection for the hydrologic balance and fish & wildlife.[20] The SBZ rule is therefore not only redundant, but worse, its vague language has resulted in unnecessary and costly litigation, permit delays, and uncertainty in the SMCRA regulatory programs. Therefore, this rule needs to be eliminated, or at the very least, properly clarified.

iv. Action Item 4: Advanced Identification Designation (ADID)

We strongly oppose this action. This action is unnecessary and duplicative, because authority already exists under SMCRA to designate areas that are unsuitable for mining. 30 U.S.C. § 1272. These SMCRA provisions are specifically designed for mining, and are more appropriate for use with MTM operations than is an unrelated provision meant to be applied in other contexts. Moreover, both the CWA and SMCRA require agencies to minimize duplication.

[20] *See, e.g.* 30 C.F.R. §§ 816.41-43; 816.45; 816.72; 816.97; 816.150(b)(5); 816.150(d)(1) & (d)(2); 816.151(c)(2); and 816.151(d)(5).

30 U.S.C. § 1292(c) & 1303(a); 33 U.S.C. § 1211(c)(12); 33 C.F.R. § 322.2(f)(2). Such duplicative action is also contrary to the purpose of the EIS, which calls for coordinated agency action.

In addition, ADID regulations have historically been used only for specific geographic locations and not applied to a general class of particular stream segments or water resources. EIS II C-36. ADID designation only occurs following exhaustive site-specific data collection and analysis, and thorough public participation. *Id.* Without these site-specific efforts for each headwater stream, an ADID designation for a broad category of streams would be arbitrary. EIS II D-7.

v. Action 5: Development of New Water Quality Standards

The CWA requires States to review water quality standards (wqs) at least once every 3 years. 33 U.S.C. § 1313(c)(1). The Associations support efforts by States to review and revise wqs as appropriate to ensure they are attainable and that they are based upon the latest scientific knowledge. EPA recognizes that there are a number of factors, water quality and non-water quality, that affect the attainment of the biological integrity of a particular water body, including the amount of human activity resulting in permitted and non-permitted discharges, and

the type and extent of hydrologic modifications.[21] For example, some recent literature suggests the full restoration of natural aquatic life communities may not be feasible in small watersheds with heavily urbanized areas. *Id.* at 23. Likewise, the same may be true for certain water bodies where natural background conditions or irretrievable human-induced conditions prevent attainment. As such, EPA recommends States consider developing a system of tiered aquatic life uses and subcategories which define reasonably attainable biological communities for the impacted areas. Once a refined designated use system is developed, individual water bodies may be assigned refined designated uses, as appropriate, and wqs and water quality criteria (wqc) may be revised accordingly. Such revisions are subject to EPA review and approval and require an appropriate scientific, technical or economic justification for the change. The Associations believe, particularly in light of new scientific evidence suggesting the current national water quality criteria for selenium may be over-protective, that States should undertake a meaningful review of current standards and use designations where credible evidence supports a reanalysis, e.g. such as standard for selenium.

vi. Action 6: Refine Ecological Function Protocols

[21] See EPA Guidance: Coordinating CSO Long-Term Planning With Water Quality Standards Reviews, July 31, 2001.

We support the use of appropriately crafted protocols to assist in determining the effects of MTM operations on ecology. However, such protocols must be based on real evidence and sound science, and not arbitrary numbers created just for the sake of having a threshold limit.

vii. Action 7: Rulemaking on Excess Spoil

We support this rulemaking effort by OSM. We agree that the permit applicant should demonstrate, to the satisfaction of the regulatory authority, that the volume of excess spoil is no more than necessary and that the location and configuration of excess spoil fills will result in the least environmental impact after considering alternative sites and designs. However, consistent with SMCRA § 515(b)(24), the second requirement should be required only *to the extent possible, using BTCA*, since this limitation was imposed by Congress.

viii. Action 8: BMP manual for stream protocol and mitigation

We support this action.

ix. Action 9: Refine and Calibrate Stream Assessment Protocols

We support this action. The protocols should continue to be improved and calibrated as new data becomes available.

x. Action 10: Incorporate Mitigation/Compensation Monitoring Plans into SMCRA/NPDES inspection schedules. Coordinate SMCRA and CWA requirements to establish financial liability to ensure that reclamation and compensatory mitigation projects are completed successfully.

We do not understand this action. This action seems to combine and confuse concepts that do not belong together. For example, NPDES does not relate to mitigation. Likewise, there is no bonding under the CWA; rather, bonding is required only under SMCRA, and only for reclamation. NMA filed comments with OSM last year on proposed changes to its bonding regulations. The comments explained that bonds are set to cover certain activities, and cannot be broadened after the fact. There is a serious problem with the availability of reclamation bonds for the mining industry. Also, heaping too much liability on the system risks additional forfeitures, which can ultimately make the overall problem worse. We are not aware of any COE regulations requiring bonding for mitigation associated with NWPs. Therefore, the agencies must be extremely careful in implementing this action.

We cannot provide further comments without more specifics on exactly what is being proposed in this action.

xi. Action 11: Apply Stream Assessment Protocols to Determine On Site Mitigation Requirements

The SMCRA regulatory authority should apply the stream assessment protocols to determine on site mitigation requirements so long as the protocols are realistic and produce realistic assessments. However, certain protocols that have been developed so far are of questionable reliability. For example, the Louisville Protocol has not undergone extensive peer review or public comment, and may contain errors.[22] In addition, permittees should receive credit for SMCRA reclamation towards mitigation requirements.

xii. Action 12: Creation of a Dynamic GIS Database for evaluating and Tracking Aquatic Cumulative Impacts

We support the gathering of additional data to better evaluate and track the cumulative impacts on aquatics. However, we do not agree that such information should be used to establish a "bright line" cumulative impact threshold for feasible CWA § 404 MTM permits. The evidence in the EIS uniformly suggests that such a bright line is inappropriate because there are too many site specific factors, and therefore, the creation of such a line would be arbitrary and capricious. Moreover, the EIS itself found that smaller watershed sizes, by increasing the number of fills

[22] *See* Joint Industry Specific Comments.

constructed, could result in *greater* cumulative impacts, reductions in coal reserves and increases in utility costs. EIS II C-73.

xiii. Action 13: BMP Manual for Growth Media & Reclamation with Trees

We support this action. Studies have shown that changes in reclamation techniques, coupled with modifications to OSM regulations could greatly improve the ability to grow trees on reclaimed land. Moreover, the EIS recognizes that "…impacts to soils from MTM/VF are not irreversible and that over time, soils similar to those that existed prior to mining are likely to be re-established on reclaimed mine sites." EIS IV C-7. Such techniques, if properly applied, can actually be less expensive than current practices. This is an area where OSM rulemaking could make a significant contribution to minimizing the impact of MTM operations by removing existing impediments to planting trees.

xiv. Action 14: Congressional Mandate to Grow Trees

We strongly oppose this action. A one-size-fits-all mandate such as this was not put into SMCRA by Congress in the first place because they recognized that OSM, States, and permittees needed flexibility to address site specific conditions that are most appropriate for the area. Moreover, most surface rights are not owned by mining companies, and therefore permittees cannot normally

force landowners to accept forest cover as the post mining land use. If such an amendment were made to SMCRA, it would remove a big stick from the surface property owners' bundle of rights, and cause takings lawsuits. It would unnecessarily eliminate flexibility that is built into current law. Finally, forcing States to do this may also violate the 10th Amendment to the Constitution. This is an unnecessary and bad idea.

xv. Action 15: Evaluate and Coordinate Dust/Blasting Programs and Develop BMP Manual

The creation of a BMP manual may merit further consideration. However, we oppose the regulatory actions because the EIS shows that "dust and fume emissions from blasting pose no potential health problems outside the permit area. Visible and measurable fugitive dust rarely migrated more than 1000 feet from the actual blast." EIS II C-84. Air quality control plans are already required as part of the SMCRA permit. *See* 30 C.F.R. § 780.15. In addition, MSHA also regulates explosives and blasting. *See* 30 C.F.R. §§ 77.1300-1304.

xvi. Action 16: Flooding Guidelines

We support the concept of non-mandatory guidelines to assist operators in minimizing the potential for off-site flooding, to the extent that guidelines are reasonable. However, we would not support mandatory flooding regulation

because the EIS does not support such action. It found that: (1) the predicted increases in peak flow did not cause flows to leave the banks of the stream channel; and (2) flooding was caused by mine sites that were not following or maintaining their approved drainage control plans. EIS II C-87. This evidence demonstrates that more regulations are not necessary or productive, but rather, the focus should be better compliance with existing rules and regulations at a few operations.

xvii. Action 17: Program Changes to Comply with the ESA

As noted above, the most recent biological opinion issued by FWS says that: "…surface coal mining conducted in accordance with properly implemented State and Federal regulatory programs under SMCRA would not be likely to jeopardize the continued existence of listed or proposed species, or result in the destruction or adverse modification of designated or proposed critical habitats." In addition, the EIS says that: "there are no significant differences among the No Action Alternative and Alternatives I, II, and III in terms of their ability to protect [threatened and endangered] species." EIS IV D-7. Endangered species issues can be adequately addressed on a permit-by-permit basis under existing

regulations. Neither a CWA 404 permit nor a SMCRA permit will be issued if it will result in violations of the ESA.[23]

The following section of the comments will provide detailed comments on specific sections of the EIS.

III. Specific Comments on the MTM EIS

Page II.C-30

> *The extent to which valley fills reduce energy (organic carbon) resources that may be used by downstream aquatic communities is not well known.*

Scientific research has demonstrated that no-net reduction in energy transport or energy availability has occurred. For example, the United States Geological Survey, as part of the National Water Quality Assessment Program, conducted a survey of fish communities to assess biological responses to certain stressors, with an emphasis on mining. Published in 2001, the study found that streams associated with large scale surface mining activity (including one of the streams analyzed in both the EIS benthic and chemistry reports) had high scores in terms of both sensitive individuals and total fish counts:

[23] 33 U.S.C. § 1344(c); 30 C.F.R. § 780.16; 30 C.F.R. § 816.97(b).

Among the Kanawha River streams, Clear Fork at Whitesville, Kelley's Creek at Cedar Grove and Laurel Creek at Hacker Valley ranked among the best sites in several species composition metrics.[24]

If valley fill construction or other mining-related disturbance was impacting the amount of energy available to downstream reaches, according to the positions advocated by participants in the *Value of Headwater Streams Workshop* (EIS Appendix D), a corresponding reduction in fish populations would occur below valley fills. As noted under the same section of the EIS, *"Macroinvertebrate recovery appears to be facilitated provided sufficient food sources and aquatic habitats are available."* The results of the USGS fish survey and the findings of the EIS Cumulative Impact Study (CIS) demonstrate that sufficient energy exists and will continue to exist to provide input for these watersheds and to sustain aquatic function in the downstream reaches of the watershed.

Page II.C-36, Actions 4.1 and 4.2 **Designate Areas Generally Unsuitable for Disposal Referred to as Advanced Identification of Disposal Areas**

Application of this §404 regulatory tool to mining in Central Appalachia would be redundant. Each of the factors identified as part of the ADID process are currently addressed and/or facilitated by other regulatory programs. For instance, premining baseline water quality data is collected and submitted as part of the

[24] U.S. Geological Survey. *Fish Communities and Their Relation to Environmental Factors in the Kanawha River Basin, West Virginia, Virginia, and North Carolina 1997-1998.* 2001

SMCRA and NPDES applications. The public participation avenues that are stressed in the ADID description are an integral part of the SMCRA, §401 and §402 permitting processes. While permit-specific legal challenges are not a matter of routine in the study area, the SMCRA process certainly provides the option of administrative challenge (to an appeals board) and legal challenges to the appropriate state court.

As noted by the COE in earlier rulemaking actions regarding NWP 21, the mining related dredge and fill permits are one of the only permits in the §404 program that are subject to extensive, independent environmental analysis [25]. Mining operations are subject to extensive SMCRA permitting requirements and NPDES requirements. Depending on the activity, other agencies such as the federal Mine Safety and Health Administration can be involved in permitting actions. All these existing environmental programs are subject to federal oversight: OSM in the SMCRA process and EPA in the NPDES process.

In summary, the ADID process would only add to an already comprehensive, expensive and time consuming regulatory process associated mine permitting actions.

Page II.C-37 **Stream Impairment**

> *Studies indicate that aquatic communities downstream of surface coal mining operations and valley fills <u>may</u> be impaired.*
> *(emphasis added)*

[25] 56 Fed. Reg.14598, 14606 (April 10, 1991) "SMCRA provides similar protections for aquatic resources as the § 404 program requirements." See also 56 Fed. Reg. 59110, 59124 (November 22, 1991), COE again acknowledges that § 404 and SMCRA protect the same resources.

Scientific research conducted for this EIS and by mining companies in conjunction with the EIS does not support this statement. The most significant change observed below valley fills was a shift in the benthic community towards more filter-feeding organisms and a reduction in mayfly population. This shift may or may not be directly attributable to valley fill construction or mining activity. OSM found similar community shifts with a distinct reduction in mayfly populations downstream of mining without valley fills:

> **A study was…conducted by OSM on the cumulative off-site impacts from a large area mine in southeastern Ohio over a twelve year period. The location of the study was on the Central Ohio Coal Company (COCCO) property where a dragline was used…Although this study was not in the EIS study area it was included to show how mining activities without valley fills can impact water quality. The chemical analysis of the impacted streams indicated similarly elevated levels of hardness, sulfates, conductivity…**
>
> **Comparative surveys of macro invertebrates…indicate similar results to those in the filled and filled/residential class sites of the MTM/VF studies (i.e.; elevated conductivity, sulfates, hardness and a decline in pollution sensitive species)…It is particularly noteworthy that none of the macro inveterate samples...showed any significant numbers or kinds of mayflies.**
> **EIS III.D-7.**

Since the OSM study cited above was in connection with mining that did not involve valley fills, similar results can be expected with any earth disturbing activity, mining or otherwise.

Neither the decline of the mayfly population or the shift towards filter-feeding organisms impacts stream function downstream. The USGS fish survey found that streams below valley fill and surface mine disturbance supported healthy and diverse fish populations, indicating that sufficient energy exists below filled areas.

> *Total fish species downstream of some filled sites were lower than mined and reference sites. However, fisheries sampling was limited by drought conditions during the study period and the sample populations may not be statistically representative.*

The Associations believe that statements regarding fish impairment are incorrect. As noted above, results of the Fish Report are questionable, and of little value. The USGS fish survey conducted in the same region as the EIS Fish Report found some of the healthiest fish populations downstream of areas subject to large scale mining and valley fill activities. As noted in the subsequent paragraph:

> *The sample size and monitoring periods conducted for the EIS were not considered sufficient to establish firm cause and effect relationships between individual pollutants and the decline in particular macro invertebrate populations. Impairment could not be correlated with the number of fills, their size, age, or construction method.*

When viewed in conjunction with the USGS fisheries report previously cited in our comments it is clear that valley fills and other mining activities are having no adverse affect on the downstream fish communities. <u>The failure of the EIS to state the obvious is a serious flaw and should be addressed in the final EIS</u>.

Page II.C-44, third paragraph under Action 6:

An example of biomonitoring to assess baseline stream health using macro invertebrate data is the West Virginia Stream Condition Index, which was used in some of the aquatic studies conducted for this EIS.

Application of the WV SCI to the southern coalfields of West Virginia is inappropriate. This assessment method was developed using data collected across the State, but an undue emphasis was placed on information collected in the central and northern regions. The conditions in these other regions are quite different that those that exist within the primary region of MTM/VF which rests in the southern portion of the State. A more region specific assessment would account for the natural conditions evident in the West Virginia portion of the study area Further, the results of the WV SCI have been incorrectly interpreted to assign "impairment" to several streams.

Finally, it is inappropriate to conclude that changes are the result of valley fills. For example, OSM's evaluation of a large scale surface mine in Ohio, the Central Ohio Coal Company Study (OSM COCCo. Study) documented similar benthic changes below mining disturbance that did not include valley fill construction. Mayfly taxa were virtually non-existent in this study as well. Because of generally flat terrain of the mined area, OSM COCCo. Study could be characterized as an evaluation of excavation rather than mining, so similar impacts to the mayfly taxa should be expected below any activity that fractures rock and disturbs the soil.

Page II.C-51, NWPs Discussion:

> *On January 15, 2003 the COE reissued all of its NWPs. Those permits generally identified upper limit thresholds for NWP applicability of each identified activity. In considering the need for thresholds for NWP 21, the COE determined that there was currently no scientific basis for a programmatic threshold. Additionally, the COE believes the coal mining is different from activities authorized under other NWPs in that coal mining projects are reviewed for environmental impacts under other federal authorities.*

As noted in this section of the EIS narrative, coal mining is subject to extensive and detailed environmental analyses through the state or federal SMCRA, NPDES and 401 water quality certification programs. Any potential environmental impacts of mining are identified and addressed prior to the issuance of the SMCRA and NPDES permits. These existing permit reviews which occur independent of the §404 permitting process are sufficient to insure that "no more than minimal" impacts will result from the proposed mining operation.

> *However, the COE made the commitment to re-evaluate the possibility of an upper threshold for NWP 21 after this EIS is completed.*

The existence of the SMCRA and NPDES permitting programs, coupled with data collected through the EIS technical studies and other scientific research support a final decision by the COE to assume that all §404 permit applications are eligible for authorization under NWP 21 as advocated under alternative three, and that an upper threshold is not required. Specific evidence to support this approach and alternative are presented under our General Comments.

Page II.C-52, Compensatory Mitigation, General Comment:

The COE encourages applicants to perform compensatory mitigation projects in conjunction with mining operations;

A permanent conservation easement is required for mitigation and coal mine companies frequently do not own the property they are mining.

Requiring permanent conservation easements works at odds with encouraging on-site mitigation performed as part of the reclamation of a mined area and improperly extends the COE's influence beyond its statutory jurisdiction. As the statements cited above acknowledge, coal companies usually do not own the land on which they are mining. Instead, the mining companies lease the right to extract the mineral and the surface of the area reverts back to its owners once extraction and reclamation are completed. Because of this unique land ownership arrangement, the ability of the mine operator to obtain property and execute conservation easements is extremely limited, if not impossible. Unlike other development activities that impact wetlands and require §404 permits, mining is only a temporary land use. Whereas highway, infrastructure and building construction are permanent activities, mining only occurs in an area for a relatively short time. Any mitigation project undertaken for these permanent activities lends itself better to perpetual easements, since property is usually purchased by the permittee in conjunction with these permanent land uses and maintained in perpetuity as simply an extension of that project. Other natural resource extraction activities often coexist with mining, with timbering and natural gas production being the most prevalent activities. These activities, like coal

extraction, are temporary and are usually facilitated through leases, not ownership. Conservation easements could potentially complicate these other extraction activities thereby reducing the land's overall value and presenting a takings situation.

A conservation easement forecloses the possibility of future use or development and eliminates the private property rights retained by the landowner

As with many other particulars to the "wetlands" mitigation requirements it is clear that mining and the temporary nature of coal extraction was never considered in the development of this requirement.

Imposition of a conservation easement is unneeded and duplicative. Any future activity that could impact jurisdictional waters would require §404 authorization from the COE.

Page II.C-73, last paragraph, Establishing Cumulative Impact Thresholds:

> *Based on the fact that there have been 5 individual permit applications compared to the 81 projects approved under NWP 21 in West Virginia, it appears that applicants are designing the majority of MTM/VF proposals to stay below the 250-acre minimal impact threshold and thereby avoid the IP process.*

This statement is presented without any explanation as to the effects of the interim 250-acre NWP/IP permit threshold. Operations in West Virginia redesigned to fall under the 250-acre reduced projected employment and production numbers. A particular operation in Nicholas County West Virginia was redesigned by the permittee to reduce valley fill configurations in order to fall below the 250-acre

watershed restriction. The project's planned recoverable coal reserves were lowered from 25 million tons to 8 million tons.[26]

The EIS technical studies found similar results, which are summarized on page IV.I-3:

> **The economics studies show a direct correlation between fill size and shifts in production due to increased mining costs. The Hill & Associates sensitivity analysis projected reserve reductions of 22 and 45% as well as cost increases of around 8 and 14% when all fills are restricted to 250- and 75 acre watersheds respectively.**
>
> **The Hill & Associates studies generally concluded that smaller fills necessitate less complete extraction but more rapid depletion of the surface mineable reserve base with different equipment types…**

The effects of the 250-acre threshold require more explanation in the EIS as the reader is left with the impression that the limit is impact-free, which it clearly is not: reserve bases are being reduced and the projected life of particular mine sites are being diminished with coincident reductions in employment, state tax collections etc.

Page II.C-45, Fill Minimization, General Comment

The entire discussion of fill minimization in this section overlooks a critical controlling factor in the location and development of mining operations. Coal mining occurs where the coal resource exists. Unlike other land disturbance activities that potentially impact jurisdictional waters, alternatives to filling are

[26] *Bragg v. Robertson.* Civil Action 2:98-636 U.S. District Court for the Southern District of West Virginia,

generally not available to the coal industry. As noted in the Mining Technology section of the EIS, all disturbance for surface or underground mining in the region will result in the generation of spoil. AOC reclamation returns most of this spoil to the mined area, but because of the "swell" factor of fractured overburden, not all the spoil, even under an AOC scenario can be returned to the mined area

Page II.C-47

> *Compensatory mitigation for unavoidable impacts is required by the CWA for both general and individual permits. The amount and type of compensatory mitigation required are determined by the functional assessment of the waters impacted by a specific project; i.e. higher quality streams require more mitigation than lower quality streams. The functions of streams lost through filling can require substantial mitigation as compensation. Consequently, mitigation to replace and restore aquatic functions can be a costly endeavor. Therefore, the cost of mitigation can serve as an incentive to minimize valley fills in aquatic habitats.*

Assuming that exorbitant mitigation requirements will result in fill minimization is a false impression. First, any disturbance, mining or otherwise, in the steep slopes of Central Appalachia will result in the generation of excess spoil. For mined areas, existing SMCRA requirements mandate these areas be restored to AOC unless an alternative land use is justified by the applicant. Even if AOC reclamation occurs based on the swell factor of the interburden and overburden some fill material MUST be placed in a valley fill regardless of mitigation requirements:

> **The primary reason for using valley fills is that the excavation of overburden results in a greater volume of**

Avadavit of William B. Raney.

> **material than was present on the mine site before mining. When bedrock is broken up forming spoil, void spaces are left between the individual rock fragments, causing them to occupy a greater volume than the original, unbroken rock. This expansion is referred to as swell and typically represents a volume increase of about 40 percent. Compaction of the spoil during backfilling partially offsets swell as the rock fragments are squeezed together by the weight of the overlying material, but this shrinkage factor will not completely return the spoil to its solid…volume.**
>
> **Particularly on steep-sloped mine sites, the excess spoil generated by the swell factor cannot be completely backfilled on the mine bench with the construction of potentially unstable slopes or substantial deviation from AOC**
> EIS III.K-3.

The EIS economics technical studies demonstrated that the physical and economic recoverability of a given coal reserve is directly tied to available valley fill opportunities:

> **The economics studies show a direct correlation between fill size and shifts in production due to increased mining costs.**
> EIS IV.I-3.

So, rather than encouraging fill minimization and stream avoidance, draconian mitigation requirements will only increase the cost of mining and act as a de facto programmatic barrier to mining activity in the region, much like the specific watershed acreage restrictions considered but ultimately rejected for inclusion in the EIS.

Another result of excessive mitigation requirements is to discourage post-mining land development. Though lack of suitable, stable land remains a chronic

economic and social problem throughout the study area, mitigation requirements and costs will discourage these post-mining developments.

Site specific conditions may exist that permit the operator to further minimize fill placement beyond the existing AOC requirements if suitable adjacent, attainable areas such as AML benches exist, but the incentive to use these areas is provided in the 404(b)(1) analysis and would be identified in the SMCRA permitting process absent any increased mitigation costs.

Page II. C-52, Compensatory Mitigation, General Comment:

As the EIS properly notes, environmental conditions in the study area provide ample mitigation opportunities:

> *The Appalachian coalfields provide almost limitless opportunities for watershed improvement, following almost 100 years of abandoned mine land (AML) problems. Mine drainage pollution, eroding spoil on the down slope, clogged stream channels, abandoned highwalls and coal refuse areas, and other orphan land problems exceed the capacity of the SMCRA AML Trust Fund. Many of the problems are such low priority that it is unlikely that the AML program will ever address them.*

Acid mine drainage and other stream impacts such as eroding spoil or coal refuse emanating from AML sites is by far the most serious and common water quality problem in the study area. A cursory glance at the 303(d) list of any of the states within the Central Appalachian region reveals hundreds if not thousands of streams identified as impaired from these impacts. The above-cited paragraph is also correct by observing that few, if any of these problems will be alleviated by the current AML program established under SMCRA, where impacts posing

threats to health and safety receive the most attention and funding. While the AML fund may not provide for timely reclamation of sites impacting water quality in the study area it provides an excellent structure to facilitate reclamation and remediation of these areas through mitigation.

Except for Tennessee, all the states currently have an AML program that has been delegated to the state regulatory authority. These state AML programs use allocations from the federal AML fund to complete reclamation of identified pre-SMCRA disturbance. Using this existing structure, operators seeking 404 authorization for valley fill construction would, in cooperation with the state AML agency, identify an AML site(s) that is adversely impacting water quality. The operator would then work with the AML agency to alleviate these impacts. Mitigation credit would be assessed based on the overall improvement to water quality and habitat.

Approaching mitigation from this more practical standpoint will have a substantially greater improvement on the environmental health of the area than will in-kind replacement of headwater streams for several reasons. First, the scopes of potential impacts are not of a severe magnitude. Headwater streams will continue to comprise roughly 60% of total stream length in Central Appalachia and the area will maintain sufficient PEC scores. Second, structures constructed in accordance with SMCRA mandated mining and reclamation standards can serve as onsite mitigation. Research has demonstrated that these SMCRA provide unique habitats (through wetlands) that do no exist in the study area. Third and

most important, improving or preserving the energy transported from headwaters to the downstream system means nothing if other stressors such as AMD and excessive sedimentation impair or eliminate the aquatic habitat. In other words, mitigation efforts that restore, preserve or enhance the energy transport from mined areas means nothing if there are no macroinvertebrates alive downstream to consume this energy. This approach to mitigation is best viewed as a "watershed" approach that results in an overall net environmental benefit.

Similar environmental benefits will be seen from other water quality improvements that can be implemented through mitigation. The second most prevalent water quality problem in the study area results from the lack of public infrastructure. Failing or nonexistent wastewater treatment systems contribute to stream degradation in the region as do crude road crossings, stream bank erosion caused by repeated flooding and residential stream encroachment. Again, using the watershed approach to mitigation, it makes little sense to enhance the energy transport of the mined area through enhanced SMCRA structures or preservation of headwater reaches only to have this energy flow to a downstream area that is severely impacted by fecal coli form, or from another stressor resulting from the lack of infrastructure.

The correction of pre-existing water quality stressors coupled with vast mitigation potential of mining-created wetlands, ponds and side drains make the study area a "gold mine" of mitigation possibilities, and the final EIS should recognize and promote these "nontraditional" mitigation measures.

Page II.C-53, COE Stream Assessment Protocol, General Comment:

The Louisville Stream Assessment Protocol is mentioned throughout this section. Use of a functional assessment may indeed facilitate mitigation decisions, but the value or applicability of the Louisville Protocol is not as established as the discussion in this section presents it to be. Unlike the EPA RBP, the Louisville Protocol has not undergone an extensive peer review or public comment.

The Louisville Protocol is based on an earlier study conducted by the Kentucky Division of Water, so any errors made in this proceeding endeavor will be amplified by application of the Louisville Protocol. Serious questions exist regarding the inclusion/exclusion of particular benthic metrics in the document that may unfairly skew the assessment and the documents' heavy reliance on conductivity.

II. D-1, Alternatives Considered but Not Carried Forward in This EIS, General Comment, entire section:

Both SMCRA and the CWA clearly contemplate fill construction in streams, as noted in our introductory comments. Each of the various specific fill restrictions presented in this section ignores this basic, underlying premise: Mining and valley fill construction is legal and with recent court decisions its legality is crystal clear. Two specific legal challenges have targeted surface mining in Appalachia specifically. *Section I, Purpose and Need* provides a cursory glance at these recent judicial assaults that sought to undue Congressional statutory intent and decades of regulatory interpretation by the very agencies that have prepared this EIS. The

first, styled as *Bragg v.Robertson* was centered on the SBZ of OSM and a similar provision found in West Virginia's state surface mining program. The District Court in this action chose to accept the plaintiff's tortured reading of federal and state mining law that construed the SBZ to prohibit valley fill construction in intermittent and perennial streams. The *Bragg* decision was reversed by the U.S. Court of Appeals for the Fourth Circuit on federalism and jurisdictional questions. A subsequent action was filed in the same Court, this time challenging the COE's interpretation of the CWA to permit valley fill construction under §404. The same District Court this time held, despite years of interpretation to the contrary, that mining spoil was "waste" under the CWA and could not be permitted pursuant to §404. In the decision, the District Court went so far as to dismiss a pending EPA-COE rulemaking that would finally end the confusion surrounding mining spoil and place it firmly within the jurisdiction of the COE as "fill material". This decision too was appealed to the Fourth Circuit and again the Appeals Court reversed. In this case there was no overriding question of jurisdiction and the Appeals Court spoke directly to the legality of surface mining in the context of both SMCRA and the CWA:

> **While SMCRA does not define "fill material", its "excess spoil material," 30 U.S.C. section 1265(b)(22), is defined in the SMCRA regulations as material placed "in a location other than the mined-out area."…And, regardless of whether the fill has a beneficial primary purpose, SMCRA does not prohibit the discharge of surface coal mining excess spoil in waters of the United States.**

> **Indeed, it is beyond dispute that SMCRA recognizes the possibility of placing excess spoil material in waters of the United States…**
> **It is apparent that SMCRA anticipates the possibility that excess spoil material could and would be placed in waters of the United States…**[27]

The Appeals Court decisions in *Bragg* and *KFTC* ,which predate the release of this EIS, have properly recognized Congressional intent and sustained years of regulatory implementation. Consequently, any such alternative contemplated by the agencies seeking to ban valley fills would require a statutory change and reach far beyond the programmatic scope of this EIS.

The watershed specific fill restrictions explained in this section ignore the scale and scope of current and anticipated mining activity in the region and appear to assume that mining and valley fill construction activities were affecting vast regions of the study area, while in fact that is not the case. The CIS has determined, using liberal estimates, that mining and valley fill activity could potentially impact 4.10% of the streams in the study area. The same study found that the dominant land use of the area will continue to be dense, unmanaged forest over: 87.5% of the study area is forecast to remain unchanged when all disturbances including mining are considered. Assuming a worst-case scenario of mining disturbance (no renewed emphasis on reforestation and fill minimization) the same study found that the area would maintain adequate PEC scores to support healthy and abundant terrestrial and aquatic life. So, even absent the scientific

evidence showing the minimal/beneficial effects of mining, the minute scale of disturbance would not justify the sweeping changes and restrictions contemplated under this section.

Page III.C-3, Energy Sources and Plant Communities:

> *Headwater energy sources are important, not only to invertebrates and vertebrates in upper reaches of the watershed, but excess organic carbon is subsequently utilized by life forms in all stream orders down gradient. Since streams have a unidirectional flow, downstream areas are also dependent on upstream areas for portions of their energy.*

This statement leaves the impression that energy can only be supplied by headwater streams. Research conducted by the coal industry in conjunction with the EIS indicates ponds and wetlands constructed during the mine reclamation provide similar, adequate sources of downstream energy:

> **The streams with valley fills have a sediment retention pond located typically in the most upstream reaches of the stream just below the fill area. These ponds carry out a similar function for the upstream reaches of the streams. In the ponds, biological communities are established which are dependent on algal growth, not leaf litter, as a food source. The algae and detrital material flowing from the ponds act as the food source for the downstream communities.[28]**

In addition, upon completion of the reclamation process, vegetation will have returned to the area, replacing the coveted "aquatic-terrestrial interface". Further,

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[27] *Kentuckians for the Commonwealth v. Rivenburgh*, 317F.3d. 425 (4th Cir. 2003).
[28] Arch Coal Supplemental MTR/VF EIS Study Report, April 2002

fisheries research conducted below mining impacted watersheds indicates that healthy and diverse fish populations are thriving. According to the River Continuum Concept that is postulated as the true value of headwater streams, one must assume that sufficient energy input is occurring in the stream to support these downstream communities.

Page III.C-5, Organic Matter Processing, general comment, entire section:

The entire discussion presented in this section is devoted to an explanation of the River Continuum Concept (RCC). This theory suggests the health of an entire river ecosystem is associated with organic energy that is processed in headwater stream reaches and subsequently transported downstream. The RCC forms the basis for many of statements made in the EIS regarding the possible effects of valley fill construction in headwater streams.

The RCC may be inapplicable to the steep-sloped terrain and stream systems of Central Appalachia for several reasons. First, the RCC assumes a pristine environment, which is certainly not the case in the study region:

> **The Appalachian coalfields provide almost limitless opportunities for watershed improvement, following almost 100 years of abandoned mine land (AML) problems. Mine drainage pollution, eroding spoil on the down slope, clogged stream channels, abandoned highwalls and coal refuse areas, and other orphan land problems exceed the capacity of the SMCRA AML Trust Fund. Many of the problems are such low priority that it is unlikely that the AML program will ever address them. EIS page_____**

Second, the RCC assumes that extreme headwater stream reaches provide the only opportunity for energy inputs to the river system through the aquatic-terrestrial

interface that occurs in forested headwater streams. This is not the case in the study area. Research conducted by mining companies confirms that energy inputs continue in mining watersheds regardless of the level of impact in associated headwater areas because most of the streams below mining areas are forested:

> **The cumulative impact study found that over 80% of first to third order streams in the EIS study area are surrounding by forest.** EIS III.D-18.

III.D-1, Loss of Linear Stream Length from Filling and Mining Activities Associated with Fills, General Comment

The findings of the EIS technical studies which are referenced in this section further illustrate the need for the agencies to view potential impacts of mountaintop mining in terms of scope and scale. Only 2.05% of the total stream miles have been directly impacted by valley fill construction and mining activities, and projected future impacts will total only 4.10% of the total stream miles within the region. Absent the renewed emphasis placed by the agencies on mitigation, with a preference for on-site, in-kind mitigation, mining will not result in the mass elimination of headwater streams. As the coal industry, SRAs and the COE implement new mitigation techniques in accordance with the recommendations of the EIS, it likely that the stream segments directly impacted by mining will be more than offset by either stream/wetlands creation during reclamation and/or water quality improvement projects undertaken by operators.

Page III.D-2, Loss of Biota under Fill Foot Print or from Mined Areas,

General Comment:

The Associations do not dispute that the biota present within the fill footprint are lost once fill construction has been completed. Based on the results of the CIS, the benthic organisms common in headwater streams that are subject to fill activity are by no means in danger in the study area. With a mere 4.10% of the streams in the study area projected to be impacted by mining operations, sufficient habitat for these macro invertebrates will continue to exist in the study area. The concern for the biota of these streams should not focus on the minute fraction impacted directly by fill construction, but the ability of reclamation and mitigation to replace the function of these benthic species in the overall aquatic system. EIS Appendix D, *Value of Headwater Streams* concludes that the single most important feature of the biota of headwater streams is to provide energy input to support the health of the streams down gradient of the headwater areas. Subsequent technical research has demonstrated that sufficient energy inputs continue to exist below filled areas.

These studies are summarized on page III.D-9 of the EIS:

> **Overall the abundance of macro invertebrates was found to be similar in upstream and downstream stations or to be slightly higher in downstream stations.**

Other industry sponsored research supports this conclusion:

> **Increased abundance at the filled sites, as compared to the unmined sites and the presence of a similar shredder community**

> **indicates that sufficient food is available to support a benthic community and that downstream communities are likely receiving particulate organic material from these more upstream segments.[29]**

This conclusion is confirmed by the USGS Fisheries Study that found some of the healthiest fish populations in watersheds associated with large scale surface mining and valley fill construction.

In summary, it is reasonable to assume that the energy processing and transport will continue. . Mountaintop mining will potentially impact only 4.10% of the total stream miles in the study area, 60% of which are first order headwater streams, dispelling any myth that mining and valley fills are eradicating all headwater streams. Benthic research has demonstrated that abundance remains high below fills and that the ponds and wetlands created during reclamation are providing their own energy inputs to the stream reaches. The USGS fisheries survey confirms the benthic research, finding that heavily surface mined watersheds supported healthy and diverse fish populations.

Page III.D-5, Changes in Downstream Chemistry:

> *Comparisons to AWQC were performed with a subset of the total data set as explained in USEPA (2002a). Selenium concentrations from the filled category exceeded AWQC for selenium at most (13 of 15) sites in this category.*

Finding selenium concentrations above the suggested criteria can be expected given the overall background levels of selenium present in the native soils of the

[29] Arch Coal Supplemental MTR/VF EIS Study Report, April 2002

area. Similar concentrations can be expected below any land disturbing activity in the region:

> **…we see that in the region of MTM/VF mining, the coals can contain an average of 4ppm of selenium, normal soils can average 0.2ppm and the allowable limits are 5 ug/L (0.005 ppm). Disturbing coal and soils during MTM/VF could be expected to result in violations of the stream limit for selenium [30]**

> *While improvements in pH, iron and manganese were seen , median concentrations of sulfates among all sites increased from 38 mg/L to 56 mg/L in the north and, and from 46 mg/L to 77 mg/L in the south.*

The presence of sulfate, as noted in the narrative, is indicative of disturbance, not necessarily mining induced disturbance . This conclusion is confirmed by the presence of similar sulfate levels below a large scale mining operation in Ohio that did not involve fill construction.

> *In the USEPA (2002a) stream chemistry study, selenium was found to exceed AWQC at Filled sites only and was found to exceed AWQC at most filled sites included in the study.*

As noted in previous comments, selenium is inherent in the soils and coal of the region.

> *The existence of selenium concentrations in excess of AWQC at most of the filled sites indicates a potential for impacts to the aquatic environment and possibly to higher order organisms that feed on aquatic organisms.*

[30] U.S. Environmental Protection Agency. *A survey of the Water Quality of Streams in the Primary Region of Mountaintop/ Valley Fill Coal Mining.* 2002.

This statement is misplaced given the level of understanding relative to selenium impacts and technical research that found healthy aquatic communities in watersheds exceeding the suggested water quality criteria for selenium.

The EIS chemistry study, from which the above cited EIS narratives are drawn, mentions the effects of selenium based on research conducted by Lemely in lotic (non-flowing) habitats, specifically a large pond with extended water retention times. This is a vastly different situation than what exists in the headwater streams of Central Appalachia. Therefore is incorrect to extend the results of the Lemely studies to this EIS.

EPA is currently in the process of revising the suggested water quality standard for selenium. In February 2002 the agency published a draft of these revisions. Among the conclusions and observations included in the draft document are several that are relevant to this EIS and the assertion that detectable selenium concentrations in the water column are indicative of negative impacts.

> **Since the issuance of the 1987 chronic criterion of 5ug/L, considerable information has come forth regarding the route of exposure of selenium to aquatic organisms. Studies have shown that diet is the primary route of exposure that controls chronic toxicity to fish.**
>
> **…diet controls selenium chronic toxicity in the environment and water-only exposures require unrealistic aqueous concentrations in order to elicit a chronic response…**
> ***…a water-based criterion is not appropriate for selenium*** **because diet is being the most important route of exposure for chronic toxicity.**

> **If the organisms are provided with an uncontaminated diet, then *exceedingly high water concentrations, possibly above the acute criterion, are needed to elicit effects…***
>
> **Sediment has also been proposed as a medium upon which to base the selenium chronic criterion, but because of the patchiness of selenium in sediment and an insufficient amount of data to support a casual link between concentrations of selenium in sediment and the chronic effects observed in fish, a sediment-based criterion was not selected.** [31]

Considering the findings of EPA in the draft revised selenium criteria, that water column concentrations of selenium are not correlated to toxicity in fish and that the natural background of selenium present in the soils of the study area, it is clear that application of the current suggested water quality criteria for selenium should be reconsidered.

The USGS fisheries survey supports both EPA's revised selenium water quality criterion and clearly demonstrates that selenium concentrations in the study area have not impacted the aquatic community in the study area. The EIS chemistry study found detectable levels of selenium on sampling sites within the Clear Fork Watershed:

Site	Selenium Concentration
MT-62	2.8 ug/L
MT-64	13.0 ug/L

Despite these concentrations, the USGS Fisheries Study concluded:

[31] See generally *Draft Aquatic Life Water Quality Criteria for Selenium 2002*, EPA Contract No. 68-C6-0036 (March 2002 Draft).

> **Clear Fork at Whitesville…had good scores in most of the four proportional metrics;**
>
> **Among Kanawha River sites, Clear Fork at Whitesville…scored among the best sites in several structural metrics…**
>
> **Among Kanawha River streams, Clear Fork at Whitesville…ranked among the best sites in several species composition metrics.**[32]

Given the current status of the selenium water quality criteria, the natural background levels of selenium present in the soils of the region and the inability of the EIS studies and other technical research to correlate impairment to any specific parameter verbiage inferring impacts from selenium should be deleted from the final EIS. Thus, the best approach to possible water-quality induced impacts is presented in the final paragraph of the summary and conclusions section:

> **Further evaluation of stream chemistry and further investigation into the linkage between stream chemistry and stream biotic community structure and function are needed to address existing data gaps.**

Page III.D-7, Changes in Downstream Sedimentation (Bed Characteristics)

> *…the mean substrate size class was found to be very similar between unmined, filled, filled residential and mined EIS class sites.*

Data summarized in this section demonstrates that the sediment control requirements of SMCRA are functioning and preventing offsite impairment.

Page III.D-8, Effects to Downstream Biota

[32] U.S. Geological Survey. *Fish Communities and Their Relation to Environmental Factors in the Kanawha River Basin, West Virginia, Virginia, and North Carolina 1997-1998.* 2001

h.1. Summary of Results from Upstream-Downstream Comparison Type Studies

> *Overall, the abundance of macro-invertebrates was found to be similar in upstream and downstream stations or to be slightly higher in downstream stations.*
>
> *The largest difference seen between upstream and downstream locations was the change in proportion of sensitive groups.*

The results of these studies demonstrate that valley fill construction and mining activity are not having an adverse impact on streams. A mere shift in community structure does not constitute degradation, especially if sufficient energy remains for transport downstream. According to the results of these studies, streams with mining activity in their headwaters are still carrying out the primary function of pristine headwater reaches.

h.2. Results of Comparison of Pre-mining Biotic Conditions to Post-mining Aquatic Communities

> *The authors of this report stated that a qualitative comparison of current to past results suggests that the aquatic macro invertebrate community has undergone a shift to a more tolerant, less sensitive community. Changes in the downstream station were similar to those seen at the upstream station for abundance and taxa richness. However, the diversity and evenness of the downstream macro invertebrate communities decreased…and the proportion of tolerant organisms increased notably…*

The studies cited in this section analyzed mining and disturbance, not necessarily valley fill construction:

> *These studies did not specifically address the presence of or potential impacts from valley fills.*

This ongoing project confirms the results of other studies referenced or included in this EIS. As in the OSM COCCo Study, a shift was observed in the downstream benthic community that appears commensurate with disturbance of the native rock and soils. This shift cannot be termed impairment however, unless the downstream reaches of the watershed are failing to receive adequate energy inputs. Other studies have confirmed that sufficient energy is being provided by mining-related structures and that no net-reduction in watershed productivity and diversity has occurred.

h.3. Results of A Multivariate Analysis Study on Benthic Invertebrate Communities and Their Responses to Selected Environmental Factors

> Coal mining appeared to influence invertebrate communities through two factors…

h.4. Studies of Macro invertebrate Communities in Stream Sites Located Downstream from Mined/Valley Filled Areas in Comparison to Reference Locations

> *Biological conditions in the unmined sites generally represented a gradient of conditions from good to very good, based on the WV DEP SCI scores…*

The wide variability of the scores on the unmined reference streams demonstrates a known fact that is mysteriously absent from the discussions in the draft EIS. Headwater streams are extremely unstable systems in their natural condition as they rely primarily on rain-induced runoff to sustain life and contribute to the synergy of the aquatic ecosystem:

> One[unmined] site scored in the high-end of the fair range in the summer of 1999, one site scored in the poor range in the fall of 1999, and one site scored in the high-end of the fair range in the winter of 2000.

> *Biological conditions in the filled sites generally represented a gradient of conditions from poor to very good…However, over a third of the time, filled sites scored in the good or very good range over the five seasons.*

This statement is probably the most important contained in the EIS and it deserves more attention and focus. Readily apparent is the reality that filled streams are supporting the aquatic processes that receive so much attention as the source of life throughout the stream system. In a region that suffers from multiple water quality stressors such as AML drainage, lack of infrastructure and failing wastewater treatment systems, the effects of valley fill construction appear negligible.

> *The authors believe water quality explains the wide gradient in the biological conditions at the filled sites.*

The OSM COCCo. Study documented increased conductivity below mining that did not involve valley fill construction, demonstrating that increased conductivity should be expected with any human development (mining, residential or highway construction) or natural disturbance (land slides). Again, the background natural conditions of the area appear to make such situations unavoidable. Any development or improvements that are going to occur in the region are going to involve land disturbance- earth and rock will be excavated, and fills will likely be

built whether it is for mining, roads, schools, housing etc. Based on the research presented in this EIS, all of these activities will be expected to have similar increases in conductivity. Since the inherent geological and topographic features of the area are such that excavation and fill construction is required in connection with development and mining, the question should not be if conductivity is increased, but what effect conductivity has had on the stream system as a whole. In our comments on other sections of the EIS, the Associations have presented the results of studies conducted for the EIS, by coal operators in conjunction with the EIS , independent of the EIS but within the study area and outside of the study area but related to the subject at issue. The bulk of this research documents a ***shift*** in the biologic community below ***disturbance***. There is some question as to how directly this shift can be correlated to particular water column parameters including conductivity:

> **Differences between the benthic macro invertebrate communities in the unmined and filled sites were evident in metrics involving the mayfly population which decreased below the fill sites. Stoneflies were prevalent in these sites, however, indicating that water quality may not be the limiting factor for the absent mayflies as they are both sensitive taxa** [33] ____

Whatever the cause, it is overly apparent that this change does not correlate to impairment. In fact, by supplying a more constant source of energy to the stream below (though wetland and pond construction), mining may improve the health of the watershed.

Biological conditions in the filled and filled/residential classes were substantially different from the conditions in the unmined class and were impaired relative to conditions in the unmined class, based on the WV SCI scores.

From the results of the EPA Streams study and other related research, it is apparent that the aquatic communities were **different** among the classes, but not impaired:

> **Overall, the filled sites are only significantly different from the unmined sites with respect to the percentage of the population comprised of mayflies.**[34]

As noted in our earlier comments, ponds and wetlands are constructed during the mining process to control sediment and in some instance attenuate flow. These wetlands and ponds influence the composition of the benthic community:

> **Changes in the benthic macro invertebrate community structure below impoundments are well documented…These changes may result from flow constancy, organic loading , temperature changes or a combination of factors…mayflies and stoneflies are often eliminated below impoundments.**[35]

The elimination of the mayfly taxa CANNOT be linked to impairment as the EIS narrative attempts to do:

> **Below the filled sites, the sensitive EPT taxa still comprised an average of 50% of the population.**
> **Also of interest below the fills is the presence of a shredder community very similar to the unmined reference streams…The similar communities in the filled and unmined streams indicate that the downstream reaches of the streams are being supplied**

[33] Arch Coal Supplemental MTR/VF EIS Study Report, April 2002
[34] Arch Coal Supplemental MTR/VF EIS Study Report, April 2002
[35] ibid

> **with coarse and fine organic material which are the major contribution of headwater reaches described in the river continuum theory.[36]**

The cited EIS statement should include a qualifier regarding the stream size sampled in the study. Generally, all of the streams sampled below valley fills were larger streams than those sampled in the unmined/reference class. The unmined reference sites were located on first and second order streams while the filled sites were located on third, fourth and fifth order streams. Changes in the composition of the aquatic community are expected as stream order increases .

Page III.D-15, Impacts of MTM/VF on Fish Assemblages

> *The USGS (2001b) found that stream size and zoogeography masked any potential water quality effects of land use on species composition and relative abundance of fish communities in the area.*

This statement appears to be a weak attempt at explaining away the findings of the USGS fisheries survey. The specific results of this study are enormously important to this EIS. This study determined that one of the healthiest fish communities existed at Whitesville, on the Clear Fork tributary to the Coal River. It is a well-known fact that this watershed has been heavily mined, with most recent extraction occurring in the form of surface mining with valley fills. The EIS Chemistry study found detectable levels of selenium within the watershed, yet the USGS Fisheries Report observes a healthy and diverse fish population.

[36] ibid

The USGS Fisheries Report also designated streams as impaired that were associated with mining activity. However, both of the watersheds are more correctly identified as areas of **historical** mining. Both of these watersheds have identified sources of serious AMD and sedimentation impacts from pre-SMCRA activities.

Page III.D-15:

> *For example, fish collected from one lake downstream of an extensive mining complex in West Virginia were found to contain selenium concentrations much higher than would be expected to occur naturally, indicating that the selenium associated with mining operations occurs in a form that is biologically available for uptake into the food chain (U.S. FWS, unpublished data).*

This reference is entirely inappropriate and should be deleted from the final EIS. First, there is no place for unpublished, un reviewed data in a document of record such as this EIS. Second, "concentrations much higher than would be expected to occur naturally" contradicts assertions made in the EIS chemistry study which recognized that the natural background levels of selenium in the soil, overburden and coal approach the limit established by the current water quality criterion implemented in West Virginia. Third, as this is unpublished data, other possible sources selenium such as non-mining land disturbance cannot be identified.

Page III.D-17 Studies Relating to Mitigation Efforts for MTM/VF Impacts to Aquatic Systems

Past efforts at compensatory mitigation have not achieved a condition of no net loss of stream area or functions.

This statement is unqualified, conflicts with subsequent statements made under the same narrative section and should be deleted from the final EIS. A similar prevarication is repeated in the fist paragraph on page III.D-21. Our comments address both statements.

Mining companies have routinely created structures as part of the SMCRA mining and reclamation plan that serve to offset the loss of headwater streams from fill construction. At the same time however, these companies also satisfied the existing COE mitigation requirements imposed by the respective states and not characterized these structures as "mitigation" projects.

In the EIS technical study *A Review of Wetland Resources in the Steep Slope Terrain of West Virginia*, EPA found that few traditional wetlands existed prior to the initiation of surface mining and areas that had no surface mining had no wetlands:

> **…the percentage of vegetated wetlands (PF,PEM,PSS designations) existing in these watersheds is extremely low, representing less than 1/10 of 1% of the watershed in all cases. The majority of the NWI wetlands in these watersheds appear in most cases to be sediment ponds associated with mined sites.**

Other statements in this technical study strive at discounting the value of these created areas by declaring them "unvegetated" wetlands. However, as cited previously in our comments regarding stream function and the biologic condition

of streams affected by mining, these wetlands and ponds are providing similar, if not superior energy input to the watershed, eliminating any reduction from the headwater streams impacted directly by construction of valley fills. The EPA review of wetlands goes on to state that isolated wetlands created within the mined area can be enhanced to further supplement and therefore "mitigate" the loss of headwater stream reaches:

> **…opportunities do appear to exist for the creation of functioning wetland systems on mined sites. Planned wetlands, if incorporated into the restoration design, can provide valuable functions by enhancing sediment stabilization, water quality improvement, and wildlife habitat on mined sites.**

With respect to habitat creation, further enhancements may be possible but EIS terrestrial studies have shown that mining-created wetlands are indeed increasing the wildlife diversity of the study area and that several terrestrial species not traditionally associated with the Central Appalachian region have been observed utilizing mining wetlands.

Research conducted by mining companies in conjunction with the EIS have also documented the unique and beneficial habitat provided by mining created wetlands, the results of which are summarized in this section of the EIS:

> **When comparing total abundances and taxa between the ponds, the study found that two of the ponds contained large total abundances of aquatic insects and a desirable number of taxa.**[37]

[37] Pen Coal Corporation-REI Consultants. An Evaluation of the Aquatic Habitat Provided By Sediment Control Ponds and Other Aquatic Enhancement Structures Located on Mine Permitted Areas in Southern West Virginia. 1999

Similar conclusions can be regarding the conveyance ditches or "groin" ditches created on valley fills:

> **During the development of this EIS, technical representatives from OSM and from West Virginia have suggested that groin ditches constructed along the edges of fills may represent an opportunity for the in-kind replacement of streams with an intermittent or perennial flow regime. To date, no drainage structures observed appear to have successfully developed into a functioning headwater stream. EIS III.D-18.**

As noted in our preceding comments, reconstructing headwater streams historically never the goal of these structures. Instead, their design and construction was intended to satisfy the hydrologic requirements of SMCRA and to preserve/assure the stability of the valley fill. These functions must remain the primary objective of the ditches, as they are obviously working (no pattern of fill instability identified by the EIS technical studies). However, if these areas could be enhanced as described in this section and continue to assure the stability of the fill area this opportunity should not be ignored, since it would essentially equate to double the length of the original headwater impacted by the valley fill placement. The renewed emphasis on mitigation that has emerged from preparation of the EIS and permeates all the suggested alternative actions must acknowledge the ability of these SMCRA structures to serve as mitigation and the alternatives should include the direction to develop a BMP manual for further enhancing the values that can be provided by these structures.

Other historical, state mitigation measures focused on stream restoration through water quality improvement. As earlier sections of the EIS recognize, the study

area provides limitless opportunities for mitigation through the remediation of existing water quality stressors such as AMD discharges and installation of public waste water treatment systems. For brevity, we will not repeat extensive comments on this subject made in previous paragraphs, but only observe that state imposed and COE accepted "remediation mitigation" goes further towards satisfying the overall objectives of the CWA than does the current focus on headwater stream creation/ preservation.

In 2001 the National Research Council (NRC) released a comprehensive report regarding the s §404 dredge and fill program titled *Compensating for Wetland Losses Under the Clean Water Act.* In this review, the NRC provided 10 guidelines for implementing the mitigation requirements of the §404 program. Chief among these suggestions was a focus on restoration over creation. State mitigation programs, particularly in West Virginia, favored these types of projects. In the case of public waste water system installation, these mitigation efforts provided another immeasurable benefit: community improvement through infrastructure installation. As the socio-economic sections of the EIS acknowledge, the overwhelmingly majority of the study area is extremely rural and extremely small, isolated communities abound. The likelihood of publicly-funded improvement projects being developed in these areas, absent facilitation through coal mine mitigation, is slim to none.

Past mitigation practices that encouraged and accepted wetlands and water quality remediation either through AMD elimination or community infrastructure

improvement should not be summarily dismissed by the draft EIS as cited statement attempts to do and the current mitigation initiatives underway cannot ignore the benefits of this "remediation mitigation".

IV. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES ANALZED

B. AQUATIC RESOURCES

Page IV.B-2, last paragraph:

> *...the length of stream buried by mining or valley fills displaces the biomass and proportionate amount of energy provided by fine and coarse particulate material leaving a particular reach of headwater stream.*

This fact in unarguable, however there is no indication that sufficient biomass and energy inputs do not occur in the stream reaches below the filled areas.[38] Further as we have identified in previous comments on other sections of the EIS, wetlands and ponds created during the mining process adequately offset this direct loss. The scientific research used to support these comments also indicates that by providing a more constant flow of energy input, these ponds and wetlands may provide superior contributions to the synergy of the stream system below. Since the ponds at the toes of valley fills are constructed commensurate with mining activity, any reduction in energy inputs would only be temporary in nature.

> *Consequently, leaf litter exclusion as a result of MTM/VF may affect productivity downstream due to this terrestrial aquatic relationship.*

There is no argument that valley fill placement eliminates the aquatic-terrestrial interface that exists within the fill footprint area. However, EIS technical studies have determined that some 80% of the streams in the study area are forested, indicating that substantial aquatic-terrestrial zones exists downstream of the headwater reaches that can be directly impacted by fill construction.[39] Further, most of the stream miles in the study area (60%) are headwater streams. Given the minute scale of current and potential mining impacts, adequate aquatic-terrestrial interface areas will continue to exist.

Page IV.B-3

> *The No Action Alternative and action alternatives will not eliminate the loss of stream segments and reduction in organic matter transported downstream. In the absence of standardized testing and research, it is not clear to what extent this direct stream loss indirectly affects downstream aquatic life.*

This statement incorrectly assumes that some reduction the energy transported downstream has occurred despite scientific evidence to the contrary. Similar fallacious statements in preceding sections of the EIS were addressed in detail in our comments on those sections. However, to be complete we will summarize these comments here. The EIS technical studies found a wide range of conditions below valley fills, suggesting that stream health is preserved below fills:

> **Biological conditions in the filled sites generally represented a gradient of conditions from poor to very good…however, over a**

[38] U.S. Fish and Wildlife Service, *The Value of Headwater Streams: Results of a Workshop.* 1999, EIS Appendix D.
[39] Ibid.

third of the time, filled sites scored in the good or very good range.[40]

As we have noted in detail in our comments on other sections of the EIS, the EPA benthic study referenced above did not account for or acknowledge the influence of stream order on benthic populations. Benthic assemblages are expected to be different from 1st and 2nd order streams that are ephemeral and intermittent in nature as were the unmined reference sites opposed to the filled sites in the study which were generally located on 3rd order streams that flowed constantly, possibly as a result of valley fill hydrology.

Industry supported research referenced extensively in our earlier comments has determined that the presence of ponds and wetlands at the toes of fills may provide superior energy inputs through the creation of an aquatic community that processes algae, coupled with increased and constant flow created by fill hydrology.

It is also not evident to what degree reclamation and mitigation (e.g., drainage control and re vegetation) offset this reduction

As with the previous section, this statement assumes that a reduction has occurred in areas of fill construction and our comments above are applicable here as well. As to the ability of mitigation to replace any possible reduction, the industry sponsored research and EIS technical studies suggest that stream reaches below

[40] U.S. Environmental Protection Agency. A Survey of the Condition of Streams in the Primary Region of Mountaintop Mining/Valley Fill Coal Mining. 2000.

the filled areas as well as ponds, wetlands and drainage ditches constructed as part of the mining process can continue to supply adequate, energy downstream.

Page IV.B-4

> *Stream chemistry showed increased mineralization and a shift in macro invertebrate assemblages from pollution intolerant species to pollution tolerant species.*

The degree to which this increased mineralization affects the downstream aquatic community is unknown given the findings of the EIS technical studies and other scientific research indicating the presence of healthy aquatic communities below mined and filled areas. Further, use of the terms "pollution-tolerant" and "pollution-intolerant" fall far short of properly characterizing the conditions in mined and filled areas given the results of similar research and the influence of such variables as stream order.

Page IV.B-5

> *The Aquatic Impacts Statistical Report indicated that ecological characteristics of productivity and habitat are easily disrupted in headwater streams…the analysis indicated that biological integrity is hampered by mining activity and that unmined sites have higher biotic integrity with more taxa and more sensitive taxa.*

This statement is misleading, patently false and should be deleted from the final EIS. The referenced results of the Statistical Report are suspect. The authors of the study excluded industry-submitted data indicating healthy stream populations, arbitrarily dismissing it as "non representative" of the study area. The Statistical Report emphasized perceived impacts from mining and fill construction while

discounting or dismissing the lack of differences between the filled and unmined reference streams.

Selenium and zinc were negatively correlated with the WV SCI.

Concerns regarding the applicability of the WV SCI to the southern West Virginia region of the study area have been presented in comments on other sections of the draft EIS.

> *The strongest association with water chemistry suggested that zinc, sodium, and sulfate concentrations were negatively correlated with fish and macro invertebrate impairments*

The value of this statement, aside from presenting inflammatory verbiage, is further questionable given the caveat presented in the Statistical Analysis with regard to fish communities:

> *...these correlations do not imply a causal relationship between the water quality parameters and fish community condition.*

Subsequent statements in the EIS narrative correctly note that the statistical results are far from conclusive and by no means support the sweeping proclamations made in the above cited portions of the EIS:

> **However, the study also concluded that insufficient data existed to determine the temporal nature of the impact or the distance downstream that the impacts persists. Due to the limited scope of the studies performed by the EIS no correlation could be made of downstream impacts with the age, number, and size of mining disturbances and fills, nor could data differentiate impacts of mining, fills or other human activity in a watershed. EIS IV.B-5.**

Also worth noting is that the Statistical Report did not correlate selenium elevations to fish community impacts as the Fisheries Report attempted to do, casting further doubts on the validity of both studies.

The Associations maintain that the balance of EIS technical research has identified a shift in benthic communities, a shift that can be attributed to a number of factors and a shift that is by no means disadvantageous. Similar shifts were found below mining related disturbance that did not involve valley fill activities at a site outside of the EIS study region suggesting that similar results can be expected below any disturbance within the general Appalachian region.

> *Constructing wetlands is a possible mitigation measure for impacts to headwater streams.*

The positive benefits provided by mining created wetlands have been identified in technical studies and summarized in comments on other sections of the draft EIS narrative.

> *Other human development activities, such as logging and other types of excavation, also pose potential threats to the nutrient cycling function, sedimentation, and other physical, chemical, and biological impacts to headwater streams in the EIS study area. However, the permanent nature of filling discussed under direct loss, as compared to the more temporary impacts from forestry suggest that MTM/VF impacts of headwater stream systems may have a longer-term impact on this system, although data do not currently suggest the duration of these impacts.*

This statement fails to consider the scope and scale of potential mining impacts and suffers a flaw that is unfortunately common in this draft EIS: an overbearing concern with the functions provided by headwater streams.

The CIS study has determined that 59,000 miles of streams exist within the study area and that 60% of these streams are headwater areas. The same study estimated that 1.23% of the streams have been impacted by past and current mining and valley fill activity and that 4.10% of the total stream miles could potentially be impacted by future mining. These results confirm that mining is affecting a relatively minute fraction of the total streams within the study area.

Threats, or more properly stressors to watersheds in the study area are well documented. On page IV.B-9 for example, the EIS acknowledges that the Central Appalachian coalfields provide almost limitless opportunities for watershed improvement. These narrative sections concur with an EPA study initiative that predates the draft EIS:

> **In general, the biological assessment results appear to indicate these are poor water quality streams prior to the impact of mining operations and valley fills.** [41]

Given the reality of stream conditions in the region, the focus on the functions of headwater streams seems misplaced. As confirmed by certain sections of this EIS, the streams of the region are impaired by a variety of stressors unrelated to current mining. Therefore the function of the headwater stream (energy input) may be

worthless if the downstream reaches of the watershed are impaired because of other impacts. As we have noted in our earlier comments regarding mitigation, the environmental condition of the study area could have been markedly improved had the massive amount of resources and attention directed by anti-mining groups and the agencies at MTM/VF impacts to headwater streams had been focused on the remediation of existing water quality problems of the region.

Page IV.B-10

> *As a result of all alternatives involving mitigation, there will be a strong disincentive for the applicant to disturb stream segments.*

This statement assumes that practical alternatives to valley fill construction exist for the mining industry and ignores the substantial amount of information collected by the EIS and summarized in the mining technology sections of the document. Because of the very nature of the topography and geology of the study area, the native rock and soil excavated to facilitate mining (both surface and underground) will "swell" and not all of it can be returned to the mined area even under the most rigorous application of SMCRA's AOC mandate. Consequently, some of this excavated material MUST be placed in a valley fill. A "strong disincentive for the applicant to disturb stream segments" already exists through compliance with SMCRA imposed AOC requirements and the 404(b)(1) guidelines of the CWA programs of the COE and EPA. The reality of increased

[41] U.S. Environmental Protection Agency. *Analysis of Valley Fill Impacts Using Macroinvertebrates*. Draft Final Report. 1998.

and what appears to be punitive mitigation requirements will not result in further minimized fills, it will only add yet another economic constraint on the ability to mine coal in this region, since other sections of the EIS narrative and the EIS mine engineering technical studies confirm that the physical and economic recoverability of coal reserves is directly correlated to the amount of fill space available. Another unfortunate result of punitive mitigation measures will be seen in post-mining land use development. The EIS has correctly observed that the lack of stable, flat land remains a substantial barrier to the economic diversification and social stabilization of the region. MTM/VF offers the unique opportunity to create such flat and stable areas at no public cost. However, any area suitable for development will need to be flat, require a variance from the AOC requirements of SMCRA and possibly place more fill material in stream segments. The punitive and overly restrictive mitigation measures contemplated in the EIS such as conservation easements will discourage these types of developments despite a clear and proven economic and social need for their creation. In short, these mitigation measures are more akin to penalizing the citizens and governments of the study area by complicating the private property rights of landowners in the area, frustrating efforts to diversify the economy while at the same time limiting the viability of the coal industry.

Accordingly, the final EIS should focus not on the ability of mitigation to discourage fill placement as fill minimization is already addressed not only through SMCRA but the 404(b)(1) guidelines

Page IV.D-5 d. fish populations, general comment, entire section:

As with other sections of the EIS, the statements in this section fail to account for the scale and scope of mining impacts. If headwater streams are indeed hotbeds of evolution, according the EPA CIS analysis only 4.10% of the streams in the study have or could be affected by mining. Considering that headwater streams comprise the largest portion of the region's streams at 60% of the total stream miles, sufficient areas will remain intact for the occurrence of "natural selection process that may result in the development of new species/subspecies".

Regarding the results of the EIS Fisheries Study, the Associations maintain that this study cannot be relied upon to deduce MTM/VF impacts. The study was extremely limited in scope and compared to patently different areas (New River and eastern Kentucky). The USGS Fisheries Survey found two of the healthiest fish populations in the area studied in watersheds associated with large scale surface mining and valley fill construction.

a. Terrestrial

II. C.

Deforestation (page II.C.-75)

General Comment

Any possible impacts from mining activities must be considered in terms of scope. As paragraphs in this section note, technical studies conducted as part of this EIS

have found that the dominant land use of the area is forestland with 92% of the area being densely forested. Mining has disturbed only about 3% of the region. The same study determined that mining, in conjunction with all human disturbances, would only affect about 11% of the area. Therefore, a large-scale elimination of forested areas is not going to occur in the region. Further, a renewed emphasis is being placed on tree growth as a result of this EIS. Considering that mining offers the opportunity to create soils that are superior to native soils and that tree growth on reclaimed mines is possible if traditional SMCRA imposed barriers to reforestation are addressed, the potential impact estimates are likely liberal and forecast a much greater decrease than will actually occur.

Page II.C-76, first paragraph:

> *Post Mining Land Uses without trees were historically perceived to be easier to achieve and less costly, as well as result in a shorter liability period for release of performance bonds.*

This statement fails to consider all the factors that influence the selection of a PMLU, such agency and community preference and regulatory achievability. As noted in the next paragraph, the reason that reclamation with trees is not more widespread is mainly attributable to SMCRA regulation and requirements related to erosion control and stability.

Page II.C-76, last paragraph.

It is possible other economic incentives could encourage reforestation.

A reference to mitigation should be added to this discussion. As noted elsewhere in the EIS and its appendices, the value of headwater streams subject to valley fill construction is the terrestrial-aquatic interface. Any reforestation initiative that is coupled to a stream restoration/mitigation project would further replace this function. Accordingly, reforestation should be considered when assessing required mitigation, as noted by the first paragraph under section a.1, CWA Program on page II.C-7:

> **The protection and/or restoration of forested riparian habitat as part of aquatic resource enhancement may result in mitigation credit by the COE for CWA section 404 permits.**

Page II.C-83, Action 14, general comment, entire paragraph:

> *Action 14: If Legislative authority is established by Congress or the states, the SMCRA regulatory authorities will require reclamation with trees as the post mining land use.*

Advocating such an action is unwise. As noted in our previous comments, no evidence exists that mining activities will result in massive deforestation of the region. The CIS determined that mining and all other human disturbances will only impact about 11% of the existing forested areas within the study area. Assuming the worst case scenario, that all future mining would result in the replacement of dense forest with other habitats the region will remain 87.5 % forest land.

A programmatic tree growth mandate imposed through Congressional edict would remove the opportunities for mining to create alternative land uses and conditions. Suitable land for development remains one of the greatest social and economic barriers in the region. Mining offers a unique opportunity to improve the usability of lands that are otherwise steeply sloped and undeveloped with little or no additional cost. Economic diversification and social stabilization (by relocating flood prone communities) are real possibilities only if alternative post-mining land uses, other than reforestation, are preserved in the regulatory program.

Page II.C-90, Section 11, Threatened and Endangered Species, General Comment, Entire Section:

As noted in our previous comments, the statements and assumptions fail to consider the scope of the activities in question. The CIS determined that mining affects only a small portion of the study area, which will remain dominated by densely forested areas. The same technical study found that headwater streams comprise 60% of all streams in the region and that mining has the potential to impact only 4.10% of these streams. In preparing the BO, the agencies MUST consider these factors. It is very apparent that neither mining nor any human activity is going to result in massive elimination of existing fish and wildlife habitat.

The EIS terrestrial studies failed to show that current mining and reclamation practices were adversely impacting existing wildlife assemblages. In fact several species thought to be rare and declining in the study region were actually found in

reclaimed areas. For example, the edge effect created by mining disturbance was determined to be a habitat for Cerulean Warblers.

To be adequate, the BO must also consider the positive effects of mining-created habitats for certain species of wildlife. The terrestrial technical studies found several species on reclaimed mined lands that were rare in the study area. Several of these unexpected species are also targeted for conservation efforts. However, at least one of the technical studies went to great lengths to ignore these terrestrial gains. The same mistakes cannot be repeated in the BO if it is to adequately protect T&E species.

Page III.B-11 Last three paragraphs concerning topsoil:

The statements and observations made in these paragraphs imply that topsoil is the most important factor in establishing tree growth. It is common knowledge that the native topsoils of the area are remarkably thin and subject to "wasting" or being destroyed or lost during any efforts to collect and stockpile them for later use. Such statements conflict with EIS technical studies, research conducted independent of the EIS and even statements made in subsequent paragraphs of the narrative.

EIS technical studies have proven that soils created during mining can be of greater value than the existing native soils. An overreaching historical observation that has been confirmed by studies conducted outside of the EIS is that proscriptive SMCRA regulations regarding compaction are the chief detractors to

reforestation on mined areas. As noted in the following paragraphs of the EIS narrative:

> **Prior to the passage of SMCRA, most surface-mined land in the east and Midwest was reclaimed with trees. The quality and productivity of these lands varied, but, in general, reforestation was successful and commercially valuable forests were created. With the implementation of SMCRA-based rules and regulations, the percentage of land reclaimed forest dropped significantly. The rules, as typically interpreted and enforced, resulted in intensely graded landscapes with erosion control provided by herbaceous vegetation. In this post SMCRA environment, reforestation was difficult and productivity of those lands was disappointing.**
>
> **Deep rocky soils with the appropriate chemical composition can be produced through mining and reclamation, and will support forests that are more productive than those supported by the thin natural soils typical of the Appalachian Mountains. EIS III.B-12.**

Page III.F-7, second paragraph:

> *This change in habitat has resulted in a shift in the distribution of birds throughout southern West Virginia* with an increase in the abundance of edge and grassland species at reclaimed mine sites.

While the technical studies do indicate that edge and grassland species are occurring on reclaimed mine sites, it is entirely inappropriate to extrapolate these results into the conclusion that a "shift" has occurred throughout southern West Virginia. As noted in our previous comments, the Cumulative Impact Study DOES NOT indicate that past, current or future mining will eliminate or substantially reduce existing forest cover. West Virginia and the majority of the region will remain dominated by dense forest cover. Further, both the Woods and Edwards

research and the Canterbury research has documented the occurrence of forest interior species in the forest edge habitats created by mining activity, including the presence of species that are of conservation concern. This statement also conflicts with subsequent paragraphs in the EIS narrative:

> **Eighty-four of 92 "probable" or "confirmed" breeding birds, based on data presented by Buckalew and Hall (1994) in the West Virginia Breeding Bird Atlas were confirmed at mountaintop mining sites in southern West Virginia in 1999 and 2000 (Woods and Edwards). The eight species identified by Woods and Edwards (2001) are not associated with habitats associated with mountaintop mining sites (residential and urban habitats***)*. EIS III.F-7.

The presence of 84 of the 92 expected species clearly does not indicate a "shift" in the bird community. The Associations suggest that the statement referring to a "shift" in the bird community be deleted since it is unsupported.

Page III.F-7, fourth paragraph under Birds section:

> *Species richness and abundance of songbirds is higher in shrub/pole habitats of mountaintop mining sites than in grasslands, fragmented forest, and intact forest habitats (Woods and Edwards, 2001).*

Page III F-7, fifth paragraph under Birds section:

> *Mountaintop Mining sites are known to support at least ten grassland and shrub bird species not previously listed in the WV BBA (Woods and Edwards). Grassland birds are declining throughout much of the United States. Three grassland species listed as "rare" in West Virginia are known to occupy mountaintop mining sites in southern West Virginia.*

Based on the above referenced statements and the underlying technical research, it is apparent that current mountaintop mining and reclamation practices are creating

habitats that foster terrestrial diversity. EPA's CIS results indicate dense forest will remain the dominant land use of both West Virginia and the region. Unlike the forest habitat, which dominates the study area, grasslands/shrub habitats are rare in West Virginia. This data leads to a logical conclusion that the diversity created by these mining produced habitats far outweighs the site-specific declines observed in the forest-interior species.

> *In general, species richness and abundance are expected to be greatest from diverse habitats like the shrub/pole communities and lowest in the least diverse habitats like grasslands.*

While this statement may be factually correct, it implies bias since intact or dense forest can be expected to be equally less diverse as the grassland areas.

> *It is possible that some of the grassland bird populations on mountaintop mining sites reclaimed with herbaceous cover are existing as "sinks". "Sink populations are maintained by immigration because death rates exceed birth rates.*

This statement is unsupported by the technical research, especially considering the conclusions regarding available breeding habitats for the grasshopper sparrows which are summarized in subsequent sentences in the same narrative paragraph. Further, since the largest habitat of the area is dense forest cover and grasslands is one of smallest, where would the birds be migrating?

Page III.F-8, second paragraph:

> *Some argue that mountaintop mining has the potential to negatively impact many forest songbirds, in particular neotropical migrants, through direct loss and fragmentation of mature forest habitats. Forest interior species…have significantly higher populations (at least one year of the two-*

year study) in intact forests than fragmented forests. Furthermore, cerulean warblers…are more likely to be found in a forested area as distance from a mine increases. These data suggest that forest-interior species are negatively impacted by mountaintop mining through direct loss of forest habitat and fragmentation of the terrestrial environment.

The data presented in the EIS technical studies DO NOT support such a conclusion. Higher populations of forest interior species in intact forests versus fragmented forest in one year of a two year study are far from conclusive.

Page III.F-9 Mammals section

Small mammal species richness does not differ between grassland, shrub/pole, fragmented forest, and intact forest habitats from mountaintop mining sites in southern West Virginia. Small mammal species abundance tends to be greater in grassland and shrub/pole than in fragmented and intact forest habitats.
Of a possible 58 species expected to occur in the study area, 41 were encountered.
The 41 species included 12 salamander species, 10 toad and frog species, 3 lizard species, 13 snake species, and 3 turtle species.

This statement provides even further evidence that mining and current reclamation practices create valuable habitat in the study area that results in mammal diversity as opposed to the dominant land cover of dense forest .

Mountaintop mining results in greater soil disturbance than forest clearing so a longer time may be required for recovery of salamander populations.

While recovery of the salamander populations on mountaintop mining areas may be slower when compared to rates associated with other disturbance, the most important fact is that salamanders do frequent the habitats created by current reclamation.

Page III.F-9 through F-10, Interior Forest Habitat and Area Sensitive Species

Interior forest habitats are relatively rare and easily lost.

This may be a true statement nationally, but is simply not the case in the study area. As previously cited, the CIS found the study area will remain 87.5 percent forested if all future mining impacts are combined with all human disturbances. The CIS also assumes a worst case scenario for mining by assuming that all reclamation areas will be returned to grasslands and no renewed emphasis on tree reclamation will take place.

> *Studies conducted at reclaimed mountaintop mining sites in southern West Virginia have yielded forest interior bird species in shrub/pole and fragmented forest habitats as well as intact forest habitats. However, the abundance of forest interior bird species was significantly lower in fragmented forests than intact forest suggesting a detrimental impact.*

The presence of these traditional forest interior species in the edges and shrub/pole habitats created by the reclamation process do not support the conclusion that forest fragmentation is negatively impacting these species in the study area. The next statement, that interior species were significantly lower in fragmented forest, is not supported by the Woods and Edwards Report. A lower abundance was found for only six of the forest interior species. Six species out of 47 clearly does not support the conclusion that detrimental impact is occurring.

Page III.F-11, second paragraph under Deforestation

> *It follows that deforestation of large portions of the Appalachians through mountaintop mining is a significant concern from the standpoint forest-dwelling wildlife, in particular, forest interior species.*

This statement conflicts with the findings of the CIS and the terrestrial technical studies. The CIS found that abundant habitat will continue to exist in the region even when mining disturbance is assumed to have the greatest impact (no reforestation) and mining is considered along with all other human activities. According to the CIS, the area will remain 87.5% forested. The Woods and Edwards terrestrial technical study found that forest-interior species were present in the fragmented forest area created by mining. As noted in a subsequent paragraph in this same section, a majority of species have the same abundance in the fragmented forest as the intact forest:

> **Furthermore, with the exception of a few rare species, the densities of songbirds on grassland and shrub/pole mountaintop mining sites was similar to that reported in other studies indicating the quality of habitat and availability of resources is similar to the other sites. EIS III.F-11.**

In other words, mining has created habitat favored by these traditionally forest interior species.

> *The above findings provide evidence that mountaintop mining practices provide favorable conditions for some species. However, these advantages may not surpass the disadvantages these practices have on the sustainability of plants and wildlife in the region.*

The technical studies do not indicate that mining and reclamation practices have a disadvantageous effect on plants and wildlife in the region. First, greater growth

rates of trees and plants have been demonstrated to be technically feasible if the traditional SMCRA barrier of over compaction is addressed. Second, the CIS determined that future mining and other disturbances will not result in a dramatic shift in the existing land cover of the region, with 87.5% of the study projected to remain dense forest cover. With regards to wildlife, the technical studies have shown that traditional forest-dependent species are present on reclaimed areas and that grassland and shrub/pole habitat species not associated with study area are also present on reclaimed areas. At worst, mining and reclamation is increasing the biodiversity of the area.

Page III.F-12, first full paragraph, general comment:

The EIS has already acknowledged that existing rules and regulations imposed by SMCRA are the biggest factor preventing reforestation. With the renewed emphasis on reforestation and tree growth that will result from the EIS alternatives, it is reasonable to assume that tree reclamation will increase in the study area. However, if tree reclamation was not advocated in the EIS alternatives, scientific research indicates that these grassland and shrub/pole habitats are supporting a healthy and diverse terrestrial community with species of both forest-interior and grasslands being recorded on reclaimed areas. The CIS has found that neither mining nor any other human activity will result in a massive conversion of the study area from dense forest to another land cover indicator.

Page IV.C-5, first paragraph:

> *There are also indirect effects related to removal of forest associated with mining. Studies have shown that trees help remove certain elements from our air and sequester them. This process is known as "carbon sequestration."*

According to the tables summarized on the pages preceding this paragraph, all the states within the study area will remain dominated by forest cover and continue to provide the valuable carbon sequestration function. Further the U.S. Forest Service's Forest Inventory and Analysis indicates that the average annual cubic feet of forest growth exceeds the average annual rate of forest loss for all states in the region.[42] This information is summarized on page IV.C-2:

> **data, based on the forest census in West Virginia (1989), Virginia (1992), and Tennessee (1999), shows that the average annual cubic feet of forest growth exceeds the cubic feet of forest loss by 10 million cubic feet in Virginia, 241million cubic feet in Tennessee and 257 million cubic feet in West Virginia.**

These growth to loss ratios will increase as new reforestation efforts are implemented by OSM and state regulatory authorities to encourage tree growth on mined areas. Therefore, it is apparent that the carbon sequestration ability of the region will persist and even improve.

Page II.C-87, Flooding, General Comment, entire section:

This section summarizes various site-specific technical evaluations of the flooding potential of surface mining and associated valley fills. Collectively, the results of these various studies lead to one conclusion:

[42] Data for similar cut/growth ratios was not available for Kentucky.

> **…the study findings generally support a conclusion that downstream flooding potential is not significantly increased by existing mining practices so long as approved drainage control plans are properly applied. EIS IV.I-7.**

Any possible increased flow potential from mined and/or filled areas are site-specific issues that must be addressed on a permit-by-permit basis. Because of the wide variability in results where flow increases where detected, no programmatic or endemic conclusions can be drawn, as this section correctly notes:

> **Studies prepared as part of this EIS and other available literature indicates that peak runoff increase or decrease below mining can occur. Site-specific analysis is required based on many factors…**
>
> **It is difficult to generalize mining impacts on runoff. Due to site conditions, increases in peak runoff may not cause or contribute to flooding.**

Other sections of the EIS note that the study area is naturally prone to flooding given the topographic characteristics of the region:

> **The rugged terrain of this region is generally characterized by steep mountain slopes, confined river valleys and narrow ridge tops. EIS III.A-1.**
>
> **Because of the topography and terrain in steep-sloped Appalachia, flooding occurs in severe weather conditions. Draft EIS IV.H-1.**

Repeated, severe flooding has plagued certain areas within the study region for centuries, certainly before the advent of surface mining. The stark reality is that topographic influences lead the area to be more prone to flooding events . These same influences forced residential, infrastructure, transportation and commercial

development into documented floodplain areas. On page III.R-5, the EIS presents the results of the Land Use technical study confirming these observations:

> **The steep slopes and narrow, flood-prone valleys have limited the availability of land parcels suited for large scale development.**

Despite these observed restrictions, development and residential construction as a matter of practicality has occurred in these flood-prone areas, subjecting residents to repeated and unfortunate flooding.

Surface mining provides a unique, no public cost opportunity to alleviate some of these conditions by providing flat, stable land that is far elevated from the "narrow, flood prone valleys" that possess most of residential settlements in the study area. Historically, periods of government attention were focused on relocating flood prone communities to reclaimed, non-AOC surface mined areas. Unfortunately, what would otherwise serve as a tool of stabilization both economically and socially- massive relocation of these areas- has never been succinctly expressed or implemented and emerging environmental restrictions such as excessive mitigation requirements and fill minimization mandates may bar this from ever occurring.

Page III.G-3, General Comment, Peak Flow Study:

The Associations generally agree with the conclusions of the Peak Flow Study, **insofar as the results highlight the need for site-specific permit analysis** as the

decreases and increases in flow indicated by the various models differed for each area analyzed.

The OSM-COE studies presented in this section underscore the reality that an increase in flow does not translate into an increased flood potential. Based on the results of the OSM-COE models, even the highest peak flows indicated by the studies did not cause a rise in water levels that would exceed channel capacities and lead to flooding downstream under the 10 and 100 year scenarios modeled for these areas:

> **…the predicted increases in peak flow would not have caused flooding on the banks outside the receiving stream channel. EIS III.G-4.**
>
> **…increases in peak flow did not cause a rise in water level overtopping the receiving stream channels. EIS III.G-6.**

Even though the water levels predicted by these site-specific analysis increased compared to pre-mining conditions, **these increases DID NOT result in or cause flooding.** As noted on page III.G-6 of this section:

> **Flooding typically occurs only when water levels exceed channel capacities and spread across the floodplain where residential settlements may occur.**

Additionally, as runoff travels farther downstream, any increases in flow become less discernible. Thus, the downstream impact from any possible runoff increase in the headwater areas becomes less pronounced the farther removed a location is from the disturbed area:

> **The influence of changes in the headwater areas will decreases as the point of analysis is moved farther downstream.**

EIS III.G-6.

In terms of results, the actual data from the various studies are only partially presented in Appendix H. While the HEC-HMS computer model data appears in each of the 10 studies, the SEDCAD 4 modeling data presented in the chart on page III.G-5 does not. The SEDCAD 4 models returned results similar to the HEC-HMS, but predictions of peak flow were significantly different under certain conditions. Without the opportunity to review the SEDCAD 4 data in detail, the Associations are without sufficient information to offer specific comments. Unless the supporting data is provided, the SEDCAD 4 results should be removed from the final EIS.

Page III.G-7, Fill Hydrology Study:

The technical study summarized here, *Comparison of Storm Response of Streams in Small, Unmined and Valley-Filled Watersheds* (Appendix H draft EIS) determined that the mined and filled watershed exhibited higher peak flows than the non-mined "control" watershed when rainfall exceeded 1 inch per hour. This veracity of this finding is compromised by the location of the sampling station on the filled watershed. On page seven of the technical study, the USGS indicates that the measurement point for the filled stream was located between the toe of the valley fill and the sediment pond, thereby excluding any possible flow attenuations provided by the sediment pond.

> *During most storms however, peak flow from the unmined watershed exceeded peak from the filled watershed.*

This finding comports with other observations and technical research that generally found sustained base flow and lower peak flows in mined areas results from the hydrologic characteristics of backfilled spoil and valley fills:

> **Creation of valley fill aquifers change the hydrology of streams receiving baseflow from valley fill aquifers by diverting a greater percentage of precipitation into the fill allowing water to be released at a much slower and less intense rate compared to normal storm-induced stream hydrographs. EIS III.H-9.**

On page 20, the authors of the technical study properly observe that:

> **Rainfall-runoff relations on altered landscapes are site specific and reclamation practices that affect storm response may vary among mines.**

This statement further supports the Associations' position that no programmatic conclusions can be drawn with respect to mining and/or valley fill influences on flooding potential.

Page III.G-7, July 2001 Floods Study:

Titled *Comparison of Peak Discharges Among Sites With and Without Valley Fills for the July 8-9 Flood in the Headwaters of Clear Fork, Coal River Basin, Mountaintop Coal-Mining Region, Southern West Virginia*, this study attempted to determine whether mining had any adverse impact in the July 8-9 severe flooding event experienced across central and southern West Virginia including the Clear Fork area.

The basic premise of this study- that there was equal rainfall among the six analyzed basins proved to be incorrect. The flood recurrence intervals (and

therefore rainfall amounts) in the six basins were unequal, compromising any possible conclusions, since a watershed receiving more rainfall is going to exhibit higher runoff than one receiving less rainfall.

Given the confounding factors that have compromised the basic assumptions of the study, the Associations believe the Report offers little of real value and its reference should be deleted from the final EIS.

Page III.G-8, Citizen Complaint Study:

A review of the underlying citizen complaints that support this section confirms past assertions made by the mining industry with respect to flooding: The areas where mining occurs are naturally prone to flooding and provided that the approved drainage control plan is followed and the drainage control system is functioning per regulatory requirements, mining has no adverse impact on either flooding potential or the severity of flooding. Despite 126 complaints in West Virginia from 1995-1999, only **eight** of these complaints resulted in enforcement actions related to drainage control structures. Similar results were found in a review of Kentucky (35 investigations, **five** enforcement actions) and Virginia (three investigations, no enforcement actions) SRA records.

Page III.G-8, Other Studies:

This section presents the results of two state specific studies undertaken in response to specific severe flooding events. This first, *Runoff Analysis of Seng, Scrabble, and Sycamore Creek* was conducted by the West Virginia SRA. The

summarized results of this study confirm the general conclusions of the draft EIS and the suggested alternatives related to flooding potential: Mining can influence the degree of runoff, but the extent to which a decrease or increase may have reduced or increased flooding potential is site specific. The West Virginia coal industry was intimately involved in the preparation and review of this study as one of several stakeholders on the Flooding Advisory Committee, and feels compelled to identify in further detail the findings of this review:

1. Mining may either have a positive or negative effect on total runoff and that effect appears dependent upon the extent to which the original, steep-sloped flood prone terrain and topography of the mined is restored through the reclamation process.
2. In all three of the mined watersheds, the effects of documented, increased flows were relatively small.
3. The rain event of the study period was so intense that flooding would have occurred absent any possible influences from mining activity.
4. No programmatic conclusions was reached in the study regarding runoff increase or decreases attributable to mining activity, as this would require "long-term investigation and analyses , including an investigation of every reach of stream" in the relevant watersheds.

Unlike the West Virginia undertaking, very little information is provided in the EIS with respect to the Kentucky initiative, *Joint OSM-DSMRE Special Study Report on Drainage Control*. This is unfortunate, as the most pertinent conclusion

of this study is one that deserves prominent replication in the EIS because it serves to confirm the results of the other technical research and the ultimate conclusion reached in the draft EIS with respect to this issue:

> **Factual results garnered from the study indicate that the majority of the alleged downstream flooding problems were more a result of localized, extremely heavy precipitation events that led to flash flooding, which would have occurred with or without the mining operations being present.** [43]

III.I-1, Overview of Appalachian Region Coal Mining Methods

> *National industry trends have favored surface mining over underground mining in recent decades, driven by the advent of very large earthmoving equipment, and surface mining now accounts for the majority of nationwide coal production.*

The shift in coal production methods from underground mining to surface mining can be attributed to events that occurred independent of the availability of large equipment. Relatively large scale surface mining has occurred for decades in coal producing regions other than the study area, where surface mining is generally a recent phenomenon that can be attributed to shifting coal markets. In the anthracite fields of Pennsylvania, the lignite regions of Texas and the coal fields of the Midwest large scale surface mining has a history dating back to before the 1950's. By 1971, the amount of coal produced from surface mines exceeded the amount produced from underground mines nationally. Since then, surface mines have accounted for an increasing percentage of the nation's coal production with

[43] *Joint OSM-DSMRE Special Study Report on Drainage Control*, 1999.

much of the increase occurring at western surface mines and in particular mines developed in ~~of~~ the Powder River Basin:

> **Much of the increased coal production in the United States…is from large open pit mines in the western region.**[44]

The coals seams and overburden characteristics in this region make underground mining difficult if not impossible. Unlike coal regions in the southwest, midwest and eastern United States, overburden to coal ratios in the Powder River Basin are extremely low. What overburden material that does exist is unconsolidated, "weak" material better characterized as "soil":

> **…the coal lands of the Western region are underlain by flat lying or gently dipping beds of lignite or sub bituminous coal. Some of the seams of sub bituminous coal are 70 feet thick or more and lie at relatively shallow depths; overburden ratios commonly are 1:1 or less. Thus most of the coal produced in this region is from large surface mines in such seams.**[45]

The second driving force behind a movement towards surface mining can generally be seen in the Central Appalachian study area. With the passage of the 1990 amendments to the CAA, a substantial market was created for steam coal that could satisfy new emission mandates. The coal seams and reserves in Central Appalachia developed as a result of this market demand lend themselves better to surface mining than to underground mining for a number of reasons, including the cost benefits realized from larger surface mining equipment. Prior to passage of the 1990 amendments to the CAA, mining in the study region was largely linked

[44] U.S. Department of the Interior Office of Surface Mining: *Environmental Impact Statement, Revisions to Permanent Regulatory Program,* 1983.
[45] Ibid.

to metallurgical coal production. These seams are better accessed by underground mining methods as they are deeper in the geologic column than seams associated with steam coal production. Historically, steam coal production in Appalachia was concentrated in the Pittsburgh seam in northern West Virginia and associated more with longwall underground mining. Commensurate with the increased demand for "compliance" stream coal was a precipitous drop in the demand for metallurgical coal production. Reduced domestic coke production, a result of decreased raw steel production and increasingly restrictive emission standards for coke ovens has drastically lowered demand for metallurgical coal.

> *The term "mountaintop mining" used in this EIS encompasses three different kinds of surface mining operations (contour mining, area mining, and mountaintop removal mining) that create valley fills.*

The final EIS should be revised to more fully acknowledge the potential affects the various policy options under consideration will have upon underground coal mining operations. On page III.K-15of the EIS, the agencies identified 719 valley fills that were permitted for underground mines. As this statistic reflects, underground mines in this steep sloped area also require the construction of valley fills. These fills facilitate creation of a flat, level bench that allows access to the coal seam and permits construction of underground support facilities such as ventilation fans, raw coal belts and stockpile areas, bathhouses and electrical installations such as battery charging stations. These benches also serve as "staging areas" for the underground mining operation where supplies are stockpiled and equipment is serviced. Past interim regulatory initiatives such as

the 250-acre watershed restriction on valley fills have applied to fills constructed for underground mining, as will the alternatives considered in this EIS. To provide a true picture of mining in the region and likely results of the various alternatives, underground mining must be included in this and other descriptions contained in the final EIS.

Page III.I-2

> *Current technology achieves nearly the highest possible recovery of the coal reserves beneath a typical tract of Appalachian land; however, this is neither always economically feasible nor acceptable from an environmental standpoint.*

Mining in general and surface mining in particular is one of the most heavily regulated industrial activities in the nation. Several major environmental statutes have jurisdiction over coal extraction, including a single environmental program that was developed by Congress specifically for coal mining. If mining was "not acceptable from an environmental standpoint", the vast statutes and regulations and the various federal and state agencies that regulate this activity would not allow a mining permit to be issued. In fact, this EIS confirms the viability of these existing regulatory programs in that no more than temporary, minimal impacts could be linked to surface mining in the region. A more proper statement would be "not acceptable to some", as this EIS can be attributed not only to misguided litigation but hyperbole surrounding mining and valley fills and exaggerations regarding the scope and scale of these activities within the study area.

Page III.I-3, Underground Mining Methods

Although not directly related to the focus of this EIS on surface mining valley fill impacts, underground mines are part of the overall coal industry within the study area…

The statement above repeats a very serious error already cited by the Associations: the failure to associate underground mining with valley fill construction. This statement also fails to acknowledge to interrelationship of surface mining to underground mining. Many underground mines exist solely to provide blending stock for coal produced through surface mining methods as part of large mining complex much like the one described on page III.I-26. Since surface mined coal is generally of a better quality than coal mined using underground methods (because rock partings and other impurities present in the coal seam can be removed in the pit), many underground mines could not produce a marketable product unless blended with a surface mined product.

Page III.I-26 Mountaintop Mining Complexes, general comment, entire section:

This section provides fairly accurate description of current mining and coal processing practices in the Central Appalachian region, with one exception. As with other sections of the EIS, it neglects to mention the interrelationship of underground mining to surface mining. As we have stated previously, raw or unprocessed coal produced by both methods of mining is usually needed to produce a marketable "clean" product that meets the emission and volatile requirements of the customer. Should any either source of raw coal be eliminated,

the ability of the "complex" to provide a greater range of clean coal suitable for a number of applications and customers is reduced:

> **Many deep mines are co-dependent on related surface mines for quality blending requirements and even economic averaging arrangements. Eliminating or reducing the surface mining has direct impact on the viability of the deep mining in these instances.** [46]

III.K-1, Excess Spoil Disposal

There is also concern regarding long-term fill stability

This statement is misleading and it should either be removed from the final EIS or revised to reflect the findings of the EIS Valley Fill Stability technical study. "Concern regarding valley fill stability" was indeed raised during the scoping process of the EIS, although the majority of these public comments appeared to mistake valley fills for coal refuse impoundments. Nevertheless, from these "scoping concerns", OSM initiated a through and comprehensive review of valley fills constructed in the study area to assess any potential stability problems. This technical report concluded:

> **A review and analysis of the data indicates that valley fill instability is neither commonplace nor widespread. Only 22 known cases of instability occurred (all during the mining and reclamation phase) out of more than 4,000 fills constructed in the past eighteen years.** [47]

The results of this technical review led the agencies to conclude that no programmatic action needed to emerge from this EIS. The above referenced

[46] *EIS Appendix H: Final Report, Coordinated Review of Mountaintop Mining/ Valley Fill EIS Economics Studies, pages 8-9.*

[47] U.S. Department of the Interior Office of Surface Mining. *Long-Term Stability of Valley Fills, Final Report*. Appendix A of the Draft EIS.

statement should be revised to more clearly reflect the conclusions of the technical review.

Page III.K-2:

> *In the late 1970's and early 1980's the durable rock fill method became the predominate excess spoil disposal technique due to the cost efficiencies of the technique.*

As a general matter this statement is correct, but it should be expanded to include safety considerations and the implications for direct stream loss.

Cost considerations drove development of this spoil placement method but other considerations also influenced the move towards durable rock fill construction such as truck haulage. On page IV.I-8, the EIS describes the operational effects of increased backfilling. Similar conclusions could be drawn regarding conventional lift construction with the added dimension of operator safety. Haulage trucks would be transporting spoil down grade on steep roads. Not only would equipment endure increased physical wear in terms of brakes and other essential systems, but instances of haulage accidents could be expected to increase. Conventional lift construction also assures maximum disturbance to the permitted footprint area. Durable rock fills provide the operator with the flexibility to respond to unforeseen geologic conditions and economic factors by discontinuing fill placement and reducing the direct impacts to streams. In convential lift construction, the entire footprint area is constructed during installation of the initial lift.

Page III.K-10, c. Valley Fill Stability

> *There has been anecdotal evidence that valley fill instability (landslides or land slips on fills) are neither commonplace nor widespread; and, that properly constructed valley fills are well-engineered and stable structures.*
>
> *The EIS Steering Committee chartered a study of fill stability to corroborate perception with empirical information.*

The remainder of this section fails to confirm that the technical study corroborated the anecdotal information, even though it was stated goal of the evaluation:

> **A review and analysis of the data indicates that slope movements in valley fills are neither commonplace nor widespread. As of the completion of this study in November 2000, only 20 occurrences of valley fill instability are recorded out of more than 4,000 fills constructed in the past 23 years. While these instances of fill instability might have been "major" as regards the cost of re-engineering and corrective action to mitigate the mass movement, the consequences were not loss of life or significant property damage.[48]**

The technical study also serves to dispel the notion that isolated movement of material on the face of a valley fill equates to "failure" and that the results would not be similar to the effects of the 1972 failure of an un-engineered coal refuse dam at Buffalo Creek, West Virginia:

> **…catastrophic impacts over a great distance down valley…should not occur. An unstable valley fill would not be expected to impact distant areas because:**
>
> **-[Unlike the pre-SMCRA coal dam at Buffalo Creek] fill designs build in a substantial, long-term factor of safety against instability and have specific drainage control measures.**

[48] Ibid.

> **-No large quantity of water should be present in properly designed valley fills to lubricate the fill material into a flowing mass that could transport for any great distance. The regulations prohibit ponds on fills or fills impounding water behind them. Even improperly designed fills should have minimal impounding potential.[49]**

Despite the overwhelming conclusion of the technical study that valley fills are stable structures, the EIS narrative is misleading, as the results of the technical study are never firmly presented in relationship to first paragraph regarding anecdotal evidence.

Page III.K-2:

> *In the late 1970's and early 1980's the durable rock fill method became the predominate excess spoil disposal technique due to the cost efficiencies of the technique.*

As a general matter this statement is correct, but it should be expanded to include safety considerations and the implications for direct stream loss.

Cost considerations drove development of this spoil placement method but other considerations also influenced the move towards durable rock fill construction such as truck haulage. On page IV.I-8, the EIS describes the operational effects of increased backfilling. Similar conclusions could be drawn regarding conventional lift construction with added the dimension of operator safety. Haulage trucks would be transporting spoil down grade on steep roads. Not only would equipment suffer increased physical wear in terms of brakes and other essential systems, but instances of haulage accidents could be expected to increase.

[49] Ibid.

Conventional lift construction also assures that maximum impact to downstream areas. Durable rock fills provide the operator with the flexibility to respond to unforeseen geologic conditions and economic factors by discontinuing fill placement and reducing the direct impacts to streams. In conventional lift construction, the entire footprint area is constructed during installation of the initial lift.

Page IV.F-1, Energy, Natural, or Depeletable Resource Requirements

> *The three action alternatives and the No Action Alternative may also provide significant environmental benefit if mitigation proves infeasible in certain locations, causing no mining to occur.*

This statement, as worded is very misleading, ignores the results of the EIS technical studies and should be removed from the final EIS. Inclusion of such a statement assumes that mining and valley fill construction activities have resulted in more than minimal impacts on the environment of the region. This is simply not true. As we have noted throughout our other comments regarding the environmental concerns associated with mining in this area, it is clear that mining and valley fill activities have not, nor will they ever have more than minimal impacts on the environmental and social resources of the study area. What environmental effects have been documented can be characterized as improvements (wildlife diversity has increased, more stable sources of downstream energy have been established, flat, stable, useable land can be created). Absent voluminous studies and data to affirm this position with respect

to individual environmental and social issues, past, current and future mining will only affect a relatively small portion of the Central Appalachian landscape, communities, and streams.

Significant environmental benefit will most certainly never occur in areas where mitigation efforts could have alleviated existing degraded streams through any number of water quality and habitat improvements. These existing environmental detriments, identified elsewhere in the EIS present far greater threats to the overall environmental health and stability of the region than does surface mining and valley fill construction. These existing stressors affect a far greater scale of the region that surface mining has or is forecast to affect, and the environmental degradation associated with such stressors as AML-AMD discharges is far more serious than the loss of a headwater stream.

> *Some limited number of reserves may be recoverable by underground mining or a combination of contour and auger/highwall mining.*

This statement too requires revision to be accurate. One of the pervading mistruths regarding surface mining is that other extraction methods allow removal of the same coal resource. The reality is that most seams currently being mined using surface mining and valley fill extraction methods cannot be recovered using underground mining. The seams are either physically too thin, the overburden too unconsolidated to allow for safe mining or the reserve so isolated or small that underground extraction is either impossible or hopelessly uneconomic.

This statement also fails to acknowledge the dependence of underground mining on valley fill construction. Assuming that the environmental restrictions envisioned under all the EIS alternatives will apply equally to all mining related fill construction (as they have in the past), in the limited situations where an expansion of underground extraction can replace lost surface mine production, this expansion will be constrained by the same restrictions that may ultimately make surface mining implausible:

> **…It is an egregious mistake to ignore impacts of valley limitations on deep mines, especially new ones. First, many deep mines are co-dependent on related surface mines for quality blending requirements and even economic averaging arrangements. Eliminating or reducing the surface mining has a direct impact on the viability of deep mining in these instances. Second, the typical reject rate in Central Appalachia from a wash plant associated with a deep mine is about 50%. Thus, for every one ton of coal mined, one ton of refuse is placed in a valley fill or related impoundment. In fact, the valley fills associated with wash plant refuse are generally among the larger valley fills associated with coal mining (with generally larger watershed) but are fewer in number than surface mining valley fills. Third, the construction of a new deep mine involves other valley fill issues. Often, a new deep mine is accompanied by a new wash plant with a new valley fill for refuse. Plus, in order to "face up" the entrances to the new deep mine, a new valley fill for the mine entrance is typically needed.[50]**

With respect to underground mining, a proper characterization would be "it is unlikely that underground mining can replace surface mining in the extraction these reserves."

[50] EIS Appendix H: Final Report, Coordinated Review of Mountaintop Mining/ Valley Fill EIS Economics Studies..

The second component of this statement, "…a combination of contour and auger/highwall mining" is simply absurd and it ignores the underlying fact behind the entire EIS: The Central Appalachian study region is steep-sloped and any excavation for underground mine development, any variation of surface mining or any other human development activity will result in the generation of spoil that cannot be safely placed anywhere but in a fill. Because of the very nature of the native terrain, with rare exceptions, "fill-less" mining or disturbance is simply not possible. Very isolated opportunities may exist for the placement of generated spoil on adjacent flat areas such as AML benches:

> **Abandoned mine benches, reclaimed mine sites or active mining areas may accommodate some volume of excess spoil…**
> EIS IV.I-2

However, these occurrences would be so rare and dependent on such a wide range of factors that they deserve no mention as a reasonable alternative to valley fill construction. No substantial amount of coal could ever be produced from an operation that was dependent such an area for spoil placement.

Any reference to these two surface mining techniques should be deleted from this statement.

> *…resources in U.S. coal basins within or outside of Appalachia and in other countries exist to offset lost reserves from the study area, if market conditions change for regulatory or other reasons.*

Fortunately, the U.S. has been blessed with an abundant reserve base of recoverable coal resources to feed the energy needs of an expanding and evolving

society. However, not all of these coal resources are equal, and for the agencies preparing this EIS to assume that lost Central Appalachian production can simply be replaced from other regions is a serious error. Coal mined in Central Appalachia represents some the highest quality coal found anywhere in the world. Because it is low in constituents targeted by emission legislation yet high enough in heating properties to satisfy utility input requirements, it may be the most valuable coal in existence. Other regions, particularly the Power River Basin and southwest, produce coal that is generally superior as far as emission standards are concerned. However, resources from these areas fall far short in comparing to the heating properties of coal from the study region.

This EIS has made no effort to analyze the available capacity of the Powder River Basin, both in terms of coal production and more importantly transportation, to assume the burden of energy production should policy and regulation sterilize the substantial coal resources of Central Appalachia.

As for the other regions of Appalachia and the Mid-West, the continued marketability of coal from this region is hampered by emission standards enacted as part of the CAA. As we have noted in our other comments, it was the imposition of these restrictions that ultimately spurred development of the resources being extracted using surface mining and valley fill methods.

Further, there is no domestic substitute source for the metallurgical coal produced in this region. Once the production of industrial and metallurgical coal is lost to Central Appalachia, it is lost to the U.S. compelling reliance on imported coal or

imported finished coke- A truly regretful situation. Reliance on foreign resources can be tolerated where domestic sources are finite or nonexistent (as with petroleum) but in the case of coal, the U.S. has ample reserves, a highly trained, well-compensated workforce and developed infrastructure to facilitate coal extraction. At the same time, mature regulatory programs exist to assure minimal environmental and social impacts of coal mining. Thus, there is simply no palatable excuse, given the minimal effects of mining, for misplaced environmental policy to drive dependence on foreign resources.

> *...economic impacts resulting from decreased coal mining could be locally significant.*

This is a gross understatement and one that requires revision to be accurate. A more proper characterization would be "profound". At the request of the West Virginia legislature, Marshall University conducted an analysis of the economic effects of a severe restriction on surface mining within the state. Published in 2000 this study determined that the economic results of restricting surface mining equated to the effects of the Great Depression: widespread economic and social and devastation and dislocation.[51]

G. Cultural, Historic, and Visual Resources, general comment, entire section:

Central Appalachia is indeed an area of rich culture and history worthy of protecting. However, as the Associations have noted previously, mining will

[51] Marshall University Center for Business and Economic Research. *Coal Production Forecasts and Economic Impact Simulations in Southern West Virginia: A Special Report to the West Virginia Senate Finance Committee*. 2000.

never occur on a scale large enough to eliminate or even substantially impact these values. Localized impacts can, and will occur, but existing regulatory mechanisms exits to protect the resources in these areas. As for community displacement, again localized occurrences are possible, but because of the small scale of mining activity, instances of displacement are no more likely than community displacement in the same region or other areas from publicly funded projects such as flood control and road construction.

H. Social Conditions, general comment, entire section:

The Central Appalachian region faces many social and economic challenges that is without dispute. However, the description of these conditions characterizes these challenges as relatively recent phenomena and leaves the uninitiated with the impression that they are attributable to mining. For decades government programs such as the Appalachian Regional Commission have sought to enhance the social and economic conditions of the study area. Despite all these positive influences such as aggressive highway construction, problems persist:

> **Income statistics from the 1980 and 1990 Censuses indicate that the study area, as a whole, has a starkly lower income than the individual states.**
>
> **Census statistics for 1980 and 1990 depict a poverty problem throughout most of the EIS study area.**
>
> **In twenty-four of the study area counties, over one in every three residents was estimated to live below the poverty level.**
> **EIS IV.H-1.**

These demographic realities further stress the economic and social importance of the coal industry. Coal mining activity creates substantial economic activity through high-paying wages for coal miners and demand for goods and service related directly to coal extraction. The ripple effect of this activity is tremendous and mining is the *only* economic driving force in a majority of the study area:

> **The establishment of a new mine or the expansion of an existing one affects both the economy of the local community where the mine is located and the economy of communities far removed from the mine site. This is because the United States has a highly interdependent economy. What happens in the mining industry eventually impacts many other industries. This is referred to as the ripple or multiplier effect. Recent studies…using an input-output model indicates that the multiplier effect for a new mine is several times the magnitude of production, income and employment of the mine itself. It is estimated that a one dollar increase in coal production stimulates a total of $6.30 of production throughout the economy.**
>
> **Likewise, the creation of one full job in a new or expanded mining operation stimulates the creation of a total of 11 other jobs elsewhere in the economy. As expected, personal income also increases but not in proportion to employment. For every dollar increase in personal income associated with coal mining activity, there is a $4.83 increases in personal income elsewhere in the economy.**[52]

Just as it stimulates economic growth and earnings, the coal industry provides the social infrastructure for much of the region through taxes. The draft EIS summarizes the taxes collected on the coal industry beginning on page III.Q-9.

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[52] U.S. Department of the Interior Office of Surface Mining. *Draft Environmental Impact Statement, Valid Existing Rights*, 1995.

In short, the substantial economic activity created by mining in the region serves to alleviate these existing social problems, and coupled with the opportunities provided by post-mining land use development, offers tangible expectancy for a stable, diversified post-coal economy:

> **Most leaders are also keenly aware that its coal resources are its best sources for leverage of investments needed to build an economy that can flourish after the inevitable decline of coal mining.** EIS IV.h-2.

I. Economic Role of Coal in the Economy

> *As long as coal is required to supply a dominant portion of local and national energy needs, the ability to extract low sulfur coal reserves efficiently and cost effectively will occur somewhere in the nation (or the world) to meet energy demands and clean air standards.*

This statement is key to understanding the effect that increased restrictions will have on the energy security of the nation, particularly the regions and industries that have historically relied on coal supplies from Central Appalachia. Given the current energy needs of the nation, utility, industrial, metallurgical or otherwise, lost production from the study area will replaced by coal from other regions or foreign sources. As we noted previously, the ability of other coal regions in the U.S. to replace this lost production is limited for several reasons. First, the low sulfur coal produced in the west has substantially lower heating values than similar low sulfur Central Appalachian coal. Second, coal from other regions such as the mid-west and northern Appalachia is high in constituents targeted by clean air

legislation. Finally, a substantial portion of production from the study area is used for steel making other industrial applications that demand specific heating, fusion and chemical compositions that can only be found domestically in Central Appalachian coal. Hence it is possible, if not likely that lost production from the study area will be replaced by coal from foreign sources further reducing the energy independence of the nation.

> *Higher mining costs due, in part, to environmental compliance…will result in coal supplies originating from coal basins outside the EIS study area where compliance can occur.*

This statement unfairly conveys the impression that compliance within the study area has not occurred. This is simply not the case, as the EIS demonstrates. The only issue that has been identified is related to <u>new</u> mitigation requirements imposed by revisions to the COE's general permit program and the constantly evolving interpretation of these mitigation requirements by the various COE districts:

> **Increased environmental costs…have not been a constant factor in environmental compliance in the study until the 2002 renewal of NWP 21. EIS IV.I-2.**

As we have noted in our previous comments on other sections of the EIS, application of these new requirements, particularly conservation easements, to the study area is inappropriate and may not be the most environmentally beneficial measures for the region. This statement should be revised in the final EIS to properly reflect this reality.

In instances where coal traditionally supplied from Central Appalachia is replaced by foreign sources, no "environmental compliance can occur" because the agencies have failed to export the vast environmental controls imposed in the study region to foreign coal basins. The statement should be revised to reflect the knowledge that displaced production will likely be supplanted at least in part by coal from other regions of the world that lack the environmental controls of the U.S.

> *New capital will be required to "ret-tool" in order to conduct more contour/auger mining to reduce valley fill sizes, lower mitigation costs and still meet coal market demand.*

As with other sections of the EIS, this statement incorrectly leaves the reader with the impression that these particular mining methods are conducted without valley fill construction and that they are mutually exclusive production methods. Since they are activities that require excavation in the steep-slopes of the study area, these two mining methods by definition will result in valley fill construction. Further, as the EIS notes on page III.I-26, these surface extraction methods usually occur in conjunction with underground and other surface mining developments. All of these mining methods are usually necessary to produce marketable coal:

> **Many mines rely on blending the products of different surface mines or a combination of surface and underground coal to conform to supply contracts for particular coal quality. Also, transportation and coal preparation costs associated with smaller and underground mines are sometimes related to the proximity of larger mines with existing infrastructure. If the infrastructure is not available, new smaller mines may not be practical.** EIS IV.I-4.

A proper revision would delete reference to these two mining methods and associate "re-tooling" costs to the smaller equipment associated with reduced operations and reduced recoverable coal reserves.

...Declines in surface mining production typically result in some amount of commensurate increases in underground production and employment.

This statement requires revision to accurately portray the realities of mining and the anticipated results of new, restrictive environmental policy. As we noted previously the effects of the alternatives contemplated in the EIS will affect underground mining, either directly through valley fill constraints or indirectly by reducing surface mined coal that is blended with underground production to produce a saleable product. Consequently, a short-term increase in underground mining employment may result from a decline in surface mining production, but given the interrelationship of mining methods, any increase will be short-lived. A reduction in surface mining employment will eventually equate to a reduction in all mining employment as the effects of surface mining restrictions are extended to underground mining. The cited statement should be revised in the final EIS to properly reflect this relationship.

> *It is reasonable to assume that required mitigation costs (i.e., to offset valley fills) will result in future MTM designs with reduced valley fill sizes.*

This statement requires revision to properly frame increased mitigation costs within the context of other regulatory requirements imposed by SMCRA and

CWA. As we have noted previously in our comments, maximum fill minimization is already achieved through application of SMCRA's AOC requirement and compliance with the CWA's section 404(b)(1) guidelines. Since there is simply no other way to facilitate coal removal by any extraction method absent the existence of a valley fill, increased mitigation costs will act as punitive measure for unavoidable direct impacts and could unfairly hinder post-mining land uses in a region in serious need of flat developable land. A Revised Version of the sentence would properly acknowledge that operations assure fill minimization by satisfying the AOC mandate of SMCRA and the 404(b)(1) analysis of the CWA. Any further fill reduction that occurs will result from mitigation costs reducing the economic or practical viability of the operation.

The Hill & Associates sensitivity analysis projected….

The Hill & Associates (H&A) work summarized in the EIS provides only a "vision" of what will happen to the mining industry if valley fills are restricted directly (watershed specific prohibition on fills) or indirectly (increased mitigation requirements reducing the viability of a mining operation). The results of the H&A work produced very conservative estimates of the possible effects of fill restrictions because of certain restraints inherent in the model(s).

The H&A analysis relied on another EIS technical study conducted by Resource Technologies Corp. (RTC) known as the "Phase I" economics study, which used macro-GIS models to estimate the amount of available coal recoverable if valley

fills were limited to certain specific watershed acreage. The validity of this analysis is questionable, as the cover sheet to Appendix H notes:

> **Valley fill locations used in the study exceeded the watershed size thresholds established by the study (i.e. fills were placed in watersheds greater than the scenario limits). The Phase I study fill locations were inconsistent with basic engineering principles and typical mining practice to locate fills in valleys as opposed to on hillsides.**
>
> **Further, the phase I study relied on consideration of future mining based on areas where past mining had not occurred. A number of the potential mining sites utilized in the Phase I analysis have subsequently been determined to have been mined, consequently overestimating the available future resources for the Phase I scenarios. The study attempted to take into account mining engineering considerations such as overburden ratios, the volume of resource block, topography, etc., to assess resource recovery feasibility. However, the computer model was not designed, nor did the data exist, to account for every critical mining engineering factor, such as coal quality, mineral and surface ownership conflicts, and other very site-specific elements.**
>
> **The Steering Committee consequently found that the site-specific results of the Phase I Economics study have limitations and should not be relied on to be representative of potential future mining and fill areas…with respect to production change estimates.**
>
> **Despite the study limitations, the computer modeling clearly indicates a trend related to reduction in available valley fill storage and the amount of reserves recoverable. The study illustrates, from a regional perspective, that restricting valley fills to small watersheds would commensurately restrict mining feasibility and minimizes full resource utilization.**

The H&A work, or "Phase II" of the economics analysis, relied on flawed inputs from the Phase I study:

> **Because the Phase II Economic Study used the results if the Phase I Economic Study, the [phase II] study results also have limitations.**

In addition to receiving flawed data from the initial analysis, the H&A work also failed to properly account for the increased mining costs associated with smaller fills:

> **In the original Phase II study, no adjustments in costs were made to reflect changes in material handling and haulage methods resulting from fill restrictions. The costs were also not adjusted to reflect the reality that fill restrictions would likely necessitate a change from large mining equipment to smaller equipment. A shift from fewer larger fills to many smaller fills would require construction costs for additional sediment ponds- not part of the initial Phase II assumptions. Finally, the initial modeling runs in the Phase II Economic Study did not project an increase [in] the required return on investment (ROI) capital, which is estimated to be as high as 20%.**

The serious limitations in the initial Phase II study lead the agencies to commission H&A to conduct a "sensitivity analysis" to more accurately reflect the reality of mine economics:

> **The EIS Steering Committee sanctioned a sensitivity study by Hill and Associates to evaluate these limitations. The sensitivity study was designed to determine how the results of the initial Phase II study would change if a different set of Phase I assumptions and inputs were used. Modeling inputs, drawn from mining experience were used to indicate the direction and the magnitude of Phase II study output change resulting from adjusted sensitivity inputs.**
>
> **The sensitivity runs confirmed earlier results indicating that coal production was sensitive to lower reserve recovery because of smaller fills. Production decreased by approximately 20 percent over the initial study results. The price of coal was somewhat sensitive to the model assumptions adjustments, reflected by**

approximately $2.00 more per ton under the most restrictive scenario over the base scenario. This impact is double that of the original Phase II run for the same scenario.

In summary, the EIS economics studies used super-presumptive models that overestimated recoverable reserves, failed to account for the interrelationship of surface and underground mining and underestimated the economic results.