

**TESTIMONY OF
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TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON WATER AND WILDLIFE
U.S. SENATE**

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Chairman Cardin, Ranking Member Crapo and members of the Subcommittee, thank you for inviting me to speak to you today on the subject of the impacts of mountaintop removal coal mining on water quality in Appalachia. I am Paul Sloan, Deputy Commissioner of the Tennessee Department of Environment and Conservation. I am Paul Sloan, Deputy Commissioner of the Tennessee Department of Environment and Conservation and Director of its Bureau of Environment.

I will address the topic by covering five areas:

- coal mining in Tennessee including the nature of the coal reserves and the methods of coal mining;
- the natural resources in the area in which our coal reserves are located;
- the potential pollutants and impacts of coal mining;
- some of the regulatory practices we have used in Tennessee to allow responsible mining of coal while protecting the environment; and
- our recommendations.

Coal mining in Tennessee

Historically, coal mining has occurred in 22 of Tennessee's 95 counties, on the Cumberland Plateau and the Cumberland Mountains. The area stretches from our

Alabama border to our Kentucky-Virginia border, west of Chattanooga, and west and north of Knoxville.¹ Mining began in Tennessee in the early 1800's and gradually increased until eight million tons per year were mined during World War II. After hitting a high of 11 million tons per year in 1972, mining in recent years has been less than 3 million tons per year, significantly less than Kentucky, Virginia, and West Virginia. Coal mining now is mainly occurring in 4 Tennessee counties: Anderson, Scott, Campbell and Claiborne. One estimate of the recoverable coal reserves in Tennessee is 470 million tons.²

We recognize the importance of coal as an energy source. Approximately sixty percent of the electricity supplied to our region by TVA derives from coal. The coal industry provides well-paying jobs in some rural counties that are currently experiencing high rates of unemployment. Coal is mined both in surface and underground mines. Surface mine operations are of three types: area or pit mines, contour mining, in which coal is removed from the side of a mountain by making a bench cut following the contour around, and cross-ridge mining. Cross-ridge mining occurs at the top of a mountain, where the coal seam is accessed by removal of the mountain top. The rock and other material that is over the coal seam, or "overburden" is deposited as spoil material in fills on old mining benches and in head-of-hollow fills and used to return the top of the mountain to the approximate original contour after removal of the coal.

Since the mid-1980's, Tennessee has not administered the Surface Mining Control and Reclamation Act (SMCRA). Instead, the federal Office of Surface Mining (OSM) issues coal mining permits in Tennessee. The Department of Environment and Conservation (TDEC or the Department) does, however, administer the National Pollutant Discharge Elimination System (NPDES) program under the federal Clean Water Act. Therefore, under EPA oversight, we issue discharge permits to coal mining operations, as we do for all other industries as well as municipalities and others. The Department has 118 current NPDES permits for coal operations, including active and inactive sites. Of these, 34 are

¹ The Energy Information Administration of the Department of Energy publishes coal profiles of the states. The Tennessee coal profile published in 1992 is attached.

² Two maps of the coal fields contrasting historic and recent mining are attached.

underground mines, 81 are surface mines, and 3 are surface and underground. The surface acreage affected by mining at both surface and underground mines is approximately 20,000 acres. Cross-ridge mining accounts for less than 500 acres.

As noted above, Tennessee now produces less coal from a smaller geographic area than was the case prior to the enactment of SMCRA in 1977. Pre-1977 unregulated mining has left Tennessee with a significant legacy of abandoned mine lands (AML). Fourteen thousand acres have been identified as impacted by pre-1977 mining and in need of reclamation. Of that, 4,400 acres have been successfully reclaimed, and 9,600 acres remain in need of reclamation. We appreciate the recent reauthorization of the AML program by Congress. Under it, we are scheduled to receive sufficient funds for the reclamation of the 1,900 acres that pose a health and safety risk (known as Priority 1 and 2 sites these are such things as landslides, pits and highwalls). We have not, however, identified a funding source for the remaining 7,700 acres that are causing environmental impacts (these are typically water pollution from high sediment or acid discharges).

The Natural Resources of the Cumberland Plateau and Cumberland Mountains

The area in which the coal reserves are located is a very special one. Some of the natural resources there are globally rare. The Cumberland Plateau is a relatively flat area approximately 1000 feet higher than the surrounding land and the river valleys that cut into it, with some mountains rising another 1000 feet. The Cumberland Mountains are an area in the northern part of the state, adjacent to the Plateau to the east where erosion over geologic time has resulted in mountains separated by river valleys. Since these two areas are some of the highest land in the east-central part of the state, they comprise the headwaters of many of our rivers, including the Sequatchie River, the Collins River, the New River and the Big South Fork of the Cumberland River (designated an Outstanding National Resource Water) and the Obed River (a National Wild and Scenic River) as well as the main stems of the Clinch and Powell Rivers after they have flowed into Tennessee from Virginia.

The U.S. Fish and Wildlife Service has listed as endangered species some of the fresh water mussels in the Big South Fork, the Clinch River and the Powell River. The Clinch and Powell may have more endangered mussel species than any other streams in North America, according to EPA and many other experts. Protecting the Clinch and Powell Rivers is the subject of an ongoing collaborative effort among EPA Region III, EPA Region IV, the Virginia Departments of Environmental Quality and Mines, Minerals and Energy and our Department, as well as scientists from other agencies and NGOs.³ The first sentence of the June 11 Memorandum of Understanding regarding surface mining among EPA, the Department of Interior and the U.S. Army Corps of Engineers states, "The mountains of Appalachia possess unique biological diversity, forests, and freshwater streams that historically have sustained rich and vibrant American communities." This is certainly true of the Cumberland Plateau and the Cumberland Mountains. The unique ecosystems of this area have made it a focus of The Nature Conservancy and the World Wildlife Fund.⁴

For context, coal mining in Tennessee must be considered within the rich cultural and natural heritage of the Cumberland Plateau where it is conducted. The greater Cumberland Plateau and Mountains region is a part of an eco-region that comprises 37 million acres, stretches approximately 500 miles through portions of 6 states (AL, GA, TN, KY, WV, and VA) – a region said to be the largest temperate hardwood plateau in the world and a valued habitat for declining neo-tropical migratory bird species such as the Cerulean Warbler.

Within our state, the Plateau stretches from the Alabama boarder northeast to our KY/VA boarders – its watersheds drain to the east and west into the Tennessee River and the Cumberland River and include a significant portion of the more than 60,000 miles of our rivers and streams. These two watersheds contain some of the most biologically diverse freshwater streams in the United States.

In Tennessee, approximately 600,000 acres of the Plateau are a part of a diverse portfolio of public lands. Over 600 miles of State Scenic Highways thread this landscape that includes 16 State Parks, 16 State Natural Areas, 8 State Forests, 31 State Wildlife

³ A copy of the MOU establishing the group is attached.

⁴ See attached Fact Sheet about the Cumberland Plateau and Mountains for more detail.

Management Areas, 7 National Natural Landmarks, the Obed National Wild and Scenic River, and the Big South Fork National River and Recreational Area. These public lands include over 100 waterfalls (including Fall Creek Falls – the highest in eastern US) and the nation’s highest concentration of natural arches – 107 identified on public lands). In short, it is an invaluable resource for public recreation and ecological diversity.

The federal and state owned lands in the region of current or recent coal mining include:

Cumberland Mountain State Park;
Fall Creek Falls State Park; Frozen Head State Park;
Justin P. Wilson / Cumberland Trail State Park;
Pickett State Park; Catoosa Wildlife Management Area
North Cumberland Wildlife Management Area
(with its Sundquist, Royal Blue, and New River Units)
Pickett State Forest

The Big South Fork National River and Recreation Area.

In 2007, the State of Tennessee under Governor Phil Bredesen’s leadership, acting in concert with The Nature Conservancy and some private companies, made the largest purchase of public land in Tennessee since the Great Smoky Mountain National Park, in the North Cumberlands. This acquisition, valued at \$135,000,000 (State’s portion was \$82 million) brought public conservation benefits to more than 127,000 additional acres in the northern Cumberland Plateau.

The potential pollutants and impacts of coal mining

Coal mining operations have the potential to cause pollution of streams through:

- discharging sediment, whether measured as suspended solids or settleable solids;
- discharging metals, including iron and manganese;
- discharging low pH or acidity;

- physical alterations, including burying streams with fill material, losing streams to the subsurface as a result of blasting, as well as other alterations of the bed or banks of streams; and
- alterations of flow regimes as a result of temporary or permanent changes to the watershed.

The first three are discharges of pollutants that are addressed by EPA's effluent guidelines promulgated for the coal mining industry at 40 CFR, Part 434. These guidelines form the basis for permit limitations in the NPDES permits we and other regulators issue to the coal industry. As mentioned more below, the requirements of these rules are largely unchanged since 1985 and are probably due for review.

The fourth category of impacts listed above is regulated under section 404 of the Clean Water Act as well as under SMCRA. In recent years, scientists have been documenting the fifth item above in various contexts, including coal mining. Streams are impacted by changes in land use in the watershed above them. Although there is growing scientific recognition of this fact, such actions are generally not regulated under the Clean Water Act (construction activity is an exception).

Tennessee's Regulatory Approach

Now I will turn to the regulatory system in Tennessee and to certain practices we have followed in regard to coal mining. In addition to the NPDES permits mentioned above, our Department issues permits under state law for activities that cause alterations of streams or wetlands.⁵ We issue both individual and general permits for these activities.⁶ When an individual permit is required by the Corps of Engineers under section 404, our permit is our certification under section 401. This system allows us to have enforcement authority distinct from that of the Corps for our permit/certification.

⁵ See T.C.A. §69-3-108

⁶ See Rules at 1200-4-7 which are accessible at: <http://state.tn.us/sos/rules/1200/1200-04/1200-04-07.pdf>

For many years, the Department has declined to issue permits under state law for coal operators to mine through streams not impacted by previous mining or to bury streams under waste material, based on the concept that those discharges constitute impermissible pollution of the streams and there are reasonable alternatives available. Therefore, mountaintop removal mining is not practiced in Tennessee as it is in the other Appalachian states. We and OSM have issued permits for cross-ridge mining, as I have described. In the current legislative session, the Tennessee General Assembly enacted a bill proposed by the Governor (HB 2300, which became Public Chapter 289⁷) that codified these prohibitions in Tennessee's Water Quality Control Act. We understand the purpose and intent of the Appalachia Restoration Act (S. 696) is to prohibit filling streams with the waste materials from coal mining. This would be consistent with at least one part of our approach in Tennessee. We would applaud Congress bringing nationwide consistency to this area by enacting such legislation.

Because of our prohibition on mining through streams and burying streams under waste material, OSM's Tennessee office did not issue variances from the old stream buffer zone requirement in its rules prior to the December 2008 rule change. In this context, I would note that, although we applaud Secretary Salazar's move to do away with the 2008 revision to the stream buffer zone in the pending litigation, this is not enough. Under the old rule, it was the common practice both of OSM and the states that have primacy under SMCRA outside Tennessee to grant variances to the buffer zone requirement. This is why OSM was able to state in its rationale for the 2008 change that the new rule would not result in a significant increase in streams segments being buried.

Recommendations

In Tennessee, much of the current mining occurs in areas that are in or near the headwaters of streams. Having clarity as to what waters are protected by the Clean Water Act is critical in this regard. The Supreme Court decisions in the cases of *Rapanos v. U.S.*, 507 U.S. 715 (2006) and *Solid Waste Agency of Northern Cook County v. Army*

⁷Copy attached.

Corps of Engineers, 531 U.S. 159 (2001) have brought much uncertainty to the application of the Clean Water Act to headwater streams and wetlands. We strongly support the Clean Water Restoration Act (S. 787) and its goal of restoring the approach used by EPA and the Corps of Engineers for many years prior to those decisions. Just as the circulatory systems in our bodies rely upon the healthy functioning of billions of capillaries, the nation's rivers and streams will not be healthy unless the headwaters are protected.

On September 24, 1996, the U.S. Fish & Wildlife Service issued a Biological Opinion under section 7 of the Endangered Species Act (ESA) in regard to coal mining. Rather than evaluate the impacts of a particular operation on a particular species, this opinion simply concluded all decisions of OSM and authorized states under SMCRA will be protective of any listed species. SMCRA is based on a balancing of environmental and economic factors in its effort to regulate coal mining while the ESA seeks to protect endangered species, such as the fresh water mussels in the Clinch and Powell Rivers. The opinion seems to assume that the purposes of the two acts are the same. It is my understanding that the opinion has also created some confusion about the level of deference FWS offices are to give to decisions based on SMCRA. For all of these reasons, the 1996 Biological Opinion should be reviewed and reconsidered.

In 2006, Governor Bredesen sent a letter to the former director of OSM requesting that they do a thorough study and an Environmental Impact Statement (EIS) in regard to the coal mining program in Tennessee.⁸ The goal of this request was to have a rigorous, objective analysis of all of the impacts of coal mining on the environment as well as its contribution to the economy. Another economic issue that deserves study is whether the people of the Cumberland Plateau and Cumberland Mountains would be better served by the economic benefits of tourism than by those types of coal mining that put the critically important natural resources of the region at risk. As well as updating the EIS that was done when OSM took over the program, nearly 25 years ago, a new EIS could comprehensively evaluate all environmental impacts including those that are outside the

⁸ Copies of the Governor's letter and an accompanying letter from the Department are attached.

jurisdiction of the Department. The areas of needed study include fragmentation of terrestrial habitat, the cumulative impacts of many coal operations, and consideration of impacts on threatened and endangered species, including those that have been listed since the prior EIS. The changes in population and public land in the last 25 years should also be considered. We continue to hope that such a study will be made.

The adequacy of these effluent guidelines at 40 CFR Part 434, which are largely unchanged since they were adopted in 1985, is a subject which EPA should consider. One example is that these rules include a provision that the discharge does not have to meet the otherwise applicable standards in the event of an unusually heavy rain. This sort of exemption from requirements is not included in the more recently adopted requirements for discharges of storm water from construction sites. Also, much has been learned recently about other metals, including mercury and selenium. EPA should consider whether any coal related operations should have limits for other metals besides iron and manganese.

In closing, we want to urge this subcommittee and the entire U.S. Congress to take action that would bring national consistency to the area of protecting the waters of the United States while allowing responsible coal mining to occur. The intent and purpose of the Appalachia Restoration Act (S. 696), prohibiting valley fills, is one such step. Passing the Clean Water Restoration Act is also critical to protect headwater streams. A prohibition on burying streams would not protect headwater streams if it only applies to larger creeks and rivers, because of the restrictive definition resulting from those Supreme Court cases. We need to restore the protection of our primary water law, the Clean Water Act, to our precious Appalachian streams.