FOREWORD

by
U.S. Rep. Morris K. Udall, Chairman
House Interior and Insular Affairs Committee
January, 1990

Congressman Morris (“Mo”) Udall, tireless champion of the federal strip mining laws, passed away on December 12, 1998. This foreword, which first appeared in the 1980 edition of this book, is included in its entirety as a tribute to Mo and to his extraordinary efforts to protect the public and the environment from the ravages of strip mining.

In the 1960's and early 1970's coal strip mining quickly overwhelmed underground mining as the dominant mining method. But the new mining methods brought ravaged hillsides and polluted streams to the once-beautiful landscape. State governments proved ill-equipped to prevent the severe environmental degradation that this new mining method left in its wake. From our rivers, forests and Appalachian Mountains in the East, to our prime farmlands of the Midwest, to our prairies and deserts of the great West, stories abound during this time of reckless coal operators devastating landscapes, polluting the water, destroying family homes, churches and cemeteries, and threatening fragile ecosystems. Perhaps the most tragic case of abuse came on February 26th, 1972, at Buffalo Creek in Logan County, West Virginia, when a crudely constructed coal waste dam collapsed causing a flood that killed 125 people, left scores of others homeless, and caused millions of dollars in property damage. Something had to be done.

I was proud to stand in the White House Rose Garden on August 3rd, 1977, to witness the President sign into law a bill that I sponsored — the federal Surface Mining Control and Reclamation Act (SMCRA). That Act was passed after years of struggle by people in the coalfields — people who had lived with the mutilated mountainsides, spoiled streams, landslides and destruction of their homes. The voices of those people were heard on that August day.

SMCRA was written to ensure that coal is mined under stringent public safety and environmental protection standards, and that all mined lands must be fully reclaimed to their pre-mining productivity. It also established a strong state/federal regulatory authority with vast enforcement powers to compel operator compliance. To help make sure this happened, the public was provided sweeping citizen rights to participate at every level of mining. Consequently, the Act was, and is, more than a piece of legislation; it is a vehicle of hope for those who live in America's coalfields and their children.
Unfortunately, this Act has not accomplished all that we had hoped. Overall the law has produced a vast improvement in mining methods and reclamation compliance in much of the coalfields. Nevertheless, in some regions — too often the very regions which compelled the passage of the law — abuses continue at an alarming rate.

There are many reasons for this. Clearly, in recent years the federal government and certain states have not fulfilled their mission under the law. They have lacked the political will to stand up to irresponsible mining, and use their enforcement tools to bring it to an end. This is not a problem with a law that is flawed or is too weak; it is a resistance to enforce it.

Regrettable as this is, it was not unforeseen. Congress envisioned that the regulatory authorities could not always be counted on to enforce this law. More than any other reason, this is why Congress provided the public with sweeping citizen rights. I believe that SMCRA's accompanying House Report sums this up best:

The success or failure of a national coal surface mining regulation program will depend, to a significant extent, on the role played by citizens in the regulatory process. The State or Department of Interior can employ only so many inspectors, only a limited number of inspections can be made on a regular basis and only a limited amount of information can be required in a permit or bond release application or elicited at a hearing. While citizen participation is not, and cannot be a substitute for governmental authority, citizens' involvement in all phases of the regulatory scheme will help ensure that the decisions and actions of the regulatory authority are grounded upon complete and full information. In addition, providing citizens access to administrative appellate procedures and the courts is a practical and legitimate method of assuring the regulatory authority's compliance with the requirements of the act. Thus in imposing several provisions which contemplate active citizen involvement, the committee is carrying out its conviction that the participation of private citizens is a vital factor in the regulatory program as established by the act. (H.R.95-218)

No regulatory law, in of itself, will resolve a problem. It is only a tool to be used. If we are ever to rid ourselves of irresponsible mining practices in this country, citizens must learn to use this law to that end.

I am delighted that the Environmental Policy Institute (EPI) is publishing this handbook so that coalfield citizens will better understand and exercise their rights under SMCRA. I commend Mike Clark, EPI President, and Jim Lyon, Director of EPI's Citizens Mining Project for envisioning the need and making the commitment to produce this book. I also commend the book's author, Mark
Squillace, for his hard work, talent and commitment to the coalfields that he so ably demonstrates through this publication.

EPI has a long history of working on this issue. They were with me in the 1970's as we worked for years to get this law passed. Afterwards, in the spirit of this law, EPI set up a citizen watchdog project to work with citizens in monitoring SMCRA's implementation and enforcement.

The Strip Mine Handbook is a natural extension of EPI's work. It translates key components of the law into easy to understand language. In addition, it explains the rights and remedies people can utilize when faced with a mining or regulatory problem.

Make good use of this book. By doing so, together we will continue to fight to curb the ravaging of the coalfields, and help preserve the beauty that distinguishes these areas of our nation.

Signed,

Morris K. Udall

PREFACE

This book grows out of a very simple idea — that citizens have the right to engage their government to enforce environmental laws that are supposed to protect their communities, the land, and the environment from adverse impacts of surface coal mining. In order for citizens to exercise that right effectively, they need a clear understanding of the law and the tools available to them to enforce that law. This handbook is designed to meet that need.

The Surface Mining Control and Reclamation Act of 1977 gave unprecedented powers to citizens to play an active role in the implementation and enforcement of the law. For more than 30 years, citizens groups around the country have demanded that the promises of the law be fulfilled. Too often the state and federal agencies responsible for carrying out the law resisted their efforts and allowed coal companies to engage in unlawful or questionable practices with severe adverse consequences for the environment. The fight for equitable
enforcement has not been easy and is far from over.

By using this book, you can help keep pressure on public officials to protect citizens and their communities and ensure sure that public officials are accountable for their actions. There is no getting around the fact that the Surface Mining Control and Reclamation Act is complicated. But citizens should not have to depend upon a lawyer, mining engineer, or scientist to have the law enforced.

This handbook is designed to demystify the law, to explain mining techniques, to identify typical mining abuse problems, to translate into everyday language the law's many provisions and requirements, and to explain how citizens can use the law to stop mining abuse. And for the first time, this new edition will be available on-line on the Red Lodge Clearinghouse Website [www.rlch.org]. Not only will this make the handbook more readily available, it will provide a forum for interacting with other citizens engaged in the struggle to enforce the law. Working together, citizens can gain the knowledge and experience to take on the coal mining industry effectively and restore the promise of the Surface Mining Act envisioned by two of the real heroes of the law – Mo Udall and John Seiberling.

ABOUT THE AUTHOR

Professor Mark Squillace is the Director of the Natural Resources Law Center at the University of Colorado Law School. Before coming to Colorado, Professor Squillace taught at the University of Toledo College of Law where he was the Charles Fornoff Professor of Law and Values. Prior to Toledo, Mark taught at the University of Wyoming College of Law where he served a three-year term as the Winston S. Howard Professor of Law. He is a former Fulbright scholar and the author or co-author of numerous articles and books on natural resources and environmental law. In 2000, Professor Squillace took a leave from law teaching to serve as Special Assistant to the Solicitor at the U.S. Department of the Interior. In that capacity he worked directly with the Secretary of the Interior, Bruce Babbitt, on variety of legal and policy issues.
INTRODUCTION

Few experiences affect and confound average citizens more than having a coal mining operation under or near their home or community.

Despite assurances from the operator and government agencies that they will protect the public and the environment, those living in the neighborhood of a mine frequently encounter very serious problems. Efforts to combat these problems are often frustrated by complex technical responses from teams of coal company technicians and lawyers that serve only to further muddy the real problems caused by strip mining.

Yet, people willing to assert their rights can prevail, thanks to the Surface Mining and Reclamation Act of 1977 (SMCRA). This law — fought by mining interests from its beginnings and always susceptible to half-hearted enforcement efforts by the responsible state and federal agencies — can nevertheless provide citizens with effective relief from most problems associated with mining.

The Strip Mining Handbook was written to give citizens in mining areas a fighting chance to protect their homes and communities from the ravages of mining operations by providing them with the tools they need to understand the law and use the often complex provisions of SMCRA to their advantage.

Strip Mining and Society

An important historical problem that helped shape the conflict between Appalachian surface owners and coal companies was the broad form deed. When coal companies bargained with landowners to buy mineral rights, they commonly negotiated favorable terms for themselves and did
not adequately explain the terms to the largely uneducated landowners, who often did not understand the contracts.\textsuperscript{1} The companies paid very little for the coal, despite the fact that they reserved the right to use the land surface for coal development.\textsuperscript{2}

Most of the mineral rights deeds were made in the late nineteenth century and early twentieth century, when underground mining was common and surface mining was rare.\textsuperscript{3} Land owners who signed these deeds never expected that their homesteads would be turned into strip mines. Yet up until the mid-1980’s, courts in Appalachia consistently interpreted broad form deeds to permit surface mining operations even though the grantor had retained the surface rights to the land above the coal seam. Broad form deeds included language that waived mining companies’ liability for surface impacts that were “convenient or necessary” to the mining operation.\textsuperscript{4} Based on the turn-of-the-century mining technologies in use during that time period, this language meant that the mining company, which owned only the subsurface mineral rights, could build roads, buildings, coal waste piles, and other structures, as well as harvest timber, on the surface land to facilitate an underground mining operation.\textsuperscript{5} Finally, in 1988, Kentucky amended its constitution so that broad form deeds are interpreted in accordance with the intentions of the parties based on the commonly known coal extraction methods at the time the deed was signed.\textsuperscript{6} That interpretation limited coal companies’ ability to take advantage of the broad language in the old deeds to conduct surface mining on lands for which they did not own surface rights.

Although traditionally the surface owners possess an absolute right to have surface land supported by the underlying strata of rock and soil,\textsuperscript{7} if the deed conveying mineral rights contains a specific provision that waives that right to subjacent support then the surface owner cannot receive compensation for damage to the surface land when the ground underneath it sinks.\textsuperscript{8} Moreover, courts have interpreted the vague language in broad form deeds to waive the right to subjacent support in cases where longwall mining caused subsidence damage to the surface owner’s property.\textsuperscript{9}

Furthermore, West Virginia courts do not require mining companies to compensate landowners

\begin{itemize}
  \item \textsuperscript{1} Harry Caudill, \textit{Night Comes to the Cumberlands}, (1962) at 72-75.
  \item \textsuperscript{2} \textit{Id.}
  \item \textsuperscript{3} \textit{Id.}
  \item \textsuperscript{4} See \textit{McIntire v. Marian Coal Co.}, 227 S.W. 298 (Ky. Ct. App. 1921); \textit{Martin v. Kentucky Oak Mining Co.}, 429 S.W.2d 395 (Ky. Ct. App. 1968).
  \item \textsuperscript{5} Harry Caudill, \textit{Night Comes to the Cumberlands}, (1962) at 72-75.
  \item \textsuperscript{6} Ky. Const. § 19(2).
  \item \textsuperscript{7} \textit{Stonegap Colliery Co. v. Hamilton}, 89 S.E. 305, 311 (Va. 1916).
  \item \textsuperscript{8} \textit{Ball v. Island Creek Coal Co.}, 722 F.Supp. 1370, 1373-74 (W.D.VA. 1989).
\end{itemize}
for the loss of surface water when subsidence from longwall mining drains away surface water resources. Other courts have been reluctant to acknowledge that subsidence constitutes substantial surface damage. In Virginia, the state's highest court refused to recognize that any substantial damage had occurred after a surface owner's land subsided as much as three feet. The court based its opinion on the biased testimony of the defendant coal company's own expert witness. In coalfield states, this kind of judicial sympathy for mining companies is all too common.

### Strip Mining and the Environment

From its earliest beginnings, strip mining has been synonymous with environmental controversy. Grossly underregulated coal mining in the 1960's and 70's spawned one of the greatest abuses of the environment in the history of the United States.

The statistics of strip mine abuse numb the mind and overwhelm the spirit. At the time SMCRA was passed in 1977, more than 264,000 acres of cropland, 135,000 acres of pasture, and 127,800 acres of forest had been lost. More than 11,000 miles of streams had been polluted by sediment or acid from surface and underground mining combined. Some 29,000 acres of reservoirs and impoundments had been seriously damaged by strip mining. Strip mining had created at least 3,000 miles of landslides and left some 34,000 miles of highwalls. Two-thirds of the land that had been mined for coal had been left unreclaimed, and the cost of reclamation in 1977 was estimated at between $10 billion and $35 billion. While many of the worst abuses have been addressed by SMCRA, problems remain.

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10 Section 1307(b) of SMCRA was interpreted to protect surface water from the impacts of surface mining, but not from the surface impacts of underground mining. *Rose v. Oneida Coal Co., Inc.*, 466 S.E.2d 794, 799 (W.Va. 1995). See also *National Wildlife Federation v. Hodel*, 839 F.2d 694, 754 (D.C. Cir. 1988).


12 *Id.* at 787 (J. Russell, dissenting).


16 *Id.* at 83. Twenty thousand miles of abandoned highwalls exist in Appalachia alone. *Id.* at 54. [op. cit.]

17 *Id.* at 85. [op. cit.]


The most serious adverse impacts from coal mining have occurred in the Appalachian region, especially the states of Kentucky, Pennsylvania, Tennessee, Virginia, and West Virginia, but coal mining occurs in many parts of the country including the Midwest, the South and the West. Large mines in such western states as Colorado, New Mexico, Utah and Wyoming began operating in the 1970’s. The Powder River Basin of Wyoming and Montana alone produces 40 percent of the coal burned in the United States. Although many unique problems have been encountered at these western mines, many of the problems are the same as in other parts of the country.

Perhaps the greatest modern threat from coal mining comes from mountaintop removal mining in the Appalachian region. This practice is described in more detail in Chapter 2. Improved technology allows mine operators to remove entire mountaintops to access underlying coal seams by moving mountaintop vegetation, topsoil, and overburden (the mining term for the rock, subsoil, soil, and vegetation overlying the coal seam) to adjacent valleys where mountain streams often run. Most affected streams are considered headwater streams, which are important because they contain unique aquatic life and provide organic energy to fish and other species downriver. The Environmental Protection Agency estimates that over 700 miles of streams have been buried by removed material and 1,200 miles have been directly affected by mountaintop removal mining. In Kentucky, for example, the number of polluted streams rose by twelve percent between 2001 and 2005.

Mountaintop removal mining will cause a projected loss of 1.4 million acres of land by 2010. Roughly 800 square miles of mountains had already been destroyed by 2003, and, while there is little reliable data after 2001, current estimates suggest that as many as 470 mountains have now been flattened in West Virginia, Virginia, and Kentucky.

Coal mining causes many other risks as well. For example, mine fires threaten local communities and contribute significantly to climate change. These fires release poisonous gases and cause sudden subsidence, opening holes large enough to swallow vehicles and buildings. Burning deep underground along cracks in the coal seam, the fires are very difficult to extinguish. One fire in Centralia, Pennsylvania has been burning underground for over 45 years. Centralia’s residential

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21 Id. at 3
22 “Mountaintop Mining/Valley Fills in Appalachia Final Programmatic Environmental Impact Statement” (EPA 9-03-R-05002, EPA Region 3, October 2005) 7
23 Reece, Death of a Mountain
24 Ilovemountains.org/resources, or find in EIS
properties were condemned in 1992, yet a few holdouts remain.\textsuperscript{26}

Another serious problem involves coal \textit{slurry}. Coal slurry is liquid waste created when coal is rinsed with water, starches, or lime. It is often stored in \textit{impoundments} at coal mining sites. On February 26, 1972, an impoundment dam failed above Buffalo Creek, releasing 132 million gallons of slurry. The toxic water washed away a dozen towns, destroyed 4000 homes, and left 125 residents dead.\textsuperscript{27} A generation later, in 2000, a Martin County Coal Company slurry impoundment failed near Inez, Kentucky, releasing an estimated 300 million gallons of slurry into several rivers and streams.\textsuperscript{28} Slurry flooded downstream residents’ properties,\textsuperscript{29} killed aquatic life, and contaminated the water systems of 27,000 people.\textsuperscript{30} All said, this disaster affected more than 100 miles of streams and floodplains, and slurry remains in the stream systems today; it is unlikely that all of it will ever be removed.\textsuperscript{31}

\section*{Making SMCRA Work}

The widespread degradation of land and water resources caused by strip mining — and the failure of the states to effectively regulate the industry themselves — resulted in the passage of the Surface Mining Control and Reclamation Act of 1977. The overriding purpose of SMCRA was to make mine operators conduct their operations in a way that would avoid environmental and public health injury, and to restore the land after mining to its pre-mining condition.

SMCRA, however, has been as controversial as strip mining itself. SMCRA was one of the most bitterly contested environmental statutes ever considered by Congress. The battle did not end when the law was passed. Representatives of the energy and electrical utilities industries (who often burn coal to produce energy) and a number of major coal-producing states fought hard against passage of the legislation. Having lost that battle, these same forces set out to frustrate its implementation.

\textsuperscript{27} ALMOST FLAT, WEST VIRGINIA: HOW CITIZENS BATTLE AGAINST THE MINING COMPANIES THAT CARVE OFF THEIR MOUNTAINTOPS Pittsburgh Post-Gazette (Pennsylvania) February 26, 2006 Sunday
\textsuperscript{28} U.S. Dep’t of Health and Human Services, Health Consultation, Martin County Coal Slurry Release 2. (Citation)
\textsuperscript{29} \textit{Id. at} 3.
\textsuperscript{31} Leslie Cole, \textit{Agency Tours Slurry Spill Site}, LAND AIR & WATER, 2003, at 18.
Citizens groups from around the country have fought hard to maintain the gains achieved through SMCRA. It sometimes has seemed an endless fight. In the early years after passage of the law, the federal Office of Surface Mining made great strides towards achieving the goals that had been established by Congress. But the appointment of James Watt as Secretary of the Interior in 1981 triggered a series of setbacks from which the agency has struggled to recover.

In one of his first moves as Secretary, Watt asked some of the most outspoken opponents of SMCRA to fill key agency posts within OSM. The result was predictable. Enforcement actions dropped dramatically and a frenzied effort to weaken the strict federal regulations began. The zeal with which the new administrators set about to deregulate the industry, however, was coupled with a shocking ignorance of the legal requirements of SMCRA. The initial efforts thus were frustrated. Subsequent efforts persisted, however, and eventually the federal rules were weakened dramatically. Fortunately, the citizen groups that had fought so hard for passage of the law did not give in. Lawsuits were filed successfully challenging many of these new rules. But, as the recent battles over mountaintop removal mining illustrate, efforts to undermine the law have not subsided, and citizens interested in preserving SMCRA should expect the fight to continue for many years to come.

A Continuing Demand for Coal

Coal is the most abundant fossil fuel used for energy production worldwide. At the current rate of consumption, world coal reserves are estimated to last over 150 years. As oil and gas become scarcer and their prices continue to rise, pressure to develop coal resources increases. World coal consumption is growing faster than the consumption of any other kind of energy. The demand for coal in 2030 is expected to be double the demand in 2007.

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32 An anecdote told by a lawyer for the Office of Surface Mining during the early days of the Watt administration aptly describes the attitude of the new appointees. Approximately five months after the Watt administration took control of the Interior Department, the United States Supreme Court handed down decisions reversing the rulings of two lower courts that had found several key provisions of SMCRA unconstitutional. These cases had been defended by the previous administration and were pending in the courts when Watt assumed authority. When word arrived that the Supreme Court had unanimously sustained SMCRA against all of the constitutional attacks, the lawyer contacted the Deputy Director for OSM, Steve Griles, to inform him of the outcome. "We won!", she said excitedly. "No, we lost."
he replied.


Currently the United States depends on coal for half of its electricity production.\textsuperscript{35} With more proven coal reserves than any other country, the United States will continue coal mining not only for domestic use but for export to meet increasing international demand.\textsuperscript{36} The United States currently exports approximately six percent of the coal it produces.\textsuperscript{37}

The continued burning of coal to generate electricity and heat contributes significantly to global warming and climate change. Climate change results from a buildup of carbon dioxide and other greenhouse gases (“GHGs”) in the atmosphere that trap heat that would normally disperse into space. Burning coal with current technologies results in more GHG emissions per unit of energy produced than any other form of energy.\textsuperscript{38} To make matters worse, the mere extraction of coal produces 10% of U.S. methane emissions. Methane, which inevitably escapes from the coal beds during the mining process,\textsuperscript{39} is a dangerous GHG that traps twenty-one times more heat in the atmosphere than carbon dioxide.\textsuperscript{40} (graphic)

Carbon dioxide emissions from burning coal can be reduced in two ways. One is to increase the efficiency of energy conversion in coal combustion; the other is to capture and sequester the GHGs emitted from burning coal.\textsuperscript{41} Much work is being done to promote efficiency and carbon sequestration technology, but unless the GHG footprint of coal consumption is considerably reduced, the long-term future of coal remains in doubt. In the short-term, however, coal will continue to serve as the primary source of energy for electric power generation, and the prospects for further coal development remain fairly strong.

Fortunately, coal mining can be conducted in a reasonably responsible fashion on most lands. The task for citizens is to ensure that the state and federal agencies are carrying out their responsibility to protect the public and the land, air, and water resources that may be adversely impacted by mining.

\textbf{How to Use This Handbook}


\textsuperscript{37} \textit{Id}.

\textsuperscript{38} \textit{Id}.

\textsuperscript{39} \textit{Id}.

\textsuperscript{34} \textit{Id}.

\textsuperscript{40} \textit{Id}.

\textsuperscript{41} \textit{Id}.


\textsuperscript{41} \textit{Id}.
This handbook has been designed to provide ordinary citizens with the background information they need to understand SMCRA, and how the law can be used to protect their homes, property, community and surroundings from problems resulting from strip mining operations. Chapter 2 describes the environmental effects typically produced by different types of mining operations. Chapter 3 gives an overview of the requirements of the federal law, and Chapter 4 explains the rights of citizens to enforce those requirements. The last three chapters provide a step-by-step explanation of how citizens can take action at three crucial stages of a strip mining operation: reviewing the operator's application for a permit to begin mining; monitoring an ongoing surface mine operation; and participating in the proceedings after mining which release an operator from the bond posted at the beginning of the mining operation.

Eight appendices provide you with additional information, including forms, checklists, and the addresses of citizen organizations and regulatory agencies. These materials are designed to help you through the complex rules of the statute. While every attempt has been made to explain unfamiliar terms in the text, a glossary is also provided in an appendix.

Where appropriate, the handbook cites the correct authority, usually the federal statute or regulation. These citations can be helpful in understanding the scope of the law and in describing a perceived problem to an agency official. Be careful, however, about how you use these citations. Most states have their own laws and regulations for implementing SMCRA. In most cases, therefore, the federal regulations themselves are not directly applicable. It is also possible that, over time, the federal regulations may change. Remember that state provisions must be at least as effective as the federal standards. Therefore, the federal standards are an appropriate benchmark against which a state program can be measured, and citizens may reasonably demand that state programs be interpreted to ensure that citizens are protected to the same extent as they would have been under the federal standards.

Those actively involved with a surface mining problem should obtain the most recent copy of the federal and state laws and rules. The federal rules can be browsed online at the Government Printing Office website: ecf.gpoaccess.gov. This website provides free access to an electronic version of the Code of Federal Regulations. To find the surface mining regulations, select “Title 30” from the drop-down menu and click on parts “700-999.” The federal rules can also be purchased from the Government Printing Office. Your local Congressperson or Senator may be able to assist you in obtaining the federal documents at little or no cost.

State statutes and regulations should be readily available from your state agency (see websites and addresses listed in Appendix G).

The reader who faces serious mining problems may ultimately have to look beyond this publication. But this citizen's manual should provide you with the information and the confidence to get started.
The Need for Continuing Citizen Involvement

A primary reason that coal operators and states have fought so hard against SMCRA is that it gives citizens extensive rights to participate in the process of controlling strip mining abuse. In providing for maximum citizen participation, Congress parted company with the coal operators and the states. Congress believed that citizen involvement would be crucial to SMCRA's success.

Congress was right. The law won't work unless citizens make it work, just as it wouldn't have been passed in the first place if citizens hadn't demanded it. In short, if you want to see the abuses of strip mining ended, you are going to have to do part of the job yourself. Many resources — from this handbook to local environmental organizations — exist to help you. Use them.

One final note of encouragement is in order. As a private citizen you should not expect to know as much about mining and reclamation as either the coal operator or the government agency in charge of regulation. Don't allow your lack of knowledge to discourage or intimidate you. You most likely will be the first to recognize that your property is threatened by a mining operation; Congress intended that you should be able to stop any damage before it starts. Notify the state and federal authorities of the problem immediately. Ask them to explain in detail their response and the reasons for that response. Even if no violation of law is ultimately found, you will have accomplished an important step by putting government agencies and coal operators on notice that private citizens are watching them. And when other problems do arise, both you and the agency will have gained valuable experience with the public participation requirements of the law.
THE ENVIRONMENTAL EFFECTS OF STRIP MINING

All mining operations have a disruptive effect on the environment, but the sheer volume of material involved in strip mining makes the impact on the environment especially acute. Surface mining (another name for "strip mining") can severely erode the soil or reduce its fertility; pollute waters or drain underground water reserves; scar or alter the landscape; damage roads, homes, and other structures; and destroy wildlife. The dust and particles from mining roads, stockpiles, and lands disturbed by mining are a significant source of air pollution. In order to participate effectively in controlling the abuses of strip mining, it is important to understand the basic techniques of surface mining and the types of environmental damage that can result.
The Mechanics of Strip Mining

This section describes the five main types of surface coal mining techniques: area mining, open pit mining, contour mining, auger mining, and mountaintop removal. Underground mining is also considered in this section. Terrain, economics, and custom generally dictate which technique an operator chooses.

All surface or strip mining first removes the overlying vegetation, soil and underground rock layers in order to expose and extract coal from an underground seam or coal deposit. Responsible surface mining attempts to limit the side effects of this removal through several basic steps:

1. First, the surface vegetation (trees, bushes, etc.) under which the coal seam lies is scalped or removed.

2. Next, the operator removes the topsoil, usually by bulldozers or scrapers and loaders. The operator either stockpiles the topsoil for later use or spreads it over an area that already has been mined.

3. The exposed overburden is then usually drilled and blasted, and removed by bulldozers, shovels, bucketwheel excavators, or draglines, depending on the amount of overburden and the type of mining.

4. After removing the overburden, the exposed coal seam is usually fractured by blasting.

5. The operator then loads the fractured coal onto trucks or conveyor belts and hauls it away.

6. Next, the operator dumps the overburden or spoil that was removed during the mining process on a previously mined area and grades and compacts it. (Special handling may be necessary if any of the overburden contains toxic materials, such as acid or alkaline producing materials.)

7. Any excess overburden that remains after the mined area is completely backfilled (Eastern mines generally have substantial excess spoil) is deposited in a fill.

8. Finally, the operator redistributes the topsoil and seeds and revegetates the mined area.
While these basic steps are relatively consistent, the environmental impacts of the five main techniques vary significantly.

**Area Mining**

Area mining is the technique most often employed in the flat or gently rolling countryside of the Midwest and western United States. Area mines excavate large rectangular pits, developed in a series of parallel strips or cuts which may extend several hundred yards in width and more than a mile in length. Following scalping of the vegetation and topsoil removal, area mining begins with an initial rectangular cut (called the **box cut**).

![Diagram of Area Strip Mining with Concurrent Reclamation](image)

The operator places spoil from the box cut on the side away from the direction in which mining will progress. In large mines, huge stripping shovels or **draglines** remove the overburden. After extracting the coal from the first cut, the operator makes a second, parallel cut. The operator places the overburden from the second cut into the trench created by the first cut and grades and compacts the spoil. The backfilled pit is then covered with topsoil and seeded. This process continues along parallel strips of land so long as the ratio between the overburden and the coal seam, called the **stripping ratio**, makes it economically feasible to recover coal. Mining may cease in a particular area, for example, where the coal seam becomes thinner or where the seam dips further below the surface.

When the operator reaches the last cut, the only spoil remaining to fill this cut is the overburden from the initial or box cut. Yet, since the box cut spoil may lie several miles from the last cut, the operator generally finds
it cheaper not to truck the box cut spoil to the last cut. Instead, he may decide to establish a permanent water impoundment in the last cut. These \textcolor{orange}{\textit{last cut lakes}} are commonplace in the coal regions of the Midwest but may pose environmental and land use problems. A later section of this handbook describes strategies for challenging these last cut lakes.

**Open Pit Mining**

Open pit mining is similar to area mining. The technique is common in the western United States (and other parts of the world) where very thick — 50 to 100 foot — coal seams exist. Open pit mines are usually large operations. Production levels may exceed 10 million tons of coal per year.

The thick coal seams found at these large mines ensure that the amount of land disturbed for each ton of coal produced is much smaller than for most Eastern and Midwestern mines. Nonetheless, the sheer size and capacity of these mines necessitates substantial surface disturbance. In open pit mining, the operator first removes the overburden to uncover the coal seam. The overburden may be placed on adjacent, undisturbed land, or it may be transported by belt or rail to the other end of the same mine or to an exhausted mine that needs to be backfilled. Typically, several different pits, at various stages of development or reclamation, are being worked at any given time on a single site.

![Typical open pit mining method with thick coal seam.](image)

Large machines remove the overburden in successive layers until the coal seam is reached. The operator then extracts the coal and transports it to a power plant or to a rail line for shipment to a power plant. Next,
the operator backfills the pit with previously extracted overburden and grades it. Topsoil that either has been saved or transported from the ongoing operation is spread over the spoil, and the area is seeded.

The thin overburden and thick coal seams that are frequently encountered with open pit mines may result in insufficient spoil material to reclaim the mined land. SMCRA provides an exemption from the "approximate original contour" or AOC requirement for operators confronting this situation.42

Contour Mining

The contour method is used almost exclusively in the steep Appalachian region of the United States, where coal seams outcrop from the sides of hills or mountains. Contour mining makes cuts on the slope where the coal seam is located, to remove first the overburden and then the coal itself. Overburden from adjacent cuts is used to fill previous cuts. The operator continues making cuts until the ratio of overburden to coal becomes uneconomical. The operation then continues along the contour of the mountain until the coal resources, or the operator's resources, are exhausted.

Contour mining uses small earth-moving equipment such as power shovels, backhoes and bulldozers — similar to equipment used for many other kinds of construction activities. Contour mining is therefore a favorite technique of small, often undercapitalized operators in Appalachia. Persons in the construction business, for example, can easily move in and out of the mining business as market conditions change.

In contrast to open pit operators, contour operators frequently have too much spoil after mining is completed. This results from a phenomenon called the swell factor. When overburden is removed it breaks up and loses some of the compaction that occurred over the thousands of years that it laid undisturbed. Even after replacement and mechanical compaction, the volume of the material increases by up to 25%.43 The pits left after extracting the relatively thin coal seams of the East are often not large enough to hold this added volume. As a result, most contour miners must dispose of their excess spoil in another fill or disposal area. The most common disposal areas are at the heads of valleys, called valley fills or head of hollow fills. The construction of a fill means that additional land beyond that required for mining must be disturbed in order to accommodate that mining. The harmful effects of valley fills are discussed further under the section on mountaintop removal.

43 Bragg v. Robertson, 248 F.3d 275, 286 (4th Cir. 2001)
Auger Mining

Auger mining usually takes place in conjunction with a contour mining operation. Once the contour operator reaches the point where the height of the highwall makes it uneconomical to remove further overburden, the operator may choose to extract further coal, before beginning reclamation, by drilling into the face of the highwall with a mining auger. Large diameter drill bits, which can be broken into relatively small lengths, may bore as much as 200 feet into a coal seam, thereby extracting as much as 60 percent of the coal resources. Because auger mining removes support for the materials above it, care must be taken to fill the auger holes after extracting the coal. Failure to fill auger holes may cause tension cracks and other problems on the surface.

Mountaintop Removal

The final method of surface coal extraction to be described here is aptly called mountaintop removal. Using this technique, operators remove entire mountaintops to reach the coal seam lying underneath it. Mountaintop removal requires more capital and engineering skill than the contour mining method, but it allows the operator to extract virtually the entire coal seam. Mountaintop removal, which is used increasingly in Appalachia, became possible only after technology evolved and the economics of mining changed to allow greater stripping ratios. Today it is economical to remove as much as 1,000 feet of mountain to reach a sizable coal seam.44

Mountaintop removal method.

Mountaintop removal is a controversial mining method that generates an enormous amount of spoil, and unlike every other technique, none of the mined area is backfilled. What used to be the top of the

mountain becomes a large, flat plateau. Because steep mountain grades make restoring the natural
contour of the landscape impossible, SMCRA provides an exception to the normal rule that post-mining
land must be restored to its approximate original contour. Typically, the operator places the spoil in a fill
in an adjacent valley or hollow. The massive fills constructed in Appalachia appear generally stable.

Fewer than twenty slope movements have been reported out of the more than 6,800 fills built from
1985 to 2003. However, the fills bury streams that flow through Appalachian valleys, and the
deforested mine sites cause flooding, even after revegetation efforts are complete. Rivers and
streams are polluted. The mining process itself causes dust, noise, and fires. Subsidence cracks the
foundations of nearby houses and disrupts the operation of nearby wells. The change in
topography is startling.

Mountaintop removal mining has an immeasurable effect on wildlife. The areas most suitable for
mountain top removal fills are the narrow, V-shaped, steep-sided hollows that are sometimes inhabited
by endangered or rare animal and plant species. Streams buried by mountaintop spoil or polluted by heavy
metals contain endangered and threatened aquatic species. Fish migration routes are cut off. Of course,
removal of mountaintops may also damage the aesthetic quality of an area.

Mountaintop removal mining is occurring more and more frequently, and citizens’ efforts to stop it
through litigation have proven largely unsuccessful. During the debate over SMCRA, citizen groups in

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46 Environmental Protection Agency, Mountaintop Mining/Valley Fills in Appalachia Final Programmatic
47 Recently proposed legislation, if passed, will make it even easier for mine operators to dispose of excess spoil in
valley fills. Currently, 30 C.F.R. 816.57 prohibits mining activities within 100 feet of streams (called the “stream
buffer zone” rule) without special authorization. The Office of Surface Mining Reclamation and Enforcement’s
(“OSM”) proposed legislation, however, would explicitly allow valley fills without prior authorization. 72 Fed. Reg.
48890 (2007). However, a recent EPA press release claims that the EPA will now apply stricter standards for
permits under the Clean Water Act. (Press release date: 06/11/2009) available at:
http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceeceac8525735900400c27/e7d3e5608bba2651852575d20059
0f23!OpenDocument.
48 Bragg, 248 F.3d at 286 (4th Cir. 2001).
50 Id.
51 In Bragg, 248 F.3d at 286 (4th Cir. 2001), the Fourth Circuit Court of Appeals reversed a lower court decision that
would have brought mountaintop removal mining to a grinding halt. West Virginia citizens and an environmental
group had sued state mining officials and the Corps of Engineers (COE), claiming that they issued mining permits,
“without making requisite findings, that (1) authorized valley fills, (2) failed to assure the restoration of original
mountain contours, and (3) violated other environmental protection laws.” Id. at 286-87. The district court’s decision
would have required operators, before obtaining a permit, to make the nearly-impossible showing that valley fills
would not violate a 100-foot “buffer zone” around streams unless it was shown that the streams would not be
affected. Id. at 287. The Fourth Circuit, however, reversed on sovereign immunity grounds—essentially a
technicality, meaning that the plaintiffs could not sue a state official under state law in federal court. A pre-litigation
settlement of some of the issues resulted in an agreement by federal agencies to produce an environmental impact
Appalachia tried to persuade Congress to ban mountaintop removal completely. After heated discussions, Congress allowed the technique, but only under special conditions which are described later in this handbook.

After Mountaintop Removal.

Underground Mining

Despite its title, SMCRA’s provisions apply not only to surface mining, but also to the surface effects of underground mining. As a percentage of all coal mining, underground coal mining has been declining for many years, but in 2007 it still accounted for approximately 31 percent of coal mining, as compared with 69 percent surface mining. An underground coal mine usually begins much like a contour mine, with a cut into the side of a hill. Indeed, many abandoned surface mines serve as the face for the underground mine. The bench created by the cut often houses the mine office and equipment storage. Several portals are usually dug into the coal seam at the base of the highwall. These portals serve both as entryways statement detailing the harmful effects of mountaintop removal and identifying potential remedies. Bragg v. Robertson, 54 F. Supp. 2d 653, 666 (S.D. W. Va. 2000). Permitting procedures are explored further in Chapter 5.

In Kentuckians for the Commonwealth, Inc. (KFTC) v. Rivenburgh, 317 F.3d 425, 430 (4th Cir. 2003), the Fourth Circuit again overturned a plaintiff’s victory that would have struck a major blow to mountaintop removal mine operators. (KFTC), a non-profit social justice group, challenged COE’s practice of issuing Clean Water Act § 404 permits (described later in this chapter under “Water Resource Damage”) to operators dumping overburden into valley fills. A §404 permit allows operators to dump “fill material” into rivers and streams. But KFTC argued that “fill material,” as used in § 404, should be defined as material dumped in waters for some primary beneficial purpose, while the COE had defined “fill” to include mining waste such as overburden. Id. The district court would have adopted KFTC’s proposed interpretation, preventing the dumping of overburden in valleys containing streams and eliminating operators’ cheapest overburden disposal method. Id. The Fourth Circuit Court of Appeals, however, reversed and held that COE had acted within its authority by defining “fill material” to include coal mining waste.

Id.


for the mine and for ventilation.

Underground mining can take various forms. Traditionally, operators used a room-and-pillar method whereby large pillars of coal were left in place to hold up the roof and protect the miners. In retreat mining, operators return to the mine after it was otherwise completed to rob the pillars, or extract the coal pillars and allow the roof to subside while retreating toward the coal portals.

In recent years, the majority of underground mines have moved to a process called longwall mining. In contrast to more traditional techniques, longwall mining uses powerful coal extraction machinery and hydraulic lifts to remove the entire coal seam during the initial mining operation. A cutting machine shaves coal from the face of the seam while hydraulic lifts support the roof near the working face. When the hydraulic lifts move forward, the unsupported overburden collapses behind it, causing the ground surface to subside. This collapsing of the surface above the mine is called planned subsidence. Because of the nature of the machinery that is used, longwall mining is only practical where the coal seam is of relatively uniform thickness.

Unless the mine workings have been backfilled to support the overburden, any surface area lying above a spot where coal has been mined by underground methods may subside at any time in the future. Sinkholes from room-and-pillar mining develop unpredictably 20 to 50 years after mining takes place. The advantage of planned subsidence is that the damage occurs relatively soon after mining occurs, and the operator is readily available to mitigate any damage that results. Nonetheless, the environmental effects of planned subsidence may be unacceptable in certain circumstances. For example, structures above the mining, including buildings, roads and pipelines can be seriously damaged. Also, subsidence cracks may drain or dewater streams, ponds, wells and groundwater aquifers above the coal seam. These events can cause an irreversible adverse impact on the hydrologic balance.

Despite these problems, SMCRA does not forbid mining methods that involve planned subsidence. It does, however, set standards to control subsidence and other forms of surface damage caused by underground mining.

Environmental Effects

Unless proper precautions are taken, any of these mining techniques will significantly harm the environment. The older mining areas of Appalachia testify daily to this reality. In Appalachia alone,
thousands of square miles of mountainous terrain have been scarred by strip mining and left unreclaimed. For 25 years, operators simply pushed overburden downslope from the mountain mines, causing landslides, erosion, sedimentation, and flooding. The remaining unstable highwalls, often 100 feet high, crumble and erode, disrupting drainage patterns and causing massive water pollution.

Erosion increases dramatically when the protective plant cover is removed and the remaining soil is not stabilized. Studies show that water flows from selected mines carry sediment loads up to 1,000 times greater than flows from unmined areas.55 In a 1979 analysis, the Department of the Interior found gullies greater than one foot in depth on more than 400,000 acres of mined land.56 High sediment loads and erosion also increase the likelihood and severity of floods, fill lakes and ponds, degrade water supplies, increase water treatment costs, and adversely affect the breeding and feeding of certain fish.

Not all strip mining damage is as dramatic as mutilated mountainsides with highwalls exceeding 100 feet. SMCRA has helped eliminate many of these more obvious abuses. But long-term damage to the soil, water and wildlife continues despite Congress’ efforts to control it.

**Damage to Land Resources**

Long-term damage to soil resources from strip mining may be masked when intensive, short-term land management gives a false impression that reclamation has been successful. Strip mining eliminates existing vegetation and alters the soil profile, or the natural soil layers. Mining disturbs and may even destroy the beneficial micro-organisms in the topsoil. Soil also may be damaged if reclamation operations mix the topsoil with subsoils, diluting matter in the surface soil.

Strip mining also may degrade the productive capacity of adjacent land. Spoil placed on adjacent land that has not been properly prepared may erode and thereby cover topsoil or introduce toxic materials to the soil.

Mining also may alter the natural topography of the area in ways that prevent a return to the previous land use, such as farming. Returning the soil from the mined area to full productivity is especially important in the Midwest, where some of the world's most prime farmland is now being mined for the coal that lies

55 Final EIS. OSM-EIS-1, supra, note 2, at BIII-59. According to the EIS, the heaviest sediment loads occur 5-25 years after unreclaimed mining. Unrevegetated spoil piles may continue to erode 50-65 years after mining has been completed. Id.

56 Id. at BIII-28, 29.
beneath it.

In the western United States the arid or semiarid conditions of that region may increase the damage to soils caused by mining. Once the natural vegetation is removed, erosion may increase dramatically. One of the most persistent problems at western mines is establishing a "diverse, effective, and permanent vegetative cover... capable of self-regeneration and plant succession at least equal...to the natural vegetation of the area," Native vegetation in the West has adapted to the arid climate to provide maximum soil stability during drought periods. Moreover, diverse native species provide forage for animals throughout the year. But because revegetation using native species is often difficult and expensive, many operators choose non-native species, which stabilize the soil over the short-term. Often, however, these species are not suited for forage and they may not be capable of long-term self-regeneration as required by SMCRA.

Water Resource Damage

Irresponsible strip mining can pollute streams and disrupt water supplies. SMCRA was intended to prevent these problems. Sometimes water pollution is easy to spot. Clear water often turns reddish-orange if it contains a high concentration of iron. However, other types of pollution are harder to detect. A highly acidic stream may look no different than a clean one unless you notice that it has no fish in it.

Water discharged from strip or underground mines must meet pollution standards for four major pollutants: pH, iron (inapplicable during rainstorms and during the reclamation phase), manganese and suspended solids (i.e., sediment). Let's briefly look at each of the major pollutants and problems they cause:

• pH — pH is a measure of the relative acidity of liquids. A pH of 7 is considered neutral. Liquid with a pH below 7 is acidic; liquid with a pH above 7 is alkaline. Each number on the pH scale represents a 10-fold increase or decrease in acidity. Thus, a pH of 3 describes a liquid that is 10 times as acidic as a liquid with a pH of 4.\(^{58}\)

The law requires that the pH of water released from a mine be between 6 and 9.\(^{59}\) Although the more common problem associated with mining operations is acid drainage (low pH), alkaline drainage (high pH) is less common but can also cause problems. Alkaline mine drainage or runoff is most common


\(^{59}\) Id.
in the West, where alkaline overburden may be exposed to water during mining. Acid drainage is typically caused when pyrite (fool's gold) or marcasite in the overburden is exposed to air and water during the mining process. Rainwater mixes with the pyrite to form sulfuric acid which is washed into streams and ponds below the mine.

Acid is one of the most damaging pollutants. It kills fish and other aquatic life, eats away metal structures, destroys concrete, increases the cost of water treatment for power plants and municipal water supplies, and renders water unfit for recreational use. Acid also may leach-out highly toxic metals or cause them to be released from soils. These toxic substances kill aquatic life and can contaminate water supplies causing serious adverse human health effects. Thousands upon thousands of miles of streams have been degraded by acid mine drainage and runoff. Exposed acid material may continue to leach acid for 800 to 3,000 years.

- **Iron**— (Iron hydroxide, sometimes called "yellow boy") increased amounts of iron in streams which result from mining activity can be toxic to aquatic life and contribute to the "hardness" of water.

- **Manganese**— Manganese is a metal that is soluble in acid once it has been unearthed by mining activity. It pollutes water supplies and corrodes other metals.

- **Suspended solids**— Also referred to as “TSS” (Total Suspended Solids) or sediment, suspended solids are solid material, both mineral and organic, that has been moved from its place of origin by air, water, ice, or gravity. Removing vegetation, blasting the overburden and using heavy equipment create erosion and introduce sediment into streams. Sediment loads are particularly high in mountainous and hilly terrains. Suspended solids reduce light penetration in water and alter a waterway's temperature. Fish production is hindered; spawning grounds are destroyed. Sediment increases the burden on treatment plants, and streams filled with sediment lose some of their capacity to carry runoff following storms, thus making the stream more prone to flooding. A sediment-laden stream flow can fill up a reservoir and severely reduce its useful life span. Finally, sediment may act as a carrier for other pollutants such as pesticides, heavy metals and bacteria.

A mining operation that discharges or deposits overburden or spoil into a body of water, including streams and wetlands, must obtain a permit under section 404 of the Clean Water Act (CWA). Section 404 regulates any discharge of any dredged or fill material, including overburden
from mining activities as well as material deposited in a water body for construction purposes. A permit under SMCRA does not release a mining operation from the obligation to obtain a CWA section 404 permit.

Section 404 applies to all “navigable waters” in the United States, which until recently the Army Corps of Engineers (“COE”) has defined to include almost any river, lake, stream, pond, wetland, or other body of water, including some streams that may not flow year round. Section 404 requires that the mining operator provide alternative proposals evaluating the discharge effects of overburden disposal on different streams within the permit boundary. It also requires that the discharge of fill does not jeopardize threatened or endangered species, does not violate state or federal water quality standards, and does not contribute to the significant degradation of waters of the United States. Clean Water Act permit requirements are discussed further in Chapter 5.

Mining activity can also affect the quantity and quality of groundwater supplies. In many coal fields, the coal beds themselves serve as aquifers — underground supplies of water. The water in these aquifers flows — although when compared to surface water streams, groundwater flows at a very slow rate. The fact that groundwater flows, however, allows it to recharge or replenish many surface water systems. Surface mining operations will necessarily cut through the coal aquifer and also any aquifer above the coal seam that is being mined. Blasting activity and subsidence from underground mining may break up the impermeable layers of rock that hold water in these aquifers, even where the overburden is not being extracted.

These aquifers may be the source of water for many wells. Flow patterns in such aquifers may be changed, thereby adversely affecting water pressure in wells. Portions of aquifers and surface systems may be dewatered, reducing the availability of water for other uses, and perhaps interfering with prior existing

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62 The scope of waters covered by the Clean Water Act was narrowed by two Supreme Court decisions in the last decade. First, the Court in Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers, 531 U.S. 159, 166-68 (2001), held that the CWA did not extend to isolated ponds that were not adjacent to navigable waters, notwithstanding COE’s “migratory bird rule,” which would have extended CWA jurisdiction to isolated ponds visited by interstate-traveling birds. SWANCC clarified United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 133 (1985), which had extended CWA jurisdiction to some non-navigable waters, by stressing that Riverside Bayview Homes applied only to wetlands adjacent to navigable waters. SWANCC, 531 U.S. at 167. Second, the Court held that a “significant nexus,” or close relationship, must be shown between the stream or wetland in which spoil is dumped and a navigable waterway before the COE may regulate that waterway. See Rapanos v. United States, 547 U.S. 715, 759 (2006); Mark Squillace, From Navigable Waters to “Constitutional Waters”: The Future of Federal Wetlands Regulation, 7 U. MICH. L. REV. 799, 848-50. This post-Rapanos definition of “navigable waters” is murky at best, creating confusion and disparate results in section 404 enforcement actions around the country. See Id. at 848-50 (2007)
63 40 C.F.R. § 230.10(a)
64 40 C.F.R. § 230.10(b)
65 Id.
66 40 C.F.R. § 230.10(c)
water rights. Even where water losses from existing aquifers do not affect other users, disposal of excess water from those aquifers may cause environmental damage.

It has yet to be demonstrated that a groundwater system destroyed by mining can be permanently restructured. If not conducted properly, coal development — especially in the West — may leave behind barren landscapes vulnerable to continual erosion and disrupted groundwater systems. As a result, the value of these areas for agriculture and other uses may be greatly diminished.

Wildlife Damage

Wildlife often suffers severely as a result of strip mining. In the short term, all species are either destroyed or displaced from the area of the mine itself. Mining also may have adverse, long-term impacts on wildlife, including impairment of its habitat or native environment. Many animal species cannot adjust to the changes brought on by the land disturbance involved in coal mining. In cases where an important habitat (such as a primary breeding ground) is destroyed, the species may be eliminated. Unique habitats like cliffs, caves, and old-growth forests may be impossible to restore. Larger mines, such as those in the West, may disrupt migration routes and critical winter range for large game animals.

As previously noted, strip mining exposes heavy metals and compounds that can alter the pH or acid balance of runoff and leach into streams. Such pollution can impair the habitat of fish and other aquatic species, thereby reducing population levels. Even where species survive, toxic materials can lower reproduction and growth rates. Strip mining also causes increased turbidity and siltation of streams and ponds, greater variation in stream flow levels and water temperature, and stream dewatering, all of which contribute to the endangerment of aquatic species.

When fill material is replaced following a strip mining operation, it is heavily compacted to prevent it from eroding or sliding. As a result, easily-planted grasses out-compete tree seedlings, whose growth is slowed by the compacted soil, and complete reforestation is unlikely. More effective reclamation techniques now exist and must be promoted.

The Appalachian Mountains, where northern and southern species converge, contain an

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68 Id. at 6-7.
69 Environmental Protection Agency, supra note 5.
incredible diversity of unique plants and animals. Appalachian ecoregions are home to one of the richest salamander populations in the world as well as increasingly rare forest types, all of which are threatened by the region’s heavy mining activity.70

Proper compliance with SMCRA’s reclamation requirements can help minimize the environmental harm associated with strip mining. Reclaimed land can reconnect fragmented wildlife habitats, and properly replaced soil can encourage re-growth of high-value trees like the American Chestnut. According to the U.S. Fish and Wildlife Service (FWS), SMCRA effectively protects endangered species through provisions designed to minimize direct impacts on wildlife71— but only when properly enforced. The indirect impacts, or “incidental take,” such as increased human access to endangered species created by mining roads, long-term changes in land use, and invasions by new species, are impossible to quantify.72

Furthermore, FWS’s proclamation that SMCRA can adequately protect endangered species from the dangers of coal mining is now under attack. Conservation groups are petitioning FWS and the Office of Surface Mining Reclamation and Enforcement (OSM), demanding that more effective measures be taken to protect at-risk species.73

More than 31.5 billion tons of coal has been mined under SMCRA as of July 2009.74 The chapters that follow

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71 1996 Biological Opinion, supra note 26, at 10.
72 Id. at 7, 11
73 DEBORAH M. MURRAY ET AL., CENTER FOR BIOLOGICAL DIVERSITY, PETITION BEFORE THE U.S. FISH & WILDLIFE SERVICE AND THE OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT TO REINITIATE FORMAL CONSULTATION ON ALL SURFACE MINING ACTIVITIES CONDUCTED UNDER THE AUTHORITY OF THE SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977, 1, 8-9 (Jan. 15, 2008) [hereinafter 2008 Petition]. After initial consultation with OSM in 1996, FWS published its biological opinion stating that coal mining operations would not materially harm endangered species as long as SMCRA’s protections applied. Incidental take, described above, was predicted to be “unquantifiable”—not nonexistent, but impossible to accurately measure. 1996 Biological Opinion, supra note 26, at 10-11. The Center for Biological Diversity, the National Parks Conservation Association, the World Wildlife Fund, and the Tennessee Wildlife Resources Agency are currently petitioning FWS and OSM to revoke the 1996 Biological Opinion and reinitiate formal consultation on all coal mining regulated under SMCRA. 2008 Petition, supra, at 1. The petitioners claim that the 1996 Biological Opinion is overbroad, vague, and inadequate, and that changed circumstances require a new consultation under 50 C.F.R. § 402.16. See id. at 3-4. The petitioners claim that § 402.16 mandates further consultation because each of the following factors are met: (a) the amount or extent of taking specified in the incidental take statement is exceeded, (b) new information reveals effects of the action [coal mining] that may affect listed species or critical habitat in a manner or to an extent not previously considered, (c) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion, and (d) a new species is listed or critical habitat designated that may be affected by the identified action. Id. The petitioners offer evidence that the effect of coal mining on endangered species, while perhaps not quantifiable, is substantial—and growing. Id. at 15-30.
74 STATEMENT OF EARLY BANDY, OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT – U.S. DEPT. OF THE INTERIOR (July 25, 2007) available at http://www.doi.gov/ocl/2006/SMCRA_072507.htm “[As of July 2007] about 29.5 billion tons of coal have been mined while SMCRA has been in place.” See also MOUNTAINTOP MINING FACT BOOK, National Mining Association (March 2009), available at
describe the major provisions of SMCRA and the opportunities for citizens to ensure that the law is fully implemented and enforced.

http://74.125.155.132/search?q=cache:x2WYtUg_D8AJ:www.nma.org/pdf/fact_sheets/mtm.pdf+tons+of+coal+mined+since+SMCRA&cd=37&hl=en&ct=clnk&gl=us  “The U.S. has produced more than 1 billion tons of coal annually for each of the last 14 years.”
A BRIEF REVIEW OF SMCRA

The Surface Mining Reclamation and Control Act (SMCRA) establishes minimum federal standards for the regulation of coal mining. Using the federal standards as a guide, each state where there is (or may be) surface coal mining may propose a state regulatory program to control mining. SMCRA requires the Secretary of the Interior to approve any state program that meets or exceeds the federal standards. This procedure allows individual states to gain primary control over the regulation of surface mining.

The federal government must establish its own program for any state that fails to submit a program, or that submits an inadequate program. All of the major coal states have received federal approval of their state programs. However, a federal program was implemented in Tennessee when citizen groups uncovered serious problems with the state's administration of surface mining controls. Today, Tennessee remains the only significant coal mining state with a federal program.
SMCRA requires that each state program contain certain performance standards with which all operators must comply. These performance standards set levels of environmental damage that are deemed unacceptable and in some cases, they actually tell the operator how a mining operation must be conducted to protect the environment. SMCRA also requires each state to adopt certain provisions to govern permitting and bonding, inspection and enforcement, and to establish procedures for designating certain lands unsuitable for mining. This chapter provides an overview of the basic requirements established by SMCRA in each of these areas. Later chapters of the handbook contain more detailed discussions of the statute.

### Scope of the Act

SMCRA covers all surface coal mining operations in the United States as well as the surface effects of underground coal mining. In addition, SMCRA covers coal preparation and processing facilities, coal waste piles, and those coal-loading facilities that are located at or near a mine site. The only exceptions to the Act's coverage are for: (1) operators who produce less than 250 tons of coal per year; (2) operations that extract coal solely for a landowner's personal (noncommercial) use; (3) operations that extract coal secondarily to the extraction of other minerals (the coal may not exceed 16.6 percent of the total minerals removed); and (4) operations in which the extraction of coal is incidental to government-financed construction.

### Permitting and Bonding

SMCRA requires that all operators obtain a valid permit from the state regulatory authority in order to mine. To obtain a permit, an operator must submit extremely detailed information. For example, the operator must describe the characteristics of the affected land and its ecology; the operator's legal status, financial situation, and past history of complying with the law; and plans for the proposed mining and reclamation operations. Based on the information submitted, an operator must show that he can meet all the requirements of SMCRA and can successfully reclaim the land in compliance with the standards of the Act and its implementing regulations. An operator may also need to obtain additional permits under
Performance Standards

SMCRA requires the operator to restore the affected land to a condition capable of supporting the uses it could support before mining, or to “higher or better uses.” The operator must also:

1. restore the approximate original contour (AOC) of the land by backfilling, grading, and compacting;

2. minimize disturbances to the hydrologic system by avoiding acid mine drainage and preventing additional contributions of suspended solids (sediments from erosion) to nearby streams and other water bodies;

3. reclaim the land as soon as practicable after the coal has been extracted, and even as the mining operation moves forward; and

4. establish a permanent vegetative cover in the affected area.

If a site's annual rainfall exceeds 26 inches, the operator must ensure that the land remains successfully revegetated for five years after all seeding, fertilizing, and irrigation has ended. If the annual precipitation is less than 26 inches, the operator is responsible for successful revegetation for 10 years. Some 15 other performance standards apply to all surface mines. For example, standards are established for blasting, for wildlife protection, for road construction and maintenance, and for disposal of excess spoil material. In addition, special performance standards apply to particularly

vulnerable areas — alluvial valley floors in the West, prime farmland (most commonly found in the coalfields of the Midwest), and steep slope areas (which dominate Appalachia). Performance standards are described in detail in Chapter 6.

Inspection and Enforcement

A mine must also comply with all permit conditions and provisions of the approved state regulatory program, and SMCRA generally allows state standards to be more stringent than federal standards. Moreover, a mine operator may not conduct operations in a manner that would pose an imminent hazard to public health and safety or to the environment, even if no other violation of the law results.

To help ensure compliance with the law, SMCRA requires at least one complete, on-site inspection per quarter and one partial inspection per month without advance notice to the operator. Partial inspections may include aerial surveys, so long as they are conducted in such manner that violations can be detected. SMCRA also provides for special inspections when citizens complain about hazards or violations at a particular mine.

When an inspector detects a violation, SMCRA requires the inspector to take enforcement action. Moreover, the inspectors are vested with full legal authority to shut down a mining operation where violations pose an imminent threat to the public or a significant, imminent threat to the environment. If the violation does not cause imminent danger to the health or safety of the public, or significant imminent environmental harm, the inspector must, by law, issue a notice of violation (NOV). If the violation is not abated within the time established by the inspector, the inspector must issue a cessation order (CO) and impose whatever affirmative obligations are necessary to remedy the violation.

Corporate officers or agents may be assessed civil penalties (or face criminal prosecution) for willfully and knowingly failing to halt violations of SMCRA. Finally, no permit may be issued for any operation that is owned or controlled by any person, corporation, or other entity with outstanding violations of SMCRA. The federal government maintains a computer data base of outstanding violations, and citizens can ask the government to check this data base when questions arise about individual operators.

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78 Id. at §1271(a)(3) (2008).
79 Id.
In states with approved programs, the federal Office of Surface Mining (OSM) must conduct a sufficient number of oversight inspections to ensure that the state is doing its job. OSM does not have authority to take enforcement action during these inspections — but if staff note violations during oversight inspections, or if the office otherwise has reason to believe that violations have occurred — OSM must notify the state. If the state fails to act within 10 days from the date it receives notice of a violation, OSM is obligated to reinspect and take enforcement action. The inspection and enforcement provisions of SMCRA are discussed in more detail in Chapter 6.

Designating Lands Unsuitable for Mining

When Congress enacted SMCRA, it decided that coal mining should be banned completely on certain lands. Thus, the law flatly prohibits mining on lands where reclamation under the Act’s standards is not technologically or economically possible, and on certain categories of federal land, including lands within the National Park System, the Wild and Scenic Rivers System, and the National System of Trails. Mining is also prohibited within 300 feet of occupied homes, churches, public buildings, and public parks — and within 100 feet of cemeteries or public roads. (Public roads, however, may be relocated after notice and an opportunity for a public hearing.) Finally, mining is prohibited whenever it will adversely affect a publicly-owned park or place included on the National Register of Historic Sites, unless the agency having jurisdiction over the park or site approves the proposed mining operation. The only exception to these prohibitions is for valid existing rights (VER). The VER exception was established to protect private property rights against infringements by the government that would otherwise be considered unconstitutional. (See box.) At a minimum, it seems clear that a party cannot invoke the mining prohibitions contained in the statute if, for example, the home, road or park was built after the mining operation was approved.

### VALID EXISTING RIGHTS (VER)

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80 30 U.S.C. §1272(a)(2) (2008). An interested party, however, must petition to have the area designated as unsuitable for mining. The petition must contain allegations of facts with supporting evidence. Then, within ten months of receiving the petition, the regulatory authority must hold a public hearing after proper notice and publication of the location and date. See id. at §1272(c).

81 Id. at §1272(e).

82 Id.
Under the Fifth Amendment to the United States Constitution, the government may not take private property for a public use without paying the owner of that property "just compensation." Over the years, the Supreme Court has held that a "taking" under the Fifth Amendment includes not only physical invasions of private property, but also regulations that are so onerous that they substantially diminish the value of the property. Although the development of the law in this area is murky, not all regulations that adversely affect property values result in a declaration that private property has been taken. In some circumstances, for example when the government adopts regulations to prevent activities that may harm society at large, regulations have been upheld, even where they dramatically reduce property values.

In prohibiting mining on certain lands, Congress was aware of these constitutional issues and sought to avoid the takings problem by declaring that enforcement of the prohibitions would be subject to "valid existing rights" (VER). In other words, the prohibitions simply don't apply to someone who has VER. On several occasions, the Office of Surface Mining has tried to offer guidance as to what constitutes VER but these efforts have long been mired in controversy and litigation. In January, 2008, however, the Federal Court of Appeals for the D.C. Circuit, which is charged under SMCRA with reviewing rules that are national in scope, issued a decision upholding an Interior Department interpretive rule requiring an operator claiming VER to:

(1) produce a legal document vesting him with right to mine the land at the time it became subject to SMCRA and
(2) prove either that the landowner at that time had made a good faith effort to obtain all necessary mining permits or that the coal was immediately adjacent to – and necessary to ensure economic viability of – a surface mining operation existing at SMCRA's enactment.

While this decision appears to resolve the issue for now, citizens should recognize that the VER concept is inherently ambiguous and will likely remain the subject of future litigation and administrative review.

83 U.S. Const., amendment V, ("...nor shall private property be taken for public use without just compensation").
84 National Mining Ass'n v. Kempthorne, 512 F.3d 702 (D.C. Cir. 2008)
SMCRA also gives the states discretionary authority to designate certain other lands as unsuitable for mining. These include lands where surface mining --

- is incompatible with existing state or local land-use plans;

- affects fragile or historic lands on which such operations could cause significant damage to important historical, cultural, scientific and aesthetic values and natural systems;

- affects renewable resource lands (such as forest lands and farmland); or

- affects natural hazard lands such as lands prone to earthquakes.

Later chapters of the handbook flesh out this brief overview of SMCRA. The next chapter reviews the rights of citizens to participate in the implementation and enforcement of the Act, both at the state and the federal levels.
The Surface Mining Control and Reclamation Act grants affected citizens the broadest rights to participate in administrative and judicial proceedings ever granted in a federal environmental statute. For each decision to grant a permit, SMCRA allows the citizen an informal conference, a right to go onto the mine site, a formal hearing on the merits of the decision, and judicial review of the hearing officer's decision.

The citizen also has the right to call for and participate in inspections of mine property, to use informal or formal agency proceedings to challenge an agency's failure to take proper enforcement action, and to appeal any adverse decision to the courts. In addition, citizens can challenge in court any regulation promulgated under SMCRA and petition to designate an area unsuitable for coal mining.

SMCRA also allows citizens to recover damages caused by violations of the Act. Citizens may sue in state or federal court if the federal government, the state government, or any operator fails to comply with the provisions of the Act. Most importantly, citizens need not have an economic interest to bring court actions;
aesthetic and recreational interests also are protected. In short, Congress gave citizens the opportunity to protect their rights and to play a vital role in SMCRA's implementation. But broad public rights will not lead to better mining practices. They are meaningless unless citizens assert those rights and they must assert those rights in a timely manner or risk having their claims rejected simply because they failed to meet deadlines established under the law. The following section describes in more detail the rights granted to citizens under SMCRA.

Citizen Rights in Permit Proceedings

Under SMCRA, very few operators can mine coal in the United States without obtaining a permit from OSM or the state regulatory authority. The prospective operator must first file a permit application, which contains extensive information on the proposed mining activity and its anticipated impact on the surrounding environment. When the complete application is submitted to the state regulatory authority, the applicant must place an advertisement in a "local newspaper of general circulation" near the proposed mine at least once a week for four consecutive weeks, stating that a permit application is on file with the state regulatory authority. The permit application must also be available for the public to inspect and copy either at the county courthouse or another local public office near the proposed mine.

How can you or your citizen organizations intervene in this process? Any person who has "an interest which is or may be adversely affected" by the proposed mine (see box below) has the legal standing or right to file written objections with the regulatory authority within 30 days of the last published newspaper advertisement. These comments are open for public inspection, and the regulatory agency must transmit them to the operator applying for a permit. Also within 30 days, you or other affected persons can request an informal conference to discuss your objections with the state regulatory authority. Following such a request, the regulatory authority must advertise and hold a conference within a reasonable time and in the locality of the proposed mine.

After the informal conference, the regulatory authority must make a decision to grant or deny the permit, in whole or in part. Within 30 days following that decision, you, the applicant, or any other affected

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person may request a formal administrative hearing on the reasons for the decision. The formal hearing must be held within 30 days, unless all parties agree to waive this deadline.

While waiting for the hearing to take place, you may request that the regulatory authority grant temporary relief \(^{88}\) to prevent a permit from being issued before the outcome of the hearing is known. Keep in mind that an operator cannot ask the state to issue a denied permit pending the outcome of the hearing. Although the exact procedures will vary from state to state, all states must provide an adjudicatory or formal hearing. This allows all parties to the hearing full rights to present evidence, cross-examine witnesses, subpoena persons and documents, and have their case heard by an impartial hearing officer. The regulatory authority must make a decision, with written findings of fact and conclusions of law, within 30 days following the hearing.

WHO MAY PARTICIPATE IN SMCRA PROCEEDINGS: "STANDING"

In most formal proceedings under SMCRA (i.e., proceedings where parties appear before an administrative law judge with the right to examine witnesses), the right to participate is limited to persons who have an interest that is or may be adversely affected by the agency decision.

The courts have also held, however, that "interested persons" include not only persons who potentially suffer direct affects from a mining operation, but also those persons who may suffer an injury to their aesthetic or recreational interests. Thus, if a mine causes pollution that may interfere with recreational opportunities such as fishing or hiking – in places you live or visit – you are adversely affected within the meaning of the law.

Furthermore, citizens groups may participate in these proceedings on behalf of their members if any one of their members could participate in his or her own right. The broad standards for standing under SMCRA are generally quite easy to meet. Nonetheless, government agencies and industry opponents frequently question the

\(^{88}\) 43 CFR § 4.1367(a) (2008).
standing of citizens. Accordingly, you must be prepared to make the required showing before participating in a formal administrative or judicial proceeding.

Whenever the Office of Surface Mining (OSM) is the decision-making authority (either within a state with a federal program, or because OSM has assumed enforcement authority after the state's failure to act), appeals must be filed with the Office of Hearings and Appeals (OHA) at the Department of the Interior. OHA assigns an administrative law judge to hear each case in the vicinity of the mine site, and to render a decision. If you wish to contest that decision, you must file an appeal with the Interior Board of Land Appeals (IBLA).

Although the IBLA is located in Arlington, Virginia, appeal proceedings can usually be handled entirely by mail. Only after exhausting these administrative appeals can you proceed into federal court.

While most appeals to the IBLA must be filed within 30 days from the date that you receive the decision of the administrative law judge, appeals from permit decisions must be filed within 20 days. Check your calendar carefully. Failure to meet this deadline will probably result in the loss of all rights to further challenge the government's action. (The procedures used by the OHA are set forth at 43 C.F.R. Part 4. The permit appeal procedures can be found at 43 C.F.R. § 4.1360-1369.) Be sure to request a copy of those procedures from OHA as soon as you anticipate possible involvement in an administrative appeal.

Keep in mind that the terms of a mining permit cannot be changed until the coal operator obtains a permit revision from the regulatory authority. If the company proposes a "significant alteration in the reclamation plan", then the permit revision is subject to the same public notice, informal conference, and hearing provisions granted under the normal permit application standards. Moreover, affected persons have the same right to be notified and to participate in a permit renewal application as in any original permit application. Changes to permit boundaries other than “incidental changes,” generally require a new permit application.

Mining permits are limited to terms of five years. Accordingly, many operators choose to apply for permits to mine in an area where work can be completed in about five years. Other operators may file a permit application that encompasses an area much larger than can be mined in five years. Although the latter applicant will have to submit more data covering the larger permit area at the beginning, he has the advantage of only needing to seek a permit renewal after five years has elapsed. Obtaining a permit renewal involves much less scrutiny than a permit application — and as long as operators comply with the

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91 30 U.S.C §1261(a) (2007).
92 30 C.F.R. §774.13(d) (2008).
requirements of the law, they are entitled to such a renewal.

Permits may also be transferred, assigned, or sold subject to the approval of the regulatory authority. An application for such a transfer must be published in a newspaper in the locality of the operation, and any citizen may submit written comments on the application. The procedures for appealing decisions involving transfers of permits, along with procedures for reviewing decisions concerning permit revisions and renewals are found at 43 C.F.R. § 4.1370-77 (2008).

SMCRA requires states with approved programs to have procedures that are comparable to those available at the federal level. You can obtain a copy of the specific procedures that apply in your state from your state agency. (For state and federal regulatory agency contact information, see Appendix H.)

Citizen Rights in Bond Release Proceedings

All states require operators to post a bond before issuing a surface coal mine permit. The applicant must post the bond after a permit application has been approved, but before the permit is issued. The bond covers all of the land that the operator will disturb during a particular phase of the operation. The amount of the bond must be large enough to allow the regulatory authority to step in and use those funds to pay for the cost of reclaiming the land or other resources that may be damaged by mining in the event that the operator abandons his legal responsibilities.

Once an operator completes mining and begins reclamation work, she may file a request for the release of all or part of the bond. Sixty percent of the bond may be released after the operator has completed rough backfilling, grading and drainage control. An additional portion of the bond may be released after revegetation has been established, as long as the remaining bond amount is sufficient to cover the cost of reestablishing vegetation, if that should become necessary. The remainder of the bond cannot be released until reclamation has been fully completed and the period of responsibility for assuring its success has expired — between five and ten years after reclamation is completed.

Upon filing a request for bond release, the operator must advertise his request at least once a week for four successive weeks in a newspaper of general circulation in the locality of the surface coal operation. Within 30 days after receiving a bond release request, the regulatory authority must conduct an inspection and evaluation of the reclamation work at the site.

You and any other affected persons have the right to file written objections to the proposed release from bond within 30 days after the last publication of the newspaper notice. If such objections are filed and
a hearing is requested, the regulatory authority must inform all parties and hold the hearing in the locality of
the mine within 30 days.\textsuperscript{93} Citizens have the right to an on-site inspection during the bond release
proceeding.

\textbf{Citizen Rights in Proceedings
to Designate Lands
 Unsuitable for Mining}

As a condition for approval of each state program, all states were required to develop a planning
process to determine which lands may be unsuitable for mining. In areas designated as unsuitable, mining
permits would not be granted.\textsuperscript{94} Under each state program, any person having an interest that is, or may
be, adversely affected has the right to petition the regulatory authority to have an area designated as
unsuitable. Operators, however, may petition to have such a designation terminated.

A petition must allege facts and supply supporting evidence. The designation petition seeks to
demonstrate one or more of the following points:

\begin{itemize}
  \item Reclamation is not technologically and economically feasible;
  \item Coal mining operations will be incompatible with existing state or local land use plans or programs,
  \item Mining operations will affect fragile or historic lands and could result in significant damage to
    important historic, cultural, scientific and aesthetic values and natural systems;
  \item Mining operations will affect lands that feature renewable resources (including aquifer recharge
    areas) and could result in a substantial loss or reduction of long-range productivity of water supply
    or food or fiber production; or
  \item Mining activities will affect natural hazard lands (including areas with unstable terrain or those
    subject to frequent flooding), which could substantially endanger life and property.
\end{itemize}

The first of the above allegations — that reclamation is not technologically or economically feasible — is

\textsuperscript{93} 30 U.S.C § 1269 (2007).
the most powerful. If the regulatory authority finds that reclamation is infeasible, it must designate the lands as unsuitable for mining. However, it may be extremely difficult to convince an agency that reclamation cannot be accomplished. Statements, studies, and the testimony of experts will likely be needed to build a solid case. On the other hand, while it is generally easier to prove any of the other four allegations, SMCRA affords the regulatory authority broad discretion in deciding whether to designate land as unsuitable for those enumerated reasons. Thus, it is critically important to marshal both public and expert support to bolster a designation petition that depends on one or more of the latter four criteria.

The regulatory authority must hold a public hearing in the locality of the area under consideration within 10 months after a designation petition is filed. Within 60 days of the hearing, the agency must issue a written decision along with reasons for the decision. You may appeal a designation decision to the appropriate state court or, in the case of a federal designation, to federal court. While a petition is pending, or an area is otherwise under study for designation, no mining permits may be issued.\(^{95}\)

Even in states with an approved program, the Secretary of the Interior is the authority for designating federal lands as unsuitable for mining.\(^{96}\) The process for determining the unsuitability of federal lands must employ the same standards and procedures as for non-federal lands. In addition, the Secretary of the Interior has an affirmative obligation to review all federal lands to determine whether they include any areas unsuitable for mining.

### Citizen Rights in Inspection and Enforcement

A mine must comply with all permit conditions, all provisions of the approved state program, and all other applicable state and federal statutes and regulations. Moreover, a mine operator may never conduct operations that pose an imminent hazard to public health and safety or threaten a significant, imminent hazard to the environment. Where a mine operator fails to meet its statutory obligations, citizens have certain rights to demand inspections and appropriate enforcement action.

### Citizen Requests for Inspection-Citizen Complaints

SMCRA grants you the right to request and receive an inspection whenever you present information to the regulatory authority that suggests a violation of the Act. The complaint may be written or oral, but an oral complaint must be followed by a written statement. Citizens requesting an inspection have the right to accompany the inspector on the inspection or to keep their identity confidential. If you wish to keep your identity confidential, you should make this choice clear in your written complaint. The state must make an inspection unless it has a good reason to believe that the information is incorrect or that it does not constitute a violation.

An inspection in response to a citizen complaint must be conducted within a set period of time, usually 15 days. If the regulatory authority has reason to believe that an imminent danger to the public or environment exists, however, an immediate inspection is required. Following the inspection, the regulatory authority must inform you in writing, within a set period (usually 10 or 15 days), of any enforcement action it has initiated, or will initiate, or the reason why no action was deemed necessary.

If the regulatory authority refuses to conduct an inspection, or if you are dissatisfied with the thoroughness of the inspection, you can request informal review of the agency’s actions by the head of the agency. The agency must respond to a citizen's request for review in writing, within a reasonable time period (usually no more than 30 days).

In states with an approved regulatory program, it is a good idea to file a citizen complaint with both the federal OSM and the state agency simultaneously. The state agency will still bear the primary responsibility for conducting the inspection and for taking any enforcement action, but it may feel more pressure to act if it knows that the federal government is looking over its shoulder. Moreover, the receipt of a complaint at the federal agency should trigger notice to the state agency that it must take appropriate action within 10 days or risk having OSM step in and assume direct enforcement responsibility for any violations that may exist. Although the federal agency’s involvement may prove helpful, federal rules require you to notify the state agency either before or at the same time you notify OSM — and OSM will probably insist that you do so before it takes any action. Appendix E contains a sample citizen complaint.

Citizen Review of NOVs and COs

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98 30 C.F.R. § 842.15
Any time a notice of violation (NOV) or a cessation order (CO) is issued, modified, vacated, or terminated (as a result of a citizen inspection or otherwise), a citizen who is, or may be, adversely affected can request formal administrative review of the action. Usually, when an operator challenges the issuance of a notice or order, he argues that no violation occurred or that the time provided for correction is too short. On the other hand, citizens initiating review usually contend that the time for abatement should not be extended, that the notice should not be terminated, or that the inspector should have imposed stronger remedial action requirements. Citizens also may argue that the situation warrants a CO rather than an NOV.

CITIZEN INTERVENTION IN FORMAL ADMINISTRATIVE PROCEEDINGS

In many cases, a coal operator will initiate formal administrative proceedings to challenge an NOV or other agency enforcement actions. Citizens may want to intervene in those proceedings. Normally, persons who have an interest which is or may be adversely affected may intervene as a matter of right. In other cases, the hearing officer may exercise discretion in deciding whether or not to allow intervention. If you are permitted to intervene, you become a full party to the proceedings with all the rights and privileges of the other parties.

Civil Penalties

After issuing a notice of violation, a state may assess a civil penalty. Penalties are extremely important to the success of SMCRA because they deter future violations, not only by the operator assessed the penalty, but also by other operators who are aware of such penalties. Depending on the circumstances, penalties may be assessed for a set amount, or they may be separately assessed for each day of a continuing violation.

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100 43 CFR § 4.1110(c) (2008).
— a procedure which provides an incentive to abate the violation quickly. To help ensure consistency, most states follow set procedures for determining the amount of penalties. As a concerned citizen, you can use these procedures to make your own judgments about whether or not the state is complying with its enforcement responsibilities. When a CO is issued, a penalty must be assessed. Moreover, if the CO is for failure to abate a NOV, then a minimum penalty of $750 a day is required for each day that the violation continues.

The amount of the penalty affects not only the abatement efforts of the individual violator, but also the compliance efforts of other operators and, ultimately, the overall enforcement climate. Therefore, it is important for citizens to participate to ensure that adequate penalties are assessed. Most states have established procedures both for informal and formal hearings concerning civil penalty assessments, and citizens usually are able to participate in these proceedings.

Suspending or Revoking Permits

Whenever the regulatory authority determines that any requirements of SMCRA or the permit have been or are being violated, and concludes that these violations were willfully caused or were the result of unwarranted failures of the operator to comply, it must issue a suspension order.

This order suspends the mining permit and requires the permittee to show cause — show why his permit should not be suspended or revoked. A permittee who requests a public hearing on the issue is entitled to a formal hearing that includes basic rights of cross-examination and discovery – a process that allows a party to conduct a formal investigation to learn about all information that is available to adverse parties before a hearing is held. For example, a party may send written questions to another party about issues in the case, may ask the other party to admit or deny the truth of certain statements and may even examine potential witnesses who may be called by the other party. As described in the above box on citizen intervention in formal proceedings, citizens may participate as intervenors in these show-cause proceedings.

Attorney Fees and Costs
All state and federal SMCRA programs provide for the award of costs and expenses, including attorney fees, to citizens in administrative enforcement proceedings (including permit hearings). Such awards generally may be obtained from operators or governmental agencies that are parties to the proceeding. In order to obtain a fee award you must win all or part of the case.

In contrast to the rights of private citizens to receive an award in cases in which they prevail, the mine operator or governmental agency opposing the citizen's action may recover their costs and expenses from citizens only when it is shown that the citizens initiated and/or participated in the proceeding in bad faith; that is, solely to harass or to embarrass the mine operator or governmental agency. Citizens can appeal adverse decisions on the awards of costs and expenses to the appropriate state court. If you should become involved in a proceeding that may lead to an award of costs and expenses, be sure that your attorney is aware of the provisions that allow recovery of these costs and of the importance of keeping accurate records to support a possible fee petition.

Despite SMCRA's strong support for citizen recovery of attorney fees, states and operators alike have strongly resisted attorney fee claims by citizens. Thus, while you should not assume that fees will be readily recovered, you should recognize the importance of fee recovery when you have prevailed in a case. Even if your request is denied, you will help pave the way for future citizens seeking fee recoveries. And if your request is denied improperly, your case may trigger an OSM review of the state program and a substantial improvement in the administration of fee recovery under SMCRA.

Citizen Access to Agency Information

Access to agency information may be critical for citizens to successfully exercise their right to participate in various agency proceedings. As a general rule, state laws must allow citizens access to all information and records relating to permits, inspections, bonds and other background data on which the agency makes its decisions. Information provided by an operator that, if released, might jeopardize an operator's competitive position with regard to other operators, however, is protected from public scrutiny.

Citizens may also use the Federal Freedom of Information Act (FOIA) or a counterpart, which exists in many states, to obtain needed information. These statutes allow access to most documents which are held by the government, usually at little or no charge.

The chief advantage of FOIA is that it imposes strict time limits on the agency's response to a citizen's request for information. Usually documents must be provided within 20 working days from the date of receipt of a request. In certain limited situations, one 10-day extension may be available to the agency if it provides the requesting party with written notice. The agency may charge reasonable search and/or photocopy fees, but these charges can be waived upon request if the agency finds that furnishing the information will primarily benefit the general public. If the agency denies your request for a fee waiver, you may nonetheless be able to reduce or eliminate copying costs by agreeing to review the documents at the agency's office.

In 1996, President Clinton signed into law the Electronic Freedom of Information Act Amendments. These amendments recognize that information is increasingly stored on computers or other electronic media and clarified that FOIA applies to electronic "documents" as well as to paper. The amendments also allow you to request that information in either paper or electronic form. Agencies may or may not accept FOIA requests by e-mail.

If the agency denies your request for documents — in whole or in part — you may file an administrative appeal. The agency must generally rule on your appeal within 20 days from receipt. You may further appeal to federal court, where a freedom of information case takes precedence over most other cases.

Even if your state does not provide the same responsiveness to requests for information as the federal FOIA, the documents you need about a particular mining operation may be available from the federal government. Thus, a federal FOIA request may prove sufficient. Appendix A provides a sample FOIA request.

Citizen Suits

If administrative remedies fail, you may need to go to court to compel compliance with the law. SMCRA gives affected citizens the right to bring civil actions in federal district courts against the Secretary of the Interior or the appropriate state agency in order to compel compliance with a non-discretionary duty under the Act. Citizens also may bring civil actions in federal district court against a coal operator or other person in violation of the law. In most circumstances, you must file a notice of intent to sue 60 days before filing the lawsuit. All or part of the costs of such litigation, including legal fees, can be recovered if you prevail in at least part of your lawsuit. As with administrative proceedings, you may be held responsible for the operator or agency's costs only if they can demonstrate that your claim was made in bad faith or solely to harass them.

SMCRA requires state programs to have the same or similar citizen suit provisions for state court actions as those contained in the federal Act. If you believe that a lawsuit may be necessary, contact an attorney and try to arrange for representation at little or no cost to you. If you can demonstrate that you have a strong case, the attorney may be willing to take the case on the expectation of recovering legal fees after the case is completed (on a "contingency" basis). Alternatively, many law firms allow their lawyers to represent deserving clients who cannot afford an attorney “pro bono.” (Short for “pro bono publico,” meaning “for the good of the public.”)

Federal Enforcement in a State

Section 521(b) of SMCRA provides that whenever the Secretary of the Interior has reason to believe that strip mining violations are being caused by a state's failure to enforce its program, the Secretary must notify the public and may hold a hearing to discuss the state's enforcement failures. If the hearing confirms the Secretary's suspicion, and if it is further found that the state has not adequately demonstrated its capability and intent to enforce the law, the Secretary then must substitute federal enforcement for all or part of the state program.

Citizens who believe that their state is fundamentally failing to meet their legal obligation to enforce the law should present this information to the Secretary of the Interior through the petition process, described in greater detail immediately below. If the Secretary agrees to hold a hearing as required by § 521(b) of SMCRA, you may present your evidence at that hearing.

**Review and Withdrawal of a State Program**

The Secretary of the Interior is required to implement a federal program (and withdraw approval of a state program) if the state "fails to implement, enforce, or maintain its approved State Program as provided for in this Act." As a private citizen, you can petition the Director of OSM to evaluate a particular problem with the implementation or enforcement of a state program. While the petition will need to be tailored to address the specific failures on the part of the state, Appendix F contains a sample "§ 733 letter" to help you get started. Even if it seems unlikely that OSM will withdraw approval of the state program, the petition process is a good vehicle for bringing problems to OSM's attention.

Within 60 days of the petition, the Director must determine whether to conduct an evaluation of the state program. The first step in evaluation is for the Director to hold an informal conference with the state. If that does not resolve the problem or problems, the Director must give notice and hold a public hearing. A decision on whether or not to withdraw approval of a state program is made following the public hearing.

**The Right to Initiate and Participate in Federal Rulemakings**

Under SMCRA, any person may petition the Director of OSM to issue, amend, or repeal a rule or regulation. The petition must set out the facts, technical justification, and points of law that support the

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rule change — and indicate whether a hearing is desired.\textsuperscript{120} OSM must make a decision within 90 days. If the petition is denied, OSM must notify the petitioner of the reasons in writing. This process can be used in many circumstances but it may be most useful where you have stumbled upon an apparent flaw in a state program. Under the procedure described here, you can petition OSM to commence rulemaking proceedings, which would require the state to correct such flaws. Even if OSM refuses to require the correction, it might very well provide you with an interpretation of the state program that satisfies your concerns. State refusal to accept this interpretation would supply you with substantial grounds for returning to OSM and demanding appropriate action.

Under SMCRA, any person may participate in federal rulemaking. Federal agencies must publish proposed rules in the Federal Register (see box below), allow the public at least 30 days in which to file written comments, and hold at least one public hearing on proposed rules.\textsuperscript{121} The agency must consider all comments received before promulgating a final rule. If you want to comment on a proposed rule, you should be sure to obtain a copy of the official notice in the Federal Register. The Federal Register notice will contain: 1) the text of the proposed rule; 2) an explanation of the agency's reasons for proposing the rule; and 3) the name and telephone number of the agency official to contact for more information. You also may request this official to allow additional time to submit comments if you believe such time is necessary.

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\textbf{THE FEDERAL REGISTER AND THE CODE OF FEDERAL REGULATIONS}

The Federal Register is a government document published every working day. It contains notices of governmental actions as well as all of the proposed and final rules that are promulgated by federal agencies. After rules become final they are published in the Code of Federal Regulations (CFR), which is updated annually. Although the CFR contains all of the final rules, it is often helpful to refer to the original Federal Register notice in which the rule was originally promulgated, since is resource often contains a detailed explanation of the agency's intent and reasoning in adopting its rules. These explanations generally are considered to be binding agency interpretations of their regulations.

\textsuperscript{120} 30 CFR § 700.12 (2008).
\textsuperscript{121} 30 U.S.C §1251(a) (2007).
Final rules may be challenged in federal court. If the rules are national in scope, the challenge must be brought in the District of Columbia.

Protection of Coal Company Employees from Retaliation

Often miners or other employees are aware of and troubled by violations at a mine, but unwilling to come forward with the information because of fear that they will lose their jobs or suffer other reprisals from the operator who employs them. Section 703 of SMCRA prohibits discrimination against employees or representatives of employees who have filed or instituted (or caused to be filed or instituted) any proceeding under the Act, or have testified or are about to testify in any proceeding resulting from the administration or enforcement of the Act.\textsuperscript{122}

Damage Actions in Federal Court

Section 520(f) of SMCRA empowers individual citizens with the legal right to sue for damages caused by strip mining. To prevail under Section 520(f), you must prove that your person or property was injured as a result of a violation by any mining operation of any rule, regulation, order, or permit issued pursuant to the Surface Mining Act. Thus, unless the operator already has been cited for the violation that caused your damage, it behooves you to file a citizen complaint and obtain an agency finding that a violation did occur before proceeding with your damage claim in federal court. Once the operator has been cited for the violation, you need only prove that the violation was the cause of

\textsuperscript{122} 30 U.S.C §1293 (2007).
your damage in order to prevail. If you prevail on your claim, your legal fees and costs may also be recovered.
The right of citizens to review an application for a permit to begin a strip mine operation is a key feature of SMCRA. The permitting process was described briefly in the section on citizen rights in permit proceedings. This section focuses more closely on the kinds of problems that might be found during a permit review.

Few reading experiences are likely to be as intimidating as that of reviewing your first coal mine permit application. At first, the application will seem highly technical — even impenetrable — to an untrained citizen. Moreover, an application for a large mine may encompass 25 to 30 bound volumes. (By contrast, an application for a small mine in the East may have been prepared almost entirely by filling in the blanks on a form provided by the state agency.) But patience and perseverance will pay off. It soon becomes evident when looking at the application that much of it is comprised of maps and charts without much bearing on issues you wish to raise. Indeed, a 25-volume application may contain only two or three volumes of text. These few volumes should provide much of the information you will need to conduct your review and will help direct you to the maps and other documents relevant to your concerns. Although you should not expect to master all the technical jargon, most people can quickly get a basic grasp of the proposed mining operation and the potential problems it presents. Agency staff also can help. (See box.)

WHAT TO DO WHEN YOU ENCOUNTER QUESTIONS
If you are having trouble interpreting a particular aspect of the permit application, ask an agency employee for assistance. Many government employees are eager to help. Be courteous and friendly, and you may wind up with a valuable contact within the agency. Remember that an agency employee charged with reviewing an application would much prefer to identify and solve problems before the application is approved. Once approved, agency employees may become more defensive. At that point you're not merely questioning an applicant's work; you are also calling into question the integrity of the agency's decision.

After receiving a permit application, the state or federal agency first determines that the application is administratively complete. An administratively complete application is one "which the regulatory authority determines to contain information addressing each application requirement of the regulatory program and to contain all information necessary to initiate processing and public review." Determination that the application is complete triggers an announcement of the application in a local newspaper and the public comment period.

The complexity of most permit applications requires that your review be carefully organized. First, satisfy yourself that the application is truly complete. Use the checklist in Appendix B to guide you in this process. The checklist contains a comprehensive listing of all permit requirements, together with citations to the applicable federal law and rules and a diagram describing the application process. Be sure to review those provisions of the law that are pertinent to your review. Don't worry too much about the content of the application at this stage, unless it seems to be so uninformative about the operator's plans that it is impossible to write meaningful comments. If you believe that the application is not sufficiently complete to allow the public comment period to begin, notify the regulatory authority immediately. Request that the agency ask the operator to supply the additional information that you think is needed and to extend the comment period until 30 days after the public has been notified that the information has been received. Be aware, however, that some citizens have tried this only to be told an application is administratively complete, even when it lacks complete hydrologic or landowner leasing information. If this happens to you, be persistent: try asking a different official within the agency, tell other concerned citizens to make the same request for information from the agency, and consider filing a complaint asking the

123 30 C.F.R. § 701.5 (2008); 30 C.F.R. § 773.6(a) (2008).
125 30 C.F.R. § 773.6(a), (b) (2008).
OSM to review the implementation of the state program. The process for filing such a complaint is described in Chapter 4 and Appendix E.

In most states, an agency decision that an application is not administratively complete will result in a letter or notice to the applicant describing the deficiencies. The agency also must make these letters available to the public. Be sure to request copies of these letters as they may prove very helpful identifying potential problems with a proposed mining operation.

Once the application is found to be administratively complete, the public comment period begins. At the same time, the agency will begin its technical review of the application. If you intend to file comments, be realistic about what you can expect to accomplish. Outline those issues that concern you and the reasons for your concern. Find out what the federal law and state program require with respect to those issues. (The permit checklist in Appendix E should help identify the relevant federal standards.) You may be able to find other interested citizens willing to help you by looking at the land ownership map in the application, which should identify surrounding landowners. In many parts of the country, citizen groups have formed to help people with mine-related problems. Call one of the groups in your area and find out whether they can help you. (Appendix E provides a list of organizations that help citizens with mining problems.)

If you have questions that have not been fully answered during your review of the application and your discussion of the application with agency personnel, be sure to request an informal conference on the application. (See Chapter 4: "Citizen Rights in Permit Proceedings.")

While this handbook cannot explain all of the myriad problems and issues you may encounter when reviewing a permit application, the following sections provide an overview of the more common problems and some of the particular problems facing the three major coal regions of the United States. A separate section discusses typical problems at underground mines.

Common Problems: Blasting

Most mining operations use blasting to break up the overburden, coal seam, or both. Many mines in the Midwest and West lie far enough away from populated areas so that blasting has little effect on homes and

\[126\) 30 C.F.R. § 773.6(b) (2008).

\[127\) 30 C.F.R. § 773.6(c) (2008) allows for informal conferences. Be sure to request a conference within 30 days after the last newspaper advertisement announcing the permit application.
other structures such as concrete ditches or pipelines. But in the East, and in some areas of the Midwest and West, blasting can cause property damage and personal injury.

All mines must contain a blasting plan that is designed to protect the public from damage. Blasting plans tend to be highly technical in nature and difficult for untrained people to understand. Nonetheless, you should attempt to determine the extent of blasting, the proximity of blasting to any homes, buildings, or other structures, and the times during the day when blasting will be allowed, usually sunrise to sunset. Before any blasting can occur, the operator must mail a pre-blasting notice, along with a copy of the planned blasting schedule, to the owners of all structures within one-half mile of the permit area (not the area where blasting will take place or where the mine pit is located but the outer boundaries of the entire permit area as set out in the application). The pre-blasting notice advises all such property owners of their right to a pre-blast survey. The purpose of the survey is to determine the condition of your property before blasting so you can more easily identify damage caused by blasting. Citizens reviewing a permit application should be sure that it lists the names of people who will be notified and that it includes all affected people and structures. If you own a structure within one-half mile of the permit area, you should receive a pre-blasting notice. Take advantage of your right to a pre-blast survey when you receive your pre-blasting notice. (See box.) If you fail to do so, you may have a very difficult time proving that any damage to your structure was caused by blasting.

Citizens have found that some mining operators will leave homes off of their maps, underestimate the distance between company structures and homes, or fail to identify the half-mile area affected by blasting until right before the permit is approved. It is important to compare the maps in the application with what you see on the ground. If you suspect that a home is within a half-mile of proposed blasting, make sure it is on the map, and make sure that that home owner knows that his or her home might be affected by blasting.

HOW TO REQUEST A PRE-BLAST SURVEY AND WHAT TO EXPECT

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129 30 C.F.R. § 816.64(a)(2) (2008).
132 30 C.F.R. § 816.62(e) (2008). As long as you request a pre-blasting survey at least 10 days before the planned start of blasting, the operator must complete your survey before blasting begins.
Send a written request for a pre-blast survey to both the coal company and the state or federal regulatory agency as soon as you receive notice of your right to a pre-blast survey. Federal law requires operators to notify all residents within a half-mile of the permit boundary of the right to request a pre-blast survey thirty days before blasting begins. If you do not receive notice, but you believe you should be afforded a pre-blast survey, ask for one. Even if your request is not granted, the coal company will know that you will be monitoring their blasting operations to ensure that they are conducted in accordance with the law. You may be able to get your insurance company to do the survey instead.

In response to your request, the company will send a surveyor to your home to review your property. The survey is paid for by the coal company, but the person conducting the survey must comply with state requirements for blasters. You should plan to accompany the surveyor during his inspection so that you can verify the accuracy of the information in the report. Ask questions about anything you don't understand. Be sure that the surveyor looks at the foundation of your house, and the condition of your doors and windows. He should record the exact length and width of any cracks as well as the absence of cracks in the foundation and around the windows and doors. He should check to see whether the doors and windows open and close freely. If your water supply comes from a well, the water quality and yield must be checked and recorded.

After the survey is completed, the company must prepare a written report and send copies of that report to the regulatory agency and to you. The report must describe the condition of your property and make recommendations to prevent damage from blasting. Review the report carefully and inform the agency in writing of any errors or omissions.

The operator might strongly encourage you to sign a non-disclosure agreement.

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which prohibits you from disclosing to others information about damage to your house, in
exchange for a cash payment up front. Although you may feel intimidated, the operator
cannot make you sign a non-disclosure agreement. Ask the state agency to cite the
operator if he refuses to pay you for actual damages inflicted to your property.

You can further protect yourself by keeping your own records. Take pictures
of your home, the foundation, doors and windows before blasting begins. (A
good time to take the pictures is during the surveyor's visit to your home. Include
some pictures with the surveyor in them.) Be sure to record on the back of the pictures
the date they were taken, the name of the person who took the pictures, and the type
of camera and lens that was used. (You can also write all of the pertinent information
down on a piece of cardboard and take a picture of it; that way you'll have all of the
information you need with your photos.) If your camera has a date and time
stamp feature, use it.

Common Problems: Water Quantity
and Quality Degradation

Mining inevitably affects surface and groundwater resources. If you obtain water from a well near a
proposed mining operation or if you are otherwise concerned about the effects of mining on surface and
groundwater systems near the mine site, you should become familiar with SMCRA's standards for water
quantity and quality. At the permitting stage, the most important step is the preparation of a document by
the operator to assess the probable hydrologic consequences (PHC) of mining.\textsuperscript{138} Surface mine applicants
normally hire a consultant to prepare this information for them, but small operators (less than 300,000
tons/year) may arrange to have it prepared at the regulatory authority's expense.\textsuperscript{139} The regulatory
authority uses the PHC determination to prepare an assessment of the probable cumulative hydrologic
impacts (CHIA) of all anticipated mining in the area.\textsuperscript{140} The regulatory authority is supposed to assess
the impacts on the entire basin or watershed in which the mine is located, but it often fails to go

beyond an assessment of the individual permit application site. For example, states may fail to consider the cumulative effects of nearby mine sites that have not yet received permits, even though the law requires that they do so.

A complete PHC determination and CHIA provide substantial information about the effects of mining on water resources. Because of the substantial federal coal reserves in the western United States, the federal government has prepared CHIAs for many of the major coal basins in that region. Check to see whether a CHIA has been prepared for your area.¹⁴¹ If you can afford it, hire a hydrologist to evaluate the completeness of the CHIA.

In addition to these requirements, operators must include in their reclamation plans "a detailed description of the measures to be taken...to assure the protection of" the quality and quantity of surface and groundwater systems both on-site and off-site from adverse effects of the mining and reclamation process, and to preserve the rights of present users to that water.¹⁴² Where they cannot assume that the quantity of water will be protected, surface mine operators must provide an alternative water source.¹⁴³ Since at least 1992, underground mine operators have also been required to replace damaged drinking, domestic, or residential water supplies,¹⁴⁴ unless the surface owner has signed a deed that waives the operator's liability for damages caused by subsidence.¹⁴⁵

SMCRA requires the mine operator to monitor groundwater levels, infiltration rates, subsurface flow, storage characteristics and the quality of the groundwater both before and during mining.¹⁴⁶ Operators may be required both to drill wells of their own and to sample nearby wells that may be affected.¹⁴⁷ It is to your advantage to allow the mine operator to sample your water supply before mining begins so that you can later determine scientifically whether the water has been affected. If the operator refuses to check


¹⁴⁴ 30 C.F.R. § 817.41(j) (2008); see also 30 C.F.R. § 784.14(g) (2008).
¹⁴⁵ The Energy Policy Act of 1992, 30 USCA § 1309a (a)(2) (2007), provides that any operator permitted after 1992: “Promptly replace any drinking, domestic, or residential water supply from a well or spring in existence prior to the application for a surface coal mining and reclamation permit, which has been affected by contamination, diminution, or interruption resulting from underground coal mining operations.” But see also National Mining Association v. Babbitt, 172 F.3d 906, 916 (C.A.D.C. 1999), holding that waivers of liability for damage caused by subsidence made both before and after 1992 are not superseded or invalidated by the language at 30 USCA § 1309a(a)(2).
¹⁴⁶ 30 C.F.R. § 816.41(c) (2008).
your well and the regulatory authority will not require it, try to get your water tested privately.

When a mining company representative comes to your home to test your water, you should get a written, signed agreement from him to supply you with the results of the test. At a minimum, the operator should test the sample for the following characteristics:

- static water level in the spring or well at the time of sampling;
- pH;
- levels of iron and manganese (dissolved and total);
- presence and level of sulfates;
- specific conductance;
- hardness;
- temperature; and
- yield of a well or flow of a spring (in gallons per minute).

If you suspect that mining may cause other forms of contamination, ask that those contaminants be tested for too. The Environmental Protection Agency (EPA) maintains detailed information about groundwater contamination, including information about approximately 90 contaminants for which the EPA has set drinking water standards at [www.epa.gov/safewater/hfacts.html](http://www.epa.gov/safewater/hfacts.html). The water sample should be taken from your drinking water supply before it is treated or purified. The operator should also note the type of well (dug or drilled); the year it was drilled or dug; casing; land surface elevation of well or spring; total depth of well; diameter of well; type of pump; pump setting; and type of water treatment (softening, chlorination, etc.), if any. If you are aware of other contaminants that have been found in local water supplies, be sure the sample is tested for those too.

In addition to the sample taken by the operator, you should obtain your own independent sample if possible. Test the water in your well or at its source, before it has been treated or purified for drinking. Take the sample in a clean, wide-mouthed jar, totally full. Totally immerse the jar with the opening at an angle, being careful not to skim the surface water or disturb the bottom. Cap it tightly, date it, and have it analyzed as soon as possible. Be sure to place it in the refrigerator immediately, to maintain the quality of the sample. Usually, the state health department, the state geological survey, or a local university will analyze a water sample for a small fee or without charge.

If the mine operator does not sample and measure your water supply, or if the analysis of your sample differs greatly from that of the mine operator, you should notify your state agency, preferably in writing, and request that the difference be resolved before the application is approved.
Finally, bear in mind that the operator must "restore the recharge capacity of the mined area to approximate pre-mining conditions." This means that the operator must insure that the natural processes which replenish groundwater supplies are restored. Of course, if the operator has breached a groundwater aquifer it is unlikely that the aquifer itself will be fully restored. More likely, the recharge water will replenish a deeper aquifer that may become an important source of groundwater in the future. Keep in mind that the operator is required to provide an alternative source of water for you if your water supply is adversely affected by mining.  

THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) is the “basic national charter for protection of the environment.” NEPA requires federal agencies proposing “major federal actions” that might significantly affect the “quality of the human environment” to prepare an environmental impact statement (EIS). The “heart” of an EIS is the alternatives analysis. It is supposed “to present the environmental impacts of the proposal and the alternatives in comparative form thus sharply defining the issues and providing a clear basis for choice among options....”

Where the impacts of a proposed action are less significant, the agency may prepare an Environmental Assessment (EA). The purpose of the EA is to determine whether an EIS is required, but as a practical matter the EA serves as a kind of mini-EIS. NEPA also requires an analysis of alternatives whenever there are

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152 42 U.S.C. § 4332(C) (2006). Regarding NEPA, Congress “declare[d] that it is the continuing policy of the Federal Government…to use all practicable means and measures…to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.” 42 U.S.C. § 4331(a) (2006).
“unresolved conflicts concerning alternative uses of available resources,” even where an EIS is not required.

Because NEPA only applies to the actions of federal agencies, citizens who want a NEPA analysis must find a “federal hook” to trigger the statute. If OSM is the permitting agency, or if some other federal permit, such as a § 402 or § 404 permit under the Clean Water Act, is needed, then the permitting agency must comply with NEPA. Even if you can’t find a federal hook, your state may have a “little NEPA” that parallels the federal NEPA. If so, your state mining agency may be required by state law to publish a document assessing the environmental impacts of each permit it approves.

Where NEPA applies, it requires the action agency to provide the public with detailed information about the potential environmental consequences of the proposed action and the reasonable alternatives to the proposed action. It also affords broad rights for the public to participate in the decision-making process. In particular, the agency must generally prepare a draft EIS or EA for public review and comment. If you are concerned about the impacts from a proposed mining operation and a NEPA proceed is being used to assess the impacts of that operation, be sure to become involved by meeting with agency officials, attending public hearings and offering detailed comments. This is one of the best opportunities you will have to positively influence the agency decision.

Common Problems: Existing Violations

156 A Clean Water Act Section 404 permit is one example that has been raised by environmental groups, with inconclusive results. In Kentuckians for the Commonwealth, Inc. (KFTC) v. Rivenburgh, 317 F.3d 425, 430 (4th Cir. 2003), the court did not reach the issue of whether issuance of a Nationwide Permit 21 required NEPA compliance, leaving the question open (see fn. 27). Issuance of an individual Section 404 permit, however, must comply with NEPA. See 40 C.F.R. 230.2 (2008).
As previously noted, no coal operator may be issued a permit if that operator owns or controls any coal mine that is currently in violation of the law.\textsuperscript{159} This restriction has been construed broadly, so that a company with interests in several coal companies must demonstrate full compliance at each mine in which it has an interest before it can get a permit. Some companies with outstanding violations may try to avoid this restriction by changing their corporate name or the principals involved. But the Office of Surface Mining maintains a computer data base that should make the process of detecting existing violators much easier. If you provide OSM with the name of the company, its major stockholders and corporate directors (most of which is available through your local Secretary of State’s Office), then the agency should be able to check its database and let you know if the company is an existing violator of the law. You can also use this system – called the “Applicant/Violator System (AVS) – yourself.\textsuperscript{160}

\textbf{Common Problems: Wildlife Damage}

Mining operations often present special problems for wildlife. The permit application should describe clearly any critical wildlife habitat (including winter range, calving grounds, and bird nesting sites) that may be disrupted by mining, and should explain how adverse impacts will be mitigated.\textsuperscript{161} (SMCRA requires operators to “use the best technology currently available to minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.”\textsuperscript{162}) Note in particular any indication that the mining area may adversely impact an endangered or threatened species of wildlife listed under the federal Endangered Species Act (see box below). In such a case, mining may actually be prohibited.

\textsuperscript{159} 30 U.S.C. § 1260(c) (2007).
\textsuperscript{160} The AVS is available online at \url{https://avss.osmre.gov}. Click Access AVS. You can then search for operators by company name or permit number. You can also investigate the relationships between an operator and other possible violators, such as parent companies or subsidiary companies, and read comments about an operator and its permits. Read the AVS report for the operator you are investigating by clicking on the “evaluate” tab. Report any suspected violations to OSM and your state permitting agency. But beware: some states consider being in the process of complying as “compliance,” so violations may not always appear in the system. Also, state regulatory agencies are no longer issuing Notices of Violation as they did early in the life of SMCRA, and only violations which have been issued will appear in the system. Some states maintain records of past violations, so check with your state regulatory agency.
\textsuperscript{161} 30 C.F.R. § 780.16(a),(b) (2008).
THE ENDANGERED SPECIES ACT

The Endangered Species Act (ESA)\(^{163}\) only applies to species\(^{164}\) that are "listed" under the Act by the Secretary of the Interior as threatened or endangered.\(^{165}\) It operates by controlling the conduct of both federal agencies and other parties whose conduct might impact listed species. Section 7 of the Act imposes a mandatory duty on federal agencies to "conserve" listed species.\(^{166}\) Conservation is defined to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the Act] are no longer necessary."\(^{167}\) The Secretary of the Interior must also designate critical habitat for each listed species.\(^{168}\) Critical habitat does not necessarily include the entire range of a listed species, and these species are usually found outside of the designated critical habitat.\(^{169}\) Decisions to list species must be made based on the best available scientific data.\(^{170}\) Designation of critical habitat may also take into account the economic impact of designation.\(^{171}\)

In addition, all federal agencies whose action might affect a listed species or its critical habitat must consult with the U.S. Fish and Wildlife Service (FWS)\(^{172}\) before taking

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\(^{164}\) "Species" is defined broadly by the ESA to include "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature." 16 U.S.C. § 1532(16) (2007).
\(^{165}\) An "endangered species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range...." 16 U.S.C. § 1532(6). A "threatened species" is defined as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20) (2007). The listing process can be initiated by FWS, or citizens can petition to have a species listed. 16 U.S.C. § 1533(b)(3) (2007). The Secretary must list a species as endangered or threatened based on specific factors: present or threatened habitat destruction; overuse for commercial, recreational, scientific, or educational purposes; disease or predation; inadequacy of existing regulatory mechanisms to protect the species; or other natural or manmade factors affecting the continued existence of the species. 16 U.S.C. § 1533(a)(1)(A)-(E) (2007); 50 C.F.R. § 424.11 (2008).
\(^{167}\) 16 U.S.C. § 1532(3) (2007). Conservation methods include, but are not limited to, "all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking." 16 U.S.C. § 1532(3)(A) (2007).
\(^{171}\) 16 U.S.C. § 1533(b)(2) (2007). For example, the Secretary might decline to designate critical habitat if it determines that economic development in a particular area is more important than preserving the habitat of listed species.
\(^{172}\) FWS is responsible for administering the ESA as it applies to land and freshwater species. The National Marine Fisheries Service (NMFS) is responsible for marine species. 50 C.F.R. § 402.01(b) (2008).
the action. This action might include, for example, the issuance of a federal mining permit, or a federal permit under § 402 or § 404 of the Clean Water Act. Consultation can be formal or informal. Formal consultation is needed if adverse impacts of the action cannot be readily avoided. During formal consultation, the FWS prepares a “biological opinion” to determine whether the proposed action will jeopardize the listed species or its critical habitat. If so, the FWS identifies “reasonable and prudent alternatives” that would avoid the harm. Unfortunately, federal agencies are not bound to follow FWS recommendations.

Section 9 of the ESA also prohibits any person—even private actors—from “taking” listed species. “Take” is broadly defined to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or... attempt to engage in any such conduct.” Therefore, if a mining operation kills listed species or harms them in a substantial way, the operator may be subject to an injunction and/or civil or criminal penalties. In practice, however, operators can easily obtain “incidental take” permits allowing for the killing or harming of endangered species, if the killing or harming is “incidental to, and not the purpose of” otherwise lawful mining activities. 16 U.S.C § 1539(a)(1)(B). Also, operators or landowners sometimes move or kill endangered species before starting the permit application process, in order to avoid having to comply with the ESA. This is illegal and if you suspect this is happening, contact the FWS or enlist the help of your state wildlife agency.

Penalties for ESA violations are severe. Violators are subject to civil fines of up to $25,000 per violation and criminal fines of up to $50,000 per violation, as well as up to one year in prison. The ESA also allows citizens to file lawsuits to prevent people or agencies from violating the Act. FWS maintains a list of threatened and endangered species.
species by location on its website. If you believe that listed species might be impacted by mining in your area, contact the FWS.

Appalachian Mining

Much of the mining in Appalachia occurs on steep slopes, and these rolling hillsides contribute to many of the problems associated with mining. Permit application review in this region should focus on sediment control, valley and head-of-hollow fills, and acid or alkaline mine drainage.

Sediment Control

Heavy rainfall and steep slopes combine to create a substantial risk of landslides, erosion, and siltation of streams, lakes, and reservoirs. Citizens reviewing a permit application should be sure that measures used to stabilize topsoil and spoil materials are adequate and that the sediment control structures are designed with a sufficient capacity to handle a heavy rainfall. (Most structures must be designed to handle a 10-year/24-hour precipitation event — a 24-hour period of such severe rainfall that it occurs only once in ten years on average.) Sediment control structures often take the form of sedimentation ponds. Sedimentation ponds are designed to hold stream water in one place long enough for suspended solids such as soil particles to drop out of the water and settle on the bottom of the pond. With few exceptions, operators must place sedimentation ponds in such a way as to channel and capture the runoff from the entire area disturbed by the mining operation. Sedimentation ponds must be built before mining begins.

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184 FWS can be reached at 1-800-344-WILD (1-800-344-9453), or online at http://www.fws.gov/.
and must be certified after construction by a qualified professional engineer.\textsuperscript{187} The ponds must be located as close as possible to the mined area, they must be large enough to provide adequate sediment storage volume,\textsuperscript{188} and they must include adequate spillways.\textsuperscript{189} Operators may choose to build a single sedimentation pond or a series of two or more.\textsuperscript{190} Ponds may not be required, however, if the disturbed drainage area is small and the structures are not necessary to meet state and federal water quality standards.\textsuperscript{191} It may be difficult to determine the adequacy of proposed sediment control ponds by looking at maps. If so, try to visit the site and identify the location for the proposed ponds on the ground.

Sedimentation ponds are intended to prevent, “to the extent possible,” contributions of “suspended solids sediment to streamflow or runoff outside the permit area.” If the receiving stream is a cold water fishery, state water quality standards may also impose temperature requirements. (There are no federal temperature requirements, but federal law requires that state law be upheld.)

\section*{Valley and Head of Hollow Fills}

As described previously, breaking up and removing the consolidated overburden above the coal seam causes this material to swell by as much as 25 percent.\textsuperscript{192} The percentage increase in material is called the “swell factor.” The amount of swelling will depend on the type of material and the manner in which it is handled. Where the ratio of coal to overburden is low, the swell factor usually will generate a considerable amount of excess spoil, or spoil in excess of that needed to completely backfill the mined area. Mountaintop removal operations generate particularly large volumes of excess spoil since the mined area is not backfilled. In Appalachia, excess spoil is usually deposited at the top of V-shaped valleys with steeply sloping sides, referred to as valley or head-of-hollow fills.

SMCRA requires all excess spoil to be "transported and placed in a controlled manner... in such a way to assure mass stability and to prevent mass movement."\textsuperscript{193} The Act and regulations further require that the design be certified by "[a] qualified registered professional engineer experienced in the design of earth...

\begin{footnotes}
\item[187] 30 C.F.R. § 816.46(b)(3) (2008).
\item[188] 30 C.F.R. § 816.46(c) (2008).
\item[189] 30 C.F.R. § 816.49(a)(9) (2008); 30 C.F.R. § 816.46(c)(2) (2008).
\item[190] 30 C.F.R. § 816.46(c)(1)(i) (2008).
\item[191] 30 C.F.R. § 816.46(e) (2008).
\item[192] Bragg v. Robertson, 248 F.3d 275, 286 (4th Cir. 2001).
\end{footnotes}
and rock fills.”194 Citizens reviewing an application should make certain that these requirements are met. If the application does not indicate the engineer’s experience with fills, ask that these qualifications be provided. To ensure that the reviewer is indeed a professional engineer (“PE”), look for the PE seal on the application documents.

It will be difficult for a person without an engineering background to evaluate the sufficiency of a fill design. (Detailed requirements are set forth at 30 C.F.R. § 780.35.) If you suspect problems with the fill, you may want to hire an expert. Local colleges and universities may have experts, soils scientists, or geologists who would be willing to review this part of the application without charge or for a modest fee.

The chief concern with fills is stability, and water is the most likely element to destabilize a fill. Accordingly, you should review with care any sources of water under or near the fill area and how the operator proposes to manage that water. The operator may plan, for example, to channel water around the fill or allow it to pass through a rock drain at the bottom of the fill. Chapter 6, on monitoring a strip mine, provides additional suggestions regarding fills.

OSM’s stream buffer zone rule provides that “no land within 100 feet of a perennial or intermittent stream shall be disturbed by surface mining activities.”195 Because valley fills invariably result in burying streams, they would seem to be a direct violation of the stream buffer zone rule. The rules, however, allow an exception if the fill will not violate state and federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream.196 Under NWP 21, discussed in the box, “Section 404 of the Clean Water Act,” mining companies are generally able to obtain approval for valley fills. While Corps’ approval would seem to indicate compliance with water quality standards,197 approval does not necessarily prove compliance. Fills may still violate the federal rules if they adversely impact the stream environment. If you suspect that such impacts may result from construction of a fill, be sure that the regulatory authority makes a pre-fill assessment of the water and environmental resources of the stream or streams that will be impacted. This way you will be able to document any adverse impacts that result from the construction or maintenance of the fill.

195 30 C.F.R. § 816.57(a) (2008).
196 30 C.F.R. § 816.57(a) (2008).
Acid Mine Drainage

Federal regulations require the operator to identify all acid and toxic-forming strata from the surface to the stratum immediately below the coal seam in the permit application.\textsuperscript{198} Be sure that all strata are properly analyzed. If any strata are toxic or acid-forming, (for example, if they contain pyrite) review the overburden handling plan to be sure that these strata will not be exposed to air and water where they might contribute to acid runoff. Some states allow alkaline addition to offset acid-producing potential, regardless of whether the acid-producing potential might exceed the neutralization potential of the addition at the site. States sometimes even issue permits without the required alkaline addition, so you will need to check the permit application and follow up by checking the operator's performance.

Mine drainage can also be alkaline. Although alkaline drainage is usually not as destructive as acid mine drainage, it can contain heavy metals that degrade habitat and water supplies as well.

Midwestern Mining

Most mining in the Midwest occurs on flat or rolling terrain where area mining methods are used. The principal concern regarding Midwestern coal mining tends to focus on the post-mining agricultural productivity of the land. This section discusses special provisions designed to protect prime farmland, and the problems posed by final-cut lakes.

Prime Farmland

All permit applications are required to include the results of an inspection to determine whether any prime farmland (see box) exists within the proposed permit area.\textsuperscript{199} If prime farmland may exist, a soil survey must be conducted to identify prime farmland soils within the permit area.\textsuperscript{200} If prime farmland soils are identified, the application must contain detailed information about those soils, their pre-mining productivity and the operator's plan to reconstruct those soils after mining to achieve pre-mining crop yields.\textsuperscript{201}

\begin{itemize}
\item[198] 30 C.F.R. §780.22(b)(1) (2008).
\item[199] 30 C.F.R. § 785.17(b) (2008).
\item[200] 30 C.F.R. § 785.17(c) (2008).
\item[201] 30 C.F.R. § 785.17(c) (2008).
\end{itemize}
Prime farmland is defined by federal law and regulations as lands that have been identified by the Secretary of Agriculture as prime farmlands and that have been "historically used as croplands." \(^{202}\)

Lands are deemed to have been historically used for cropland if:

- they have been used for cropland for five out of the 10 years immediately preceding their purchase for mining purposes;
- the regulatory agency determines that such lands are clearly croplands based on additional cropland history, or;
- those lands would likely have been used for cropland in the five out of 10 year period, except for the fact that the land was owned or controlled by a company for reasons unrelated to the land's agricultural productivity. (Thus, for example, a mining company could not claim lack of historical agricultural use if such a company had held the land during the period in question.)

Because of the stringent requirements that apply to mining activities on prime farmland, it is extremely important that the operator correctly identifies all prime farmlands at the outset. Affidavits submitted by the coal company claiming that the land has not historically been used as cropland should particularly arouse the suspicion of citizens reviewing mining applications. Check with local residents who are familiar with the land to verify these claims. A local Soil Conservation Service office also may provide assistance in determining the extent of prime farmland in the permit area.

If the proposed mining operation impacts prime farmland, be sure that the reclamation plan is adequate.\(^{203}\) Check to see if the prime farmland restoration plan (or general reclamation plan) proposes the use of alternative soil materials.\(^{204}\) While the operator may find it cheaper to mix soils, this procedure

\(^{202}\) 30 C.F.R. § 701.5.

\(^{203}\) 30 C.F.R. § 785.17(e)(4) (2008) states that a permit to mine on prime farmland must contain a restoration/reclamation plan that complies with the performance requirements of 30 C.F.R. § 823 (2008).

\(^{204}\) See 30 C.F.R. § 823.12(c)(2) (2008).
may also result in mixing good soils with rocky overburden. Before any alternative is approved, detailed data must be provided on the physical and chemical properties of the natural A and B soil horizons (the two uppermost soil horizons) and on the proposed reclamation mixture.\textsuperscript{205} Replacement of the original soil horizons in the proper order is always preferred unless data clearly shows that a proposed alternative soil mixture is at least as good as the original soil.\textsuperscript{206}

Citizens also should check the equipment proposed for restoring the soil horizons. Any proposal to use scrapers should arouse suspicion, as this equipment may cause excessive compaction.\textsuperscript{207} End dump trucks are generally better for soil placement. Also note how the operator proposes to measure reclamation success. The deepest-rooting row crop commonly grown in the area should be used as the reference crop to measure reclamation success.\textsuperscript{208} (In the Midwest, corn is usually the deepest.) If the operator is permitted to measure reclamation success through shallow hay crops, it may be impossible to accurately determine whether or not the land has been restored to full productivity.

Also, be sure to check the operator's claims regarding the pre-mining productivity of the land against local estimates on the productivity of comparable land.\textsuperscript{209} Finally, review the soil reconstruction plan and any other available data to determine whether the operator has demonstrated that he can restore 100 percent of the pre-mining productivity of the land.\textsuperscript{210} Additional information about reviewing permit applications on prime farmlands may be found in \textit{A Citizen's Guide to Farmland Reclamation}. This informative guide is available from the Illinois Department of Natural Resources here: \url{http://dnr.state.il.us/mines/lrd/farmland.pdf}.

\textbf{Last Cut Lakes}

As described in \textbf{Chapter Two}, area mine operators prefer to fill the last cut with water rather than trucking the spoil from the box-cut to the last cut. If you oppose this practice, several avenues for attacking it are available at the permit review stage. First, as a result of a successful lawsuit filed by citizen groups from around the country, last cut lakes are not permitted on prime farmland.\textsuperscript{211} This fact underscores the importance

\textsuperscript{205} 30 C.F.R. § 785.17(c) (2008).
\textsuperscript{206} See 30 C.F.R. § 823.12(c)(2) (2008).
\textsuperscript{207} See 30 C.F.R. § 823.14(c) (2008).
\textsuperscript{208} 30 C.F.R. § 823.15(b)(6) (2008).
\textsuperscript{210} 30 C.F.R. § 785.17(e)(3) (2008).
\textsuperscript{211} National Wildlife Federation v. Hodel, 839 F.2d 694, 719-22 (D.C. Cir. 1988); NWF v. Lujan, 928 F.2d 453 (D.C. Cir. 1991); \textit{and overruled in part by} NRDC v. EPA, 437 F.Supp.2d 1137, 1147 (C.D. Cal. 2006). While part
of correctly identifying prime farmland at the outset.

Last cut lakes may pose several particular problems. The spoil from the box cut may be difficult to blend with the surrounding terrain to achieve the approximate original contour, as required by SMCRA.\textsuperscript{212} In that case, the operator might just as well truck the spoil to the final cut. Also, operators may try to place the box-cut spoil on prime farmlands. This should not be allowed because long-term storage of the spoil will damage the productivity of the land.

The last cut lake also may be deemed a lesser use than the pre-mining use of the land, or it may conflict with local land-use plans.\textsuperscript{213} As explained earlier, SMCRA requires that all mined land be restored to pre-mining uses, or to higher and better uses that are consistent with local land-use plans. This problem may be particularly compelling where a long, narrow last cut lake breaks up agricultural land in a way that interferes with farming activities. Last cut lakes also may pose public health or safety problems if, for example, the slopes leading down to the water are too steep. This, too, is prohibited by SMCRA.\textsuperscript{214} Finally, the stratum below the coal seam often contains acid-producing materials that may substantially reduce any potential recreational value for the lake.

\section*{Western Mining}

Most Western mines are considerably larger than Eastern mines, and the problems associated with these mines are generally related to the arid climate that prevails throughout much of the West. This section discusses three problems: dewatering, threats to alluvial valley floors, and revegetation.

\section*{Mine Dewatering}

The large pits excavated for Western mines frequently breach groundwater aquifers. This creates problems not only for the mining operations but for residents who live nearby. The mine pit may drain the ground or surface water resources used by neighboring wells. Further, the water that gathers in the pit may contaminate other water sources when it is pumped out of the pit and discharged into another water of \textit{Hodel} was reversed, the last-cut lakes rule still stands. See 30 C.F.R. § 785.17(e)(5).


Citizens reviewing permit applications in the West should look carefully at the operator's plans for collecting and managing mine water. Is the mine expected to draw-down ground or surface water in the area? Are the draw-down estimates realistic? What has been the experience at other neighboring mines? If you can afford it, hire a hydrogeologist (an expert on groundwater) to review this part of the permit application. Look with particular care at the water monitoring program in the permit application. Has the operator conducted sufficient pre-mining monitoring to determine the baseline (pre-mining) hydrology of the area?\textsuperscript{215} Does the operator propose sufficient monitoring during and after mining and reclamation to assure a continuing assessment of the mine's impact on water?\textsuperscript{216} Has the operator identified alternative sources of water in the event that he is required to replace lost water?\textsuperscript{217} Is the proposed replacement source of similar quality?\textsuperscript{218} Can it be extracted and used by the end user at similar cost?\textsuperscript{219} You should demand satisfactory answers to all of these questions before the mining permit is approved.

\section*{Alluvial Valley Floors}

When it passed SMCRA in 1977, Congress found that alluvial valley floors (AVFs) were "of special importance in the arid and semi-arid coal mining areas" because they form "the backbone of the agricultural and ranching economy in these areas."\textsuperscript{220} (The term "alluvial" describes fertile deposits of sediment laid down by the action of wind or water in ancient geological ages.) Quoting from a National Academy of Sciences study, Congress noted that "unconsolidated alluvial deposits are highly susceptible to erosion" and that "removal of the alluvium from the thalweg [the line along the very bottom of a stream that marks its direction] of the valley not only lowers the water table but also destroys the protective vegetative cover by draining soil moisture."\textsuperscript{221} In considering this problem, Congress decided to protect the ranchers over the mine operators. SMCRA requires the operator to "preserve throughout the mining and reclamation process the essential hydrologic

\textsuperscript{215} See 30 C.F.R. § 780.21(b) (2008).
\textsuperscript{216} See 30 C.F.R. § 780.21 (i), (j) (2008). Includes both ground and surface water impacts.
\textsuperscript{217} See 30 C.F.R. § 780.21(e) (2008).
\textsuperscript{218} See 30 C.F.R. § 780.21(e) (2008).
\textsuperscript{219} 30 CFR 780.21(f) (2008).
\textsuperscript{221} Id. at 118.
functions of alluvial valley floors in the arid and semi-arid areas of the country."\textsuperscript{222}

Any permit or adjacent area west of the 100th meridian [a line coincident with the eastern border of the Texas panhandle] that encompasses a valley holding a stream may include an AVF subject to the requirements of the law.\textsuperscript{223} Thus, the most critical decision at the permitting stage is whether an AVF exists. By law, an AVF exists if – (1) unconsolidated stream-laid deposits are present, and (2) sufficient water exists to support agricultural activities.\textsuperscript{224} Even where an AVF exists, however, operators may be able to avoid the stringent AVF protection standards if they can show that the only land to be disrupted is undeveloped rangeland which is not significant to farming, or of such small acreage that it will have a negligible impact on a particular farm's agricultural production.\textsuperscript{225}

If an AVF exists and is not subject to the above exceptions, or is not a mining operation that commenced before the Act was passed in 1977, then the permit applicant must demonstrate that the mining activities will not "interrupt, discontinue or preclude farming on the AVF" or "materially damage the quantity or quality of water in surface or underground water systems that supply these valley floors."\textsuperscript{226}

A proposed mining operation near an AVF will have great difficulty meeting the above requirement. Concerned citizens should employ the services of a hydrologist (surface water expert) or hydrogeologist (groundwater expert), if possible. Don't forget, however, that the regulatory authority will be making the final AVF determination and will have its own water experts. If you suspect an AVF may exist, gather information about the farming potential in the area's surrounding streams. Consult with the appropriate agency people about this information and learn what you can from them about the prospects for designating one or more AVFs on or near the land proposed for mining.

Revegetation

The arid conditions that prevail throughout the West may make revegetation difficult to achieve. Short-term success generally can be accomplished without much difficulty using non-native species, fertilizers, and intensive management. Over the long haul, however, the operator's ability to restore native vegetation that is capable of self-regeneration – without fertilizers and intensive management – is much

harder to demonstrate. Although native species are preferred, SMCRA allows the use of non-native species where "desirable and necessary to achieve the approved post-mining land use." In the West, the post-mining land use will almost invariably be rangeland. (Indeed, you should be suspicious of any plans to restore the land to anything but rangeland.) Thus, the species used to revegetate must be at least as suitable as the native species for grazing purposes. Any good reclamation plan will clearly distinguish between short-term revegetation necessary for providing a protective cover, and long-term revegetation which focuses on the post-mining land use and provides a diverse cover of primarily native species. If the reclamation plan you are reviewing does not make such a distinction, be sure to inquire further about the operator's specific revegetation plans.

Underground Mining

Underground mining operations must meet most requirements that apply to surface mines. Thus, if you are dealing with a proposed underground coal mine you should familiarize yourself with the surface mining requirements to be sure that these are met. Keep in mind, however, that SMCRA authorizes the Secretary of the Interior to establish different standards for underground mines "as are necessary to accommodate the distinct differences between surface and underground mining."

Most of the unique problems that result from underground mining relate to subsidence. Accordingly, a person reviewing an underground mine permit should look carefully at how the permittee plans to control subsidence damage. Permit applications for underground mines must include a pre-subsidence survey showing whether any structures or renewable resource lands exist within the proposed permit and adjacent area. (Renewable resource lands are defined to include aquifers, recharge areas, agricultural, and

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228 See 30 U.S.C. § 1265(b)(2) (2007). “Restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining.”
232 30 C.F.R. § 784.20(a) (2008). “Angle of draw” term in 30 C.F.R. §784.20, which is used to define the area for which structures must be included for both the pre-subsidence survey and damage compensation, was struck down as arbitrary and capricious by the D.C. Circuit Court in National Mining Association v. Babbit, 172 F.3d 906 (C.A.D.C. 1999). As of 2009, the OSM had still not promulgated a new rule to define the area outside the permit area to be included within the pre subsidence survey. See 30 C.F.R. §784.20 (a)(3) (2008).
silvicultural areas and grazing lands.\textsuperscript{233}) If such structures or lands do exist, the applicant must determine whether subsidence might cause "material damage or diminution of reasonably foreseeable uses" to these structures or lands.\textsuperscript{234}

Request that the mining operator include your property in the pre-subsidence survey. If the mining company refuses to conduct a pre-subsidence survey of your property, hire a private contractor to document the condition of all structures on your property, or document them yourself. Take photographs of all joints between walls and floors, all foundation slabs and walls, all door frames, and anything else that you suspect might be damaged by subsidence underneath the structure. Record the time and date you took the photographs. If you have a digital camera, upload the photographs to your computer immediately and email them to someone who is willing to hold them as a back-up.\textsuperscript{235}

If the survey shows that subsidence may harm structures, water supplies, or renewable resource lands within the permit or adjacent area, the applicant must prepare a detailed subsidence control plan.\textsuperscript{236}

The subsidence control plan must include:

1. A description of the mining methods in relation to the physical conditions of the mine that might lead to subsidence;
2. A map of the underground workings and a description of the locations where planned subsidence will occur;
3. A description of how the operator will monitor, prevent, and control subsidence in areas not planned to subside;
4. A description of the anticipated effects of subsidence and the methods that will be used to minimize those effects on residential structures and protected lands; and
5. A description of the methods that will be taken to replace damaged domestic water supplies.

Be sure to review this plan. This will enable you to evaluate any claim by the applicant, either that the area does not contain structures or renewable resource lands, or that subsidence will not harm these structures or lands. Be sure that any subsidence control plan accurately identifies the structures or lands that may be affected and provides for adequate monitoring of the effects of subsidence before, during, and after mining.

Regulations also require operators to identify on a map the location and type of drinking,

\textsuperscript{233} 30 C.F.R. § 701.5 (2008).
\textsuperscript{234} 30 C.F.R. § 784.20(b) (2007).
\textsuperscript{235} In addition to serving as a backup, the date stamp on the e-mail can provide evidence of when the photographs were taken. Indicate the date the photos were taken in the body of your e-mail message to provide further evidence.
\textsuperscript{236} 30 C.F.R. § 784.20(b) (2008).
domestic, and residential water supplies that could be contaminated, diminished, or interrupted by subsidence. Make sure all such water sources are accurately represented on the map, and make sure the operator determines whether they will be impacted by subsidence. Mining companies often mis-identify springs, streams, wells, and ponds.

Longwall mining is the most common method of underground mining in use today. Because SMCRA allows longwall mine operators to engage in “planned subsidence,” you should pay close attention to any mention of planned subsidence in the permit application. The reclamation and restoration requirements for damages caused by planned subsidence are different from those caused by un-planned subsidence. See the section on “Controlling the Impacts of Subsidence” in Chapter 6 for an in-depth discussion of these requirements.

Additional Permitting Requirements under the Clean Water Act

In addition to the permitting requirements imposed by SMCRA, operators are often required to apply for separate permits under the Clean Water Act (CWA) if their actions will disturb or pollute rivers or streams. The requirements of the CWA are especially relevant in the wet forests of the Eastern United States. The remaining subsections of this chapter describe some of the provisions of the Act and how they apply to coal mine operators.

National Pollutant Discharge Elimination System Permits

Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System (NPDES), which is a permit program for point sources of water pollution. Section 402 makes it illegal to discharge any pollutant from a point source into waters of the United States without a permit. Each of the highlighted terms is expressly defined in the statute. For example,

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241 For the meaning of “waters of the United States,” see http://www.epa.gov/watertrain/cwa/glossary.htm. The term includes most rivers and streams.
the term “pollutant” is defined broadly to include most types of waste that a surface mine might discharge, including rock, sand, and heat.\textsuperscript{242} A “point source” encompasses “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container... from which pollutants are or may be discharged.”\textsuperscript{243} NPDES permits are typically issued by state agencies pursuant to a program approved by the U.S. Environmental Protection Agency (EPA), although the EPA issues the permit in states without an approved program.\textsuperscript{244} Courts have held that even rainwater runoff from spoil piles into a nearby stream is point source pollution, even without “direct action by the mine operators in pumping or draining water into the waterway.”\textsuperscript{245} Moreover, because SMCRA regulations require that “[a]ll surface drainage from the disturbed area shall be passed through a siltation structure before leaving the permit area”\textsuperscript{246} (subject to minor exceptions), any discharge from the mine site will necessarily come from such a structure, which will almost certainly satisfy the requirement for a point source.\textsuperscript{247} For this reason, mining plans should be examined carefully to determine whether and where discharges will occur, so that the appropriate NPDES permits can be obtained.

An NPDES permit application must be submitted at least 180 days before the date on which discharge is to begin, unless the permitting authority grants permission for a later application.\textsuperscript{248} The application must contain detailed descriptions and maps of the proposed pollutant discharges, along with other reporting requirements.\textsuperscript{249} The permitting authority then issues a draft decision to grant or deny the permit.\textsuperscript{250} After notice to the public and a 30-day comment period and hearing,\textsuperscript{251} the permitting authority makes a final decision.\textsuperscript{252} The issued permit must contain technology-based effluent limitations, meaning operators must limit pollution to levels mandated and defined in

\textsuperscript{242} 33 U.S.C. § 1362(6) (2007). “The term ‘pollutant’ means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water.”


\textsuperscript{244} 33 U.S.C. § 1342(a)(5) (2007). If your state agency has been delegated Section 402 permitting authority, it may impose more stringent water pollution regulations than EPA requires. 33 U.S.C § 1370 (2007).

\textsuperscript{245} Sierra Club v. Abston Construction Co., 620 F.2d 41, 45 (5th Cir. 1980).

\textsuperscript{246} 30 C.F.R. 816.46(b)(2) (2008).

\textsuperscript{247} In some arid regions, water collected in siltation structures is simply allowed to evaporate and does not often result in a discharge.

\textsuperscript{248} 40 C.F.R. § 122.21(c) (2008). As discussed above, states are free to implement more stringent standards than the minimum EPA regulations.

\textsuperscript{249} 40 C.F.R. § 122.21 (2008).

\textsuperscript{250} 40 C.F.R. § 124.6 (2008).


\textsuperscript{252} 40 C.F.R. § 124.15 (2008).
accordance with detailed regulations issued by the EPA for coal mining operations. 253

Permits for the Discharge of Dredged or Fill Material into Rivers and Streams

Under Section 404 of the Clean Water Act (CWA) the U.S. Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into the waters of the United States. 254 Mining operations often dump waste rock, soil, and other materials into streams or their tributaries, rather than dispose of it in a more environmentally friendly manner. To discharge fill material into waters or wetlands, mine operators need a Section 404 permit. The CWA, however, allows the Corps to define categories of activities that do not require individual permits because they only have minimal environmental impacts. Thus, the Corps has issued numerous “nationwide permits” (NWPs). NWP 21 governs the placement of valley fills derived from surface coal mining operations and is unique among NWPs in requiring written authorization from the Corps before construction can begin. 255

255 Under Section 404(e), the Corps may issue “general” permits “for any category of activities involving discharges of dredged or fill material if the Secretary determines that the activities in such category are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment.” 33 U.S.C. §1344(e) (2007). Pursuant to this authority, the Corps has issued 50 “nationwide permits” (NWPs), including NWP 21, which applies to surface coal mining operations. 72 Fed. Reg. 11092, 11184 (2007). NWPs are essentially rules that establish requirements and standards that apply “to any activity authorized by such general permit.” 33 U.S.C. §1344(e)(1) (2007). Three of the 50 NWPs, including NWP 21, require that parties seeking to invoke the permit obtain prior approval from the Corps. 72 Fed. Reg. at 11184. The purpose of the approval process is to allow the Corps to determine whether the proposed valley fills meet the requirements of 33 U.S.C. §1344(e). Unfortunately, NWP 21 offers no guidance to help the Corps make this determination. 72 Fed. Reg. at 11114. It sets no limit, for example, on the length of a stream that can be buried, nor does it limit the total acreage within a watershed that can be impacted. Id. Two legal challenges were brought in the Fourth Circuit alleging that the Corps violated NEPA as well as its own regulations by authorizing valley fills under NWP 21. Kentuckians for the Commonwealth argued that the Corps violated NEPA by failing to prepare an Environmental Impact Statement for each individual mining operation authorized under NWP 21, and that the Corps violated the CWA requirements to avoid or minimize the impacts of discharges on streams. 2001 WL 36101573 (S.D.W.Va.). These two arguments remain to be litigated, because the District Court addressed Count 1 (regarding the definition of “fill material” under CWA Section 404) without addressing the remaining counts against the Corps. Similarly, the Ohio Valley Environmental Coalition argued that when the Corps authorized a valley fill under NWP 21, it violated the nationwide permitting rules by authorizing individual valley fills without making a sound judgment about whether or not the impacts would be minimal, and it violated NEPA by issuing NWP 21 without first completing an Environmental Impact Statement (EIS). Plaintiff’s Amended Complaint for Declaratory and Injunctive Relief. 2004 WL 4001413. (S.D.W.Va.). The Fourth Circuit ruled that the NWP 21 authorization process was lawful because it met certain technical requirements, but neither the lower court nor the appeals court addressed the arguments regarding NEPA violations or the substantial environmental effects of valley fills. Citizens may
If the mining discharge is not a valley fill covered by NWP 21, an individual permit is required under Section 404. In approving an individual Section 404 permit, the Corps first determines if the application complies with the requirements of Section 404(b)(1). This section requires the mine operator to consider alternative proposals evaluating the effects of overburden disposal on different streams within the permit boundary, and to determine that the discharge does not jeopardize threatened or endangered species, violate state or federal water quality standards, or contribute to the significant degradation of waters of the United States. The Corps must also find that the project is not contrary to the public interest. The public interest standard requires the Corps to consider conservation, economics, aesthetics, wetlands, historic properties, flood hazards, floodplain values, land use, navigation, recreation, energy and mineral needs, safety, water quality, fish and wildlife values, shore erosion and accretion, water supply and conservation, food and fiber production, property ownership, general environmental concerns, and the needs and welfare of the people.

In addition to the Corps’ authority to issue Section 404 permits, the Administrator of the EPA may deny or restrict a Section 404 permit if the discharge would harm municipal water supplies, shellfish or fish habitat, wildlife, or recreation interests. Contact the office that is reviewing the Section 404 permit that you are concerned about. They may be able to assist you in critiquing the Corps’ analysis of the effects of the potential discharge.

Additional CWA requirements apply to valley fills with sedimentation ponds below. Valley fills are sometimes placed in streambeds, and the mine operator typically uses the existing stream to transport sediment and other pollutants from the toe of the fill to a sedimentation pond. The valley fill is considered a new point source for pollutants. Before utilizing a section of a mountain stream for this kind of waste transport, the operator must first obtain a § 402 NPDES permit from the EPA or state permitting agency as described above.

potentially find success in a lawsuit challenging the Corps issuance of NWP 21, because the cumulative environmental effects of valley fills are obviously more than minimal. The programmatic impact statements published for Mountain Top Mining and the Stream Buffer Zone Rule list these serious effects. See EPA Region 3, Mountaintop Mining/Valley Fills in Appalachia Final Programmatic Environmental Impact Statement EPA 9-03-R-05002, (October 2005); OSM, Excess Spoil Minimization/Stream Buffer Zones Draft Environmental Impact Statement (EIS), (April 2007). (Book 1 contains the main portion of the EIS, Book 2 contains comments)

258 33 U.S.C. § 1344(c) (2007). Also note: Notice and a public hearing are required before the EPA Administrator denies or restricts a 404 permit.
259 Sedimentation ponds are discussed under the "Sediment Control" section of this chapter.
260 Ohio Valley Environmental Coalition v. U.S. Army Corps of Engineers, 2007 WL 2200686 (S.D.W.Va.) at 11. The rule made in this case may lead to more litigation, because it reverses the Corps’ historical practice of excluding
Ambient Water Quality Standards

Section 303 of the Clean Water Act\textsuperscript{261} requires states to set ambient water quality standards for every water body in the state. All standards (or “criteria” as they are called in the rules) must have a sound scientific rationale\textsuperscript{262} and should be at least strict enough to satisfy the national goal of making all water bodies suitable for swimming and fishing.\textsuperscript{263} Water quality standards must include the designated uses for each water body as well as water quality criteria based on those uses.\textsuperscript{264} Numeric standards are required for many toxic pollutants, which are listed pursuant to Section 307 of the CWA.\textsuperscript{265} If these standards are not being met, the state must designate these water bodies as degraded.

For all degraded water bodies, the state must set an upper limit on the amount of each pollutant in the water body that is not meeting the standards. This upper limit is called a Total Maximum Daily Load (“TMDL”).\textsuperscript{266} The state must also set an upper limit on how much thermal pollution, or heat, enters the water body.\textsuperscript{267} Both the pollutant TMDL and the thermal limit must be set at levels “to assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife.”\textsuperscript{268}

Each state must ensure that “existing instream water uses and the level of water quality necessary to protect the existing uses [are] maintained and protected.”\textsuperscript{269} This means that high quality streams that support a wide range of aquatic life must be maintained at high water quality. However, there is an exception that allows the state to make a finding, after allowing for public participation, that the economic and social factors in the area outweigh the value of high water quality.\textsuperscript{270}

The state should test all water bodies regularly to see if pollution concentrations are

\textsuperscript{262} 40 C.F.R. 131.11(a) (2008).
\textsuperscript{263} The Act establishes a national goal of “protection and propagation of fish, shellfish, and wildlife, and ... recreation in and on the water.” 33 U.S.C. §1251(a)(2) (2007); See also 40 C.F.R. 131.10 (2008). The state designates “uses” for each water body. Each use designation must take into account “public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation.”
\textsuperscript{269} 40 C.F.R. 131.12 (2008).
\textsuperscript{270} 40 C.F.R. 131.12 (2008).
exceeding the TMDL for each pollutant. Once a TMDL is set, the state must demonstrate that it is taking action to limit pollution from point and non-point sources along the water body to decrease pollution to meet the TMDL. These limitations to discharges are called Water Quality Based Effluent Limitations, or “WQBELs.”

Each drain, pipe, and outflow at a mine site is a point source. If the TMDL for a pollutant is not being met, a WQBEL should be imposed on the effluent from those point sources to reduce the amount of the pollutant that goes into the stream beyond the effluent limitations that would otherwise apply to an NPDES permit for a coal mining operation.

Additional State Certification for Federal Permits under the Clean Water Act

Another potentially powerful tool for protecting water quality is the state certification processed under, Section 401 of the Clean Water Act (CWA). Section 401 requires an applicant for any federal license or permit to obtain certification from the state that “may result in any discharge into navigable waters.” The applicant meets the CWA’s pollutant discharge limitations as well as any additional state water quality standards. Among the federal permits that may be requested for any mining operation that could adversely corrupt water quality are permits for pollution discharges, permits for rights of way across federal lands, and permits for air pollution discharges. Therefore, if a mine operator applies for any kind of federal permit that will potentially discharge material into rivers or streams, the operator will need the state’s water protection certification. Without state certification, the federal permit cannot be issued. In addition, your state may impose conditions on the mine operator – for example, monitoring the operator for the life of the federally permitted project – to ensure the operator continues to meet water state and federal water quality standards. Because of the potential breadth of the conditions imposed on federal permit applicants, Section

273 “Navigable waters” is an imprecise term, but it encompasses most rivers and streams. See Mark Squillace, From Navigable Waters to “Constitutional Waters”: The Future of Federal Wetlands Regulation, 40 U. MICH. L. REV. 799, 848-50 (2007).
401 has been called the “sleeping giant” of the CWA.\textsuperscript{277}

MONITORING A STRIP MINE
One of the most important rights granted by SMCRA is the right to call for an inspection and obtain enforcement against coal operators who are violating the law.\textsuperscript{278} Citizens who request an inspection are entitled to accompany the inspector on the mine site during an inspection.\textsuperscript{279} It is not always easy to determine whether a violation exists, but you should not let this discourage you from exercising your rights.

If, for example, you are experiencing problems with the quantity or quality of your water supply, and you have reason to believe that a mining operation is responsible, call for an inspection. Even if no violation is found, you will have put the operator and the government on notice that you are watching out for your own interests. Inevitably, you also will gain valuable insight into how well the citizen complaint process works (or doesn't work) in your state.

**HOW SMCRA ENFORCEMENT WORKS**

SMCRA includes powerful tools to help ensure compliance with the law. This section briefly reviews SMCRA’s enforcement program so that you can know what to expect and what to request from an inspector.

**Inspections**

SMCRA requires regular inspections of every “inspectable unit”, which includes mine sites as well as coal processing facilities and loading facilities that are located near the mine site. Inspections must generally occur without prior notice to the coal operator, and must average at least once each month. Complete, on-site inspections must occur at least quarterly, but the other, “partial” inspections can be conducted by aerial surveillance.\textsuperscript{280}

Citizen Complaints and the Right to Accompany an Inspector on the Mine Site: In addition to the regular inspection program, if OSM has any reason to believe that a violation of SMCRA exists, including because of a written complaint by a private citizen, then OSM must notify the relevant state agency, if there is one. If no state agency exists, or if the state fails to take appropriate action to correct the violation within 10 days, then OSM must immediately conduct its own inspection and take appropriate action to cause the violation to be corrected. When an inspection by a state or federal agency occurs as a result of a citizen complaint, the complaining party or a representative is allowed to accompany the inspector on the mine site during the inspection. If the complaining party chooses not to accompany the inspector then OSM must maintain their confidentiality. Bear in mind that because states with approved SMCRA programs are required to have laws that are consistent with SMCRA, they must have similar provisions allowing complaining parties to either accompany the inspector on the mine site, or have their names kept confidential.

Enforcement Tools

Notice of Violation (NOV): SMCRA imposes mandatory enforcement requirements on government inspectors. Under SMCRA, whenever an inspector determines that any permittee is in violation of the law, the inspector “shall issue a notice to the permittee ... of the violation.” Thus, the law provides that when an inspector sees a violation the inspector must cite the operator for it. Not surprisingly, inspectors are sometimes reluctant to cite an operator, especially for minor or technical violations that can be corrected quickly, often while the inspector is still on the mine site. Use discretion in deciding how far to push this mandatory enforcement obligation. It is especially important that this obligation be preserved for more serious violations of the law.

An NOV must be in writing and must include a time period to abate the violation, which may not exceed 90 days. An extension of time to abate the violation may be granted for good cause, but the total abatement period may not exceed 90 days except in narrow circumstances. If the operator fails to abate the violation within the period authorized under the NOV then the inspector must

283 30 C.F.R. §§842.12(b) 2008).
“immediately order a cessation” of that portion of the mining relevant to the violation. This is sometimes referred to as a “failure to abate cessation order.” SMCRA provides that a civil penalty may be assessed within 30 days from the issuance of any NOV. A “failure to abate cessation order” requires the imposition of a minimum penalty of $750 per day for each day the violation continues. Under the federal rules, penalty assessments are based upon a point system that takes into account the statutory standards for penalties, which include the operator’s history of past violations, the seriousness of the violation, any risk to public health and safety, the operator’s negligence, and the operator’s good faith in achieving rapid compliance. The operator is entitled to a hearing before an administrative law judge on the issue of whether a violation occurred and/or on the amount of the proposed penalty. These are “public” hearings. This means that private citizens can attend the hearings and can ask to participate as a party if they are directly impacted by the alleged violation and they would like to offer evidence relevant to the case.

**Cessation Order (CO):** In addition to the “failure to abate cessation order”, an inspector must issue a CO whenever the inspector finds “a condition, practice, or violation” at a mine site that “creates an imminent danger to the health or safety of the public, or is causing, or can reasonably be expected to cause, significant, imminent environmental harm...” This order requires a cessation of that portion of the mining operation causing the imminent harm. Cessation orders require the imposition of a civil penalty. Keep in mind that the statute covers any condition or practice causing imminent harm, even if you can't show a violation of SMCRA.

**Show Cause Orders:** If OSM or the relevant state agency determines that a pattern of violations exists at a particular mine site, and that such violations result from an unwarranted failure on the part of the operator to comply with SMCRA, or that the violations are deliberate, then the agency must issue an order to show cause why the operator’s permit should not be revoked. The operator may request a public hearing, but if the operator fails to offer a good explanation for the unwarranted pattern of violations then the agency must suspend or revoke the permit.

**Criminal Penalties and Corporate Violations:** Willful violations of SMCRA may be punished by

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288 30 U.S.C. §1268(h) (2007). By rule, OSM has increased the minimum daily penalty to $1025, but capped the number of days that this minimum penalty can be assessed at 30. This must be followed, however, by appropriate action to ensure that abatement occurs and that further sanctions are imposed. 30 CFR §§845.15(b).
fines of up to $10,000 or by imprisonment for up to one year, or both.\textsuperscript{294} In addition, individual corporate officers, directors, or agents who are responsible for knowingly violating the law can be subjected to the same civil and criminal penalties as the operator.\textsuperscript{295} When operators repeatedly and willfully violate the same provisions of the law, you should not hesitate to ask the relevant state and federal agencies to seek criminal sanctions or fines directly from responsible officials. The appropriate use of these sanctions can have a powerful deterrent impact on future violations.

\textbf{Citizen Participation in Inspection}

If you decide to accompany an inspector on an inspection (or if you wish to observe a mining operation from private property) be sure to prepare yourself properly before you go to the mine site. Review a map that shows the layout of the mine and, if possible, take a copy of a mine map with you, so that you can identify the various facilities you are observing. Review the Inspection Checklist in Appendix C and note those aspects of the mining operation that are of particular interest to you. Try to become as comfortable as possible with practices that constitute violations, but don't expect that you will be able to review and understand everything on your first inspection. Bring binoculars to obtain a close-up view of parts of the mine that may be difficult to approach.

Before an inspection, ask the inspector to bring a camera and arrange for him or her to take pictures of all aspects of the operation for which you would like a photographic record. You can bring your own camera, but pictures taken by an inspector may be more credible if the operator decides to challenge a citation. If you are concerned about water quality, ask the inspector to bring the necessary containers for water samples. Also, prior to the inspection, try to develop a rapport with the inspectors you will be accompanying on the mine site. Visit them in their office and ask if they will review the mine map with you to help you understand what you are going to see. Ask plenty of questions both before and during the inspection about any aspect of the mining operation you don't understand. The better your relationship with the inspector, the more likely he or she will be sympathetic to your problem and helpful in resolving it.

Take good notes of what you've seen and read carefully the inspector's follow-up report. Send written comments on the report to the inspector and ask any questions you feel have not been addressed.

answered to your satisfaction.

If you continue to have problems and the state and federal agencies refuse to order an appropriate remedy to address the problems, prepare yourself for further action. First, educate yourself about the mine. Review the mine's permit. The permit contains maps for the entire mining operation as well as for the area permitted for mining at that particular time. Examine the appropriate maps to learn the basic layout of the mine. Note the location of sedimentation ponds and other water impoundments, stockpiles of topsoil and fill areas.

You might want to take a look between the map as it now exists and the one that you were shown prior to permitting. (These maps are large. You may be charged to reproduce these maps; color maps are much more expensive than black and white ones.)

If you notice any inconsistencies between the features on the maps and the operation as conducted on the ground, ask about them. Then try to answer the following questions about the mine.

- What type of mine is it — contour, area, mountaintop, open pit, or underground?
- What kind of equipment is being used for each phase of the mining operation?
- Is the operator using any special method to dispose of the spoil? Is he disposing of spoil outside of the mine workings? If so, is the spoil disposal area classified as a valley fill?
- Is the mine operating under any variations from normal performance standards established for mining operations by the federal or state rules? The most common variances are the stream buffer zone variance and the approximate original contour (AOC) variance. A buffer zone variance allows the operator to dump spoil within 100 feet of a stream. An AOC variance allows the operator to avoid restoring the mined-out areas to the slope that the mountain originally had before mining. On what authority were such variances approved?
- Are there any streams running through the mine? If so, does the permit authorize the operator to mine through them? Are additional permits required under Clean Water Act § 404 (for the placement of dredged or fill material in streams) or § 402 (for the discharge of point-source pollutants)? (See “Additional Permitting Requirements Under the Clean Water Act” in Chapter 5.) How is the water from the stream system being diverted? Ask to review the NPDES

\[296\] 30 C.F.R §816.57(a) (2008).
• Have state water effluent limitations been met?

• Have any strata (layers) of overburden been identified as toxic-forming, acid-forming or combustible? How deep are these layers below the surface? How thick are they? What is the operator's plan for keeping these materials from contaminating the soil, any surface waters, or the groundwater?

• Is the operator separating and stockpiling the topsoil? If not, why not? Some operators apply for permission from the state agency to use a commercial topsoil substitute instead of saving and re-using the original topsoil. Ask to see the operator's permit to use a topsoil substitute.

• Has the operator been monitoring for pollutants in the ground and surface water? Is the monitoring program adequate? Are the monitoring wells in the appropriate location for the purpose of identifying possible violations of water quality standards or permits? What are the results of that monitoring? (You may want to read the operator's monitoring reports.)

• Has the operator identified all existing wells within or near the mining area? This must be done prior to issuance of the permit. Frequently, wells and even homes are left off the mining maps. Has the operator dug new wells? Is the operator monitoring the quantity and/or quality of water in those wells?

• Are explosives being used? If so, what are the blasting procedures?

• Were pre-blast surveys done for all homes in the area that requested them? Federal rules require the operator to notify all residents within a half-mile of the permit boundary of their right to request a pre-blast survey 30 days prior to blasting.

Once you have a general idea about how the mining operation is supposed to be run, you can begin

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299 30 CFR § 816.41(c), (e) (2008).
301 Blasting requirements are found at 30 CFR § 816.61-68 (2008). For more information, see The People’s Guide to Blasting by Will Collette and Freda Harris. A summary of the guide can be found at: http://www.mtwatershed.com/resources/strip_mining/how_to_document_blasting_damage.pdf
monitoring the mine for specific violations.

Keep Complete and Accurate Records

As you begin to work on a problem with a surface mining operation, it is essential that you keep complete, accurate, and well-organized records of the particular events that are causing the problem, and the operator’s and agency’s responses to those events. This information may provide valuable evidence if your case ultimately winds up before an administrative law judge. Try to keep a notebook handy and record the date, time and other pertinent information about events as they occur. Take pictures of problems that you observe or of things that might refresh your memory about those problems.

For example, if you are experiencing problems with blasting from a mining operation, record the exact time and date of the blast and how it affected you. Take photographs of any important evidence such as bad water running into a stream, flyrock near your home, a new crack in foundation, broken pictures, or dishes on the floor. Record the time and location of each photograph and the name of the person who took the photograph. Keep photocopies of letters and other relevant documents in a central file that is organized chronologically. If you are keeping information on a computer, print back-up copies or store information on a back-up disk as well. You also may want to tab certain or all of the documents in that file so that they can be more easily located.

Controlling Water Pollution

Chapter Two explained how mining operations can adversely affect water quality. This section helps you understand what an operator can do to control various kinds of water pollution and assists you in determining whether a mining operation is violating the pollution control requirements of the law.

Toxic Drainage. Toxic drainage (including iron contamination) is often controlled by simply keeping the toxic-forming materials away from contact with air and water. For this to be accomplished, the permit application should have identified all toxic materials within the overburden or in the stratum immediately below the coal seam. These materials should then be handled and buried in such a way that they will not come into contact with water and air. If toxic drainage is occurring, you should expect that either the

reclamation plan was inadequate or that the operator is not following the plan. Rain that falls on pyrites or other acidic materials can liberate metals from overburden that should never have been exposed. This could lead to a violation of SMCRA's performance standards or a Clean Water Act permit, and if so, the operator should be cited by an inspector.\footnote{305} In order to remedy the violation, the regulatory agency should require the operator to amend his reclamation plan or alter the method of handling the toxic material. In addition, although this should not be viewed as a long-term solution, the operator should be required to treat any water body contaminated by the toxic drainage.\footnote{306} If toxic drainage continues, additional violations should be cited.

**Sediment control:** The operator must have sediment control devices to "prevent additional contributions of sediment to stream-flow or to run-off outside the permit areas to the extent possible using the best technology currently available."\footnote{307} There are several clues you can look for to determine if the operator is complying with this provision. The primary sediment control device is usually one or more sedimentation ponds. (These are also called siltation structures.) A sedimentation pond is a structure designed to collect surface runoff from a mine site and hold the collected water long enough for the sediment to settle to the bottom of the pond. Compliance with the sediment control standards can be checked by reviewing the following aspects of a mining operation:

- Sedimentation ponds must meet certain technical size requirements. Check your state regulations to see if the ponds comply.\footnote{308} If no pond exists, find out why not. (Some extremely small operations can obtain exemptions from this requirement.)

- Generally, ponds should not be located in intermittent or perennial streams (streams that flow most of the year). In some cases, however, especially in Appalachia, operators receive permits to construct ponds in stream beds even though such ponds may be illegal under the Clean Water Act. The operator must obtain specific approval from the regulatory agency to locate the pond in a perennial stream. If the operator claims to have been granted the right to place a pond in the stream, ask to see the permit provision authorizing it and try to determine whether the operator is meeting all of the conditions in the permit approval, including any effluent limits established for discharges from the pond.

- Check the pond for its capacity to hold additional sediment. If too much sediment is allowed to build up, water flowing in will not drop its pollutants, but carry them into the receiving stream. Do you see

\footnote{306} 30 C.F.R. § 816.41(f) (2008).  
\footnote{307} 30 U.S.C. § 1265(b) (10) (B) (2007).  
\footnote{308} 30 C.F.R. § 816.46(c). (2008).
"islands" of sediment under the surface of the pond? If so, a violation may exist.

- Note whether the sides of the pond have been graded, vegetated and stabilized to prevent slides or excessive sediment contributions. Bare or eroded banks may contribute additional sediment to the pond and reduce its ability to handle sediment from the mine.

- Locate the dam that holds water in the pond. Is the water flowing over the top of it? If not, can you see indications that water has been flowing over the top of it? Are there any breaches or cracks in the walls of the impoundment?

- Look for puddles of water below the dam which would indicate that water is either seeping through the dam or has been flowing over the top. If no standing water is evident, check for large deposits of silt or clay which would indicate that water was once standing in that spot.

- Locate the two spots where water flows into and out of the pond. If these two places are in a straight line, a violation may exist, since the water might simply flow from intake to discharge without standing long enough to settle out pollutants.

- Look at the pipe through which water is discharged from the settling pond. Is there any evidence of water seeping out around the pipe? Is the soil around the pipe badly eroded? In either case, the pipe may be functioning improperly and a violation may exist. If there’s a discharge pipe, the operator needs an NPDES permit, which is a permit from the state to discharge substances into a waterbody.\(^{309}\) There are different standards for different substances. The outflow must be tested regularly. The water in the stream below the discharge pipe must meet ambient water quality standards.\(^{310}\) Also check anti-degradation standards for your state to see if variations are allowed.

- If water is draining from the pipe, does it appear to be clear? If not, the pond is probably not functioning properly, and a violation may exist. (If you are visiting the site on a citizen complaint inspection, be sure that the inspector takes a water sample at any place where you suspect a violation, including the discharge pipe.) A total dissolved solids tests should also be performed if it appears that too much sediment is in the receiving stream or exiting the pond before it reaches the stream.

- Look for emergency spillways. These spillways will resemble ditches or concrete drains and are designed to carry water away if the pond is in danger of overflowing. The ditches themselves should be clear and unobstructed, but there should be vegetation on the sides to control erosion. All sediment ponds must be designed by a registered engineer and must withstand a 10-year, 24-

\(^{310}\) See section on CWA § 303(d) in Chapter 5.
Certain types of larger impoundments must satisfy additional requirements set out in the regulations. You will probably need to consult with an engineer to determine whether problems exist with a large impoundment.

- Is all the water that runs off the mine going into settling ponds? Or can you see drainage channels that do not lead to settling ponds? If so, a violation probably exists.
- Are there control devices (such as a rock-lined channel) where the water is discharged from the pond to prevent erosion and enlargement of stream channels? These devices are required where necessary.

Other devices may be used at various points on the mine site to control sediment — such things as straw barriers, [riprap], vegetative sediment filters (strips of grass or other erosion-resisting vegetation used to prevent sediment from leaving the mine site), dug-out ponds, and sediment traps (small, temporary basins formed by excavation and/or enlargement to interrupt sediment and water runoff). The state regulatory agency can tell you whether the mine you are monitoring is required to have any of these devices and if so, where they should be located. Keep in mind, however, that the operator is required by SMCRA to use the "best technology currently available" to control sediment runoff. If you suspect that the technology employed is not the best available, be sure to ask the regulatory authority about it.

Another problem with sediment ponds is temperature. Water that is held in place increases in temperature. An operator must not damage aquatic life by releasing warm water from a sediment pond, especially when the receiving stream is a coldwater fishery or wild trout stream. The operator’s NPDES permit should include effluent limitations for temperature.

**Stream buffer zones.** Federal rules prohibit surface mining activities within 100 feet of a perennial stream unless otherwise allowed by the regulatory agency. Mining activities within 100 feet of a stream may only be approved if they will not adversely impact water quality, quantity, and environmental resources in the stream.

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312 30 C.F.R. § 816.49 (2008).
313 30 C.F.R. § 816.45(a) (2008).
315 30 C.F.R. § 816.57 (2008). A Bush administration rule promulgated in late 2008 that exempted valley fills from the stream buffer zone rule will not likely be implemented as the Obama Administration has announced its intention to return to the 1983 buffer zone rule described here. The Bush rules were published at 73 Fed.Reg. 75814 (2008) available at: [http://frwebgate.access.gpo.gov/cgi-bin/PDFgate.cgi?WAISdocID=39132113641987+0+2+0&WAISaction=retrieve](http://frwebgate.access.gpo.gov/cgi-bin/PDFgate.cgi?WAISdocID=39132113641987+0+2+0&WAISaction=retrieve).

Mining operations can disrupt the water yields both from surface water and groundwater systems. Under the law, a surface mine operator must replace the water supply of a landowner if the mining operation contaminates, diminishes, or interrupts the water supply. The operator either must drill a new well or supply water from an alternative source.

**Impacts on Groundwater**

Groundwater lies below the surface of the land in zones called aquifers. Water is held in the aquifer by strata or a bed of material (often called a confining bed) that is relatively impervious to water. Mining can affect aquifers in at least three ways. First, a surface mine pit may intercept an aquifer, causing water to flow into the mine. This water must be pumped out of the mine and either into a surface stream or back onto the ground. If the water is being discharged into another waterbody or wetland area it probably needs an NPDES permit as described above. Second, blasting can adversely affect aquifers by fracturing the rock strata below the aquifer and causing the water to migrate to lower strata. Finally, subsidence may damage aquifers above underground mine workings. The collapse of the strata above a mine fractures the confining bed and allows the water to migrate to lower depths. Such disruptions of the groundwater "regime" may reduce the natural pressure within the aquifer, thereby increasing pumping costs for persons who obtain water from the aquifer. Disruption from mining also may lower the water level within the aquifer, thereby reducing or depriving some users of their supplies.

In some areas, particularly in the Appalachian region where mountaintop removal is common, many aquifers are perched and shallow. Mining through these areas will inevitably destroy these aquifers and make restoration of the hydrologic balance as required by SMCRA difficult or impossible to achieve. Be sure that the state or federal officials take baseline data for all ground water wells in the vicinity before mining begins and that additional monitoring wells are drilled as needed to accurately determine the impacts from mining.

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316 30 C.F.R. § 817.41(j) (2008), see also 30 C.F.R. § 784.14 (g) (2008).
Impacts on Surface Water

Mining can affect surface water systems in much the same way that it affects groundwater aquifers. Blasting and subsidence can fracture the bed confining the stream in much the same way that it fractures the bed below an aquifer. Furthermore, surface and groundwater systems often are connected hydrologically, so that depletion of an aquifer can directly affect the quantity of water available in a stream. If mining is proposed below a surface stream, or in the vicinity of a stream, you should request that the flows of that stream be monitored so that the impacts from mining can be determined. Mountaintop removal mine operators often bury surface streams completely with “valley fills.” See the section “Controlling the Impacts of Excess Spoil Disposal” below for information on the laws governing valley fills. The headwater streams buried by valley fills are critically important because they contain unique aquatic life and provide organic nutrients to fish and other species downriver.317

The Need for Water Monitoring

The best way to determine the impact of mining on groundwater supplies is through constant monitoring. As suggested in the previous chapter on permitting, you should attempt to obtain a wide range of data about your water resources before the application is approved. Other information on water resources may be available from the U.S. Geological Survey. Call or visit your local USGS office or visit the USGS website at www.usgs.gov and search for publications on water resources for your area.318 After mining has commenced, you should continue to monitor your well for changes in water quality and quantity. If you suspect that your water has deteriorated either in quality or quantity, request an inspection and water analysis. If you are not satisfied with the results, you may want to test your own sample and have it analyzed. (Be sure to follow the procedures described in Chapter 5.) Keep careful records showing the dates when you collect samples and the information from the analysis of each sample. This may be important evidence if you decide to pursue formal action against a coal company or the regulatory agency.

318 Go to the following website and search for a Water Data Report for your area:
Enforcing Water Standards Using the Clean Water Act

Section 505 of the Clean Water Act (CWA) authorizes citizens to file a lawsuit to enforce the Clean Water Act’s provisions. Some important CWA provisions are described in Chapter 5 because they relate to permitting. Operators must obtain permits, for example, if they intend to pollute or discharge waste into rivers or streams. Therefore, a citizen could sue a coal operator under Section 505 for dumping coal slurry into a stream without a valid discharge permit (under either § 402 or § 404 of the Clean Water Act), or because the coal slurry contains pollutants like suspended solids that violate the effluent limits set forth in the NPDES permit. If the agency issues a notice of violation and compliance order against the operator and the operator continues dumping slurry, you can sue the coal operator for failing to comply with the agency’s order.

A citizen may sue any person or corporation (including any government agency) that is violating Clean Water Act standards or orders issued pursuant to the law by the EPA or the state. Alternatively, a citizen may sue the EPA directly for failing to perform a mandatory act or duty under the Act. Before a citizen can file a lawsuit, she must notify the EPA or the state agency about the violation, and then wait 60 days to see if the EPA or state agency takes appropriate legal action to remedy the violation. If the EPA or state agency initiates a lawsuit to enforce the effluent limit, you may not file a separate lawsuit but you may join the lawsuit initiated by the agency.

If you sue and win, you may be reimbursed for your litigation expenses, including reasonable attorneys’ fees. Section 505 provides that a prevailing party or substantially prevailing party may be awarded costs if the court deems such awards appropriate.

Controlling the Impact of Mining Roads

During an inspection or on any other occasion you have to observe the mine, look at the roads that serve the mine. All roads should be located on benches, ridges, or other available flat land or stable slopes — and away from the valley bottom wherever possible. No roads may be located in stream beds without the express approval of the regulatory authority. All roads must be properly drained to

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There should be no evidence of erosion on the road — no gullies running down the middle, for example. Look for signs of erosion on either side of the road at points where water can be expected to run over the road. This may suggest a problem in need of correction. The design and construction of any road used to haul coal or spoil must be certified by a registered professional engineer (PE). Check the permit file to make sure these documents are signed, dated, and stamped with the PE’s seal. You may also want to make sure the person who signed the permit is actually a registered professional engineer.

Controlling the Impacts of Excess Spoil Disposal

Operators of mountaintop removal mines dispose of excess “overburden”—the material comprising the top of the mountain that is blasted to reach a coal seam—by placing it in “valley fills.” Valley fills are created by dumping the overburden into valleys adjacent to the mountaintop mine. Before beginning to construct a fill, the operator must remove all vegetative material from the area — as well as remove all topsoil — and then segregate, store or redistribute the topsoil as required by law. But, since it is far easier to just dump everything into valley fills in one fell swoop, operators often end up using a “substitute topsoil,” consisting of overburden other than topsoil to revegetate the reclaimed mine site. Substitute topsoil typically supports grasses but not trees, and it is only allowed when it is “equal to, or more suitable for sustaining vegetation than, the existing topsoil, and the resulting soil medium is the best available in the permit area to support revegetation.” Furthermore, unless a special exemption is obtained, fills must be constructed in four-foot layers or "lifts" and compacted before a new layer is placed in the fill.

If you are able to monitor the construction of a fill, be sure that the operator has first removed and segregated the topsoil and is regularly compacting the spoil in the fill. Keep records of your observations.
and report potential problems to the regulatory authority immediately. Once the fill is constructed, it will be extremely difficult to prove that irregularities occurred during construction.

Fills must be located in the most moderately sloping and naturally stable areas available, and where possible, must be placed above a natural berm or bench, if such placement will make the fill more stable. If the fill area contains springs, the engineer must design a system of courses or wet weather seeps in order either to divert the water around the fill or provide a drainage system under the fill. The drainage plans must be designed to prevent infiltration of water into the excess spoil material disposed of in the fill. Drainage systems usually will be necessary for any head-of-hollow or valley fill, and they must be approved by the regulatory authority. Operators often disregard the rules for creating fills completely and simply dump the overburden down the nearest valley. The resulting burial of valley streams is one of the greatest abuses in the modern coal-mining era. Burying a stream quite clearly violates the stream buffer zone rule, which generally allows a variance from the 100' buffer zone requirement around streams where no adverse impacts would result. In December, 2008, the Bush Administration promulgated rules that exempted excess spoil fills from the buffer zone restriction. Shortly after taking office, however, the Obama administration announced its intention to rescind the 2008 Bush rules.

Where the fill materials are comprised of at least 80 percent durable rocks (such as limestone or sandstone, but not shale), less stringent requirements are imposed on operators. They still must have the fill certified and must control the drainage to keep water away from the fill.

For most fills, spoil material must be transported and placed in a controlled manner. This generally means that the spoil will have to be trucked or moved by conveyor to the fill area. End-dumping of spoil is generally prohibited. Where an operator is mining multiple seams, however, the regulatory authority has discretion to approve excess spoil disposal by dumping spoil down chutes from a higher bench to a lower pre-existing bench.

332 30 C.F.R. § 816.71(c), (2008).
335 30 C.F.R. § 816.72(a) (2008); 30 C.F.R. § 816.71(b) (2008).
336 30 C.F.R. § 816.57 (2008)
338 30 C.F.R. § 816.73(b) (2008).
339 30 C.F.R. § 816.72(a) (2008); 30 CFR § 816.71(b) (2008).
341 30 C.F.R §§816.71(e)(2) (2008). “Excess spoil shall be transported and place in a controlled manner in horizontal lifts not exceeding 4 feet in thickness...”
342 30 C.F.R §816.79(h) (2008).
Fills must be inspected at least every three months during their construction by a registered professional engineer, and a report of the inspection must be provided to the regulatory authority. These inspections are critically important, and you should contact the regulatory authority immediately if you have evidence that these inspections are not being conducted in a timely fashion. You also should check the inspection reports for accuracy and completeness and for any indications of violations. Again, make sure the inspector is actually a professional engineer and the engineer’s reports contain his or her signature and seal.

Controlling Landslides

Landslides can occur when an irresponsible operator disposes of the overburden in the cheapest and quickest way possible: by dumping it over the side of the mountain. In steep terrain, spoil dumped this way on the downslope is usually unstable. Even normal rainfall may be enough to start it moving. If a landslide has come onto your property, call a state or federal inspector immediately, and demand that the mine operator remove the slide as quickly as possible, regardless of cost.

Obviously, however, you would be better off preventing slides before they occur. The first step is to look for spoil on the downslope (the area below the bench in a contour mining operation). If you see spoil on the downslope, find out when it was placed there, and try to determine the angle of the slope. (See box.) If the spoil was dumped over the downslope after May 4, 1978, and the slope is steeper than 20 degrees, the operator has violated the law, and you need no further information before calling an inspector.

If the slope is less than 20 degrees (a rare find in the Appalachian Mountain coalfields) it may not be illegal to dump spoil on the downslope. Nonetheless, as noted above, the federal regulations require that the disposal area be located "on the most moderately sloping and naturally stable areas available." If the operator has failed to comply with this requirement a violation exists. Of course, the company may also be liable – whether or not they had the correct slope – if the disposal activities cause a landslide resulting in spoil leaving the mine site.

343 30 C.F.R. § 816.71(h) (2008).
345 30 C.F.R. § 816.71(c) (2008).
MEASURING SLOPES

The federal law and regulations impose a variety of requirements that relate to the slope of the land. Some of these requirements apply only to slopes that exceed a certain steepness or grade; others limit the steepness of slopes following backfilling and grading. Slopes sometimes are described as percentages and other times in degrees, a possible source of confusion.

A slope described as a percentage merely measures the amount of rise or fall over a distance of 100 feet. Thus, a slope that gains 50 feet in vertical height over a horizontal distance of 100 feet is a 50 percent slope. Measuring a slope by degrees is based upon a 360 degree circle. Thus, a sheer vertical wall would be one-fourth of a circle, or 90 degrees. A 100 percent slope, (a slope that rises as quickly as it proceeds along the horizontal) is a 45 degree slope. Likewise, a 50 percent slope is equal to a 22.5 degree slope. Some of the statutory requirements apply to 20 degree slopes, which are the equivalent of 44.4 percent slopes.346

Generally, it's hard to gauge the steepness of a slope with your naked eye. You should be able to get OSM or your state agency to measure the slope for you. (If you prefer to do it yourself, you can use a device called an Abney level, a tool for measuring slopes that is available at hardware stores but is relatively expensive.)

It is not always easy to determine whether the spoil is stable or shows signs of sliding. But some common-sense observations may help you spot an unstable disposal area.

- First, look at the terrain. Did the operator scalp the area (removing trees and undergrowth) before dumping the spoil? If not, the spoil is likely to be unstable. Furthermore, as described earlier, failure to scalp the area before disposing of spoil is itself a violation.

- Do you see any surface water runoff? Are there ponds of water on the bench above the spoil? Are there underground water seeps or other naturally wet areas nearby? These are indications that water may be impacting the stability of the spoil.

346 For example, spoil may not be dumped onto the downslope below the bench cut if the slope is greater than 20 degrees. Twenty-degree slopes are considered “steep slopes” under SMCRA.
• Will the terrain below the spoil provide an adequate barrier to keep it from sliding? Has the toe at the lower edges of the spoil been eroded? If so, the whole mass of spoil could come down in heavy rain.

• Next, look at the spoil itself. Has the spoil been compacted (compressed by rollers or tractors) in layers? If not, it is likely to be unstable. Do you spot any tension cracks in the spoil? Deep cracks may indicate a lack of stability. If the spoil appears to be unstable, a dangerous condition exists, and an inspector should be called immediately.

Once the spoil actually begins to move, it is unquestionably dangerous. Many times, sliding spoil can be spotted easily — it will creep down the hill and you can see that the whole mass has been moving. In other cases, you may have to look carefully for signs of movement. For example:

• Look for cracks at the top of the spoil. This may indicate that water is saturating the material under the surface.

• Look for a bulging at the toe of the spoil. This indicates that the dirt and rocks within the mass of spoil are in motion even though the surface may appear stable.

• Check to see whether the shape of the mass of the spoil changes, especially at the bottom. If so, the spoil is moving.

These are all tell-tale signs of a landslide developing. If you see them, don't hesitate. Call an inspector.

Controlling Impacts from Blasting

Strip mine operators use explosives to shatter the overburden. Poorly-controlled blasting can result in extensive property damage. Foundations crack, windows break, wells lose water, porches separate from homes, and boulders fly through roofs. SMCRA contains detailed provisions on the proper use of explosives, which can help you to protect your property against blasting damage.  

Only persons trained and certified by the proper state agency may conduct blasting operations.  

and blasting may take place only between sunrise and sunset. The mine operator must publish a blasting schedule in the local newspaper 10 to 30 days before blasting begins, and copies of the schedule must be provided to all residents within a half mile of the blasting area. The schedule should contain the operator’s contact information and identify the specific areas, dates, and time periods in which blasting will take place, as well as methods to be used to control access to the blasting area and types of audible warning signals to be used before blasting. While mining continues, the operator must republish and redistribute his blasting schedule at least every 12 months. If the blasting schedule is violated, you can call the state agency and ask an inspector to investigate.

The size of each blast also is regulated. The operator must record information about each blast and must keep this information on file for three years. Blasting records must be made available for public inspection on request.

You should become familiar with the operator’s blasting plan. Record any blasting you see. It is a good idea to check the operator's records from time to time to see if they match yours.

As noted in the discussion of the permitting process, if you live (or own a structure) within a half mile of a blasting area, you can and should ask the state for a pre-blasting survey of your property. The purpose of the survey is to "determine the condition of the dwelling or structure and to document any pre-blasting damage and other physical factors which could reasonably be affected by blasting." [See box in Chapter Five for more information about pre-blast surveys.] The operator is required to perform a survey if you request one. If you live more than a half-mile from the blasting area, or if blasting has already started, you should still request a pre-blast survey. Although your request may not be granted, you will still be on record as having requested a survey. Your insurance company may also cover an independent survey if you think one is necessary.

If a blast throws rock or other material on your property, you should take note of any damage that has occurred. If possible, record the exact time of the blast. Take pictures showing the damage in detail. Be sure to note the pertinent information about the camera, date, time, place, and the person taking the picture, as described previously in this chapter. It is illegal for a blasting operation to cause any damage to your home, even cosmetic damage.

349 30 C.F.R. § 816.64(a)(2) (2008).
351 30 C.F.R. § 816.64(c) (2008).
352 30 C.F.R. § 816.64(b)(3) (2008).
353 30 C.F.R. § 816.68 (2008).
355 30 C.F.R. § 816.62(c) (2008).
According to regulations, flyrock from a blasting site may not travel more than one-half the distance to an occupied structure. Therefore, any debris which reaches your property indicates a probable violation and you should file an immediate complaint with the state agency. You also should request an inspection. If your complaint has a reasonable basis, the state must inspect; if a violation is found, the inspector must issue a citation.

If blasting is causing your house to shake, or some other problem such as loss of well water, ask the state agency to set up a seismograph on your property. A seismograph is an instrument sensitive to ground motion that can sometimes measure blasting accurately enough to determine whether an operator is violating the law.

When the state agency sets up the seismograph, ask the official to explain its operation to you thoroughly, so that you can be sure it is working properly. Since mining companies have been known to cut back on their blasting during periods of monitoring, you should request that the operator not be told that blasting is being monitored. If the official agrees to this request, make a note of the official's name and the date. You also should confirm your arrangement in writing.

With the aid of the seismograph, you and the state agency may be able to determine whether the blasting violates the law. Ask the inspector to issue a notice of violation or a cessation order for any illegal blasting activity. In case of doubt, you may want to go with an inspector to check the operator's blasting records. The inspector should compare the post-blasting damage to the pre-blast survey. It is not sufficient to simply assess the seismographic records to determine if damage should have occurred.

If you have damage that did not exist prior to blasting, and the operator refuses to compensate you, take the company to small claims court. Check with your state regulatory agency to see if your state has a blasting office that can assist you with blasting claims.

For a useful guide to protecting your home from blasting damage, see “The People’s Guide to Blasting” by Will Collette and Freda Harris. The Mountain Watershed Association has also published a useful brochure.

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357 Will Collette, Freda Harris, THE PEOPLE’S GUIDE TO BLASTING, (1999).
Controlling the Impacts of Topsoil and Overburden Removal

The operator is required to remove and save at least six inches of topsoil (or the most suitable subsoil as approved by the regulatory agency) before mining begins. Watch for scrapers and bulldozers to see that they are removing at least six inches of the uppermost material.

SMCRA requires the operator to either save the topsoil in stockpiles, or immediately distribute it on mined-out areas that have been regraded. If stockpiled, the soil must be protected from wind and water by the use of a snow fence, vegetation, or any other kind of treatment that preserves the soil and prevents erosion. Thus, if you see wind blowing topsoil off the pile, you are probably observing a violation. Note also that stockpiles must be placed on stable sites within the permit area and cannot be moved until the material is redistributed on a regraded area without the approval of the regulatory agency.

After removing the topsoil, the operator removes the overburden – the material covering the coal. If the regulatory agency has identified any of the layers of overburden as toxic they must be segregated from the rest of the overburden. Materials directly above the coal seam often are toxic.

Controlling Backfilling, Grading and Other Reclamation Work

After the coal seams have been removed, SMCRA requires the operator to put the spoil material back in place and grade the area to its approximate original contour (AOC). Backfilling and grading (as well as other reclamation activities such as topsoil replacement and revegetation) generally must take place as soon as is practicable after mining. This usually means that where mining occurs in adjacent pits, an operator should remove the coal from the first pit before opening the next pit in order to use the overburden from the second pit to backfill the first pit.

359 30 C.F.R. § 816.22(a) (2008).
363 30 C.F.R. 816.71(e)(5) (2008); 30 C.F.R. 816.41 (2008). Toxic spoil should be treated or buried away from nontoxic materials in order to prevent surface and ground water contamination, minimize the adverse affects on plant growth, and the approved postmining land use.
During the backfilling and grading operation, SMCRA requires the operator to bury or otherwise treat all toxic and combustible materials to assure that they do not become sources of pollution. If toxic materials are allowed to come in contact with surface water, the resulting drainage will likely be toxic, thus causing pollution of streams and other water bodies.

The area must then be graded to closely resemble the original contour and probably scarified or roughened in some fashion, so that topsoil will not slip once it is placed on the regraded area. All final grading must be done in a manner that minimizes erosion. This generally means grading along the contour — perpendicular to the slope.

The regulations permit the operator to re-shape the mined area with terraces, if prior state approval is received. Check the permit to see if approval has been given.

The final graded slopes must be protected from wind and water erosion. There should be no significant rills (small channels caused by the erosive effect of water) or gullies on these slopes, and there should be no evidence of slumping or potential landslides. If these problems develop, the operator must re-grade the area and re-seed or replant it. If rills or gullies have developed, which suggest that reclamation may fail, ask the state to require the operator to repair the damage before it becomes worse.

Once an area has been graded, it must be covered with topsoil (or the approved, most suitable soil). This soil must be spread in a uniform thickness and adequately protected from wind and water erosion.

The operator then must seed and mulch the graded area during "the first normal period for favorable planting conditions after placement of the plant growth medium." All areas must be seeded with a temporary cover of small grains, grasses, or legumes (such as alfalfa), until adequate permanent cover is established. If the area has been improperly prepared, you will probably see signs of gully erosion and should notify the state. You also should look closely at former stripped areas that have been growing for a year or so. Is vegetation poor in comparison with that in other parts of your region? If so, a violation may exist. Most likely, the spoil was handled improperly or seeding was inadequate. Ask the state to conduct an inspection.

One new attempt to restore optimal soil conditions is the Appalachian Regional Reforestation

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368 30 C.F.R. §816.102(j) (2008).
Initiative (ARRI). The ARRI is a coalition of OSM and several Eastern coalfield state agencies. The agencies cooperate with the coal industry, environmental groups, citizens’ groups, and scientists to promote the goal of replanting high-value hardwood forests on reclaimed coal mines. Traditional surface mine reclamation techniques over-compact replaced soil, making it harder for high-value hardwood trees to grow. The ARRI encourages looser soil compaction techniques and planting new trees in two stages: first, early-succession species are planted to stabilize soil and allow wildlife to return. Second, commercially valuable crop trees are planted. Using at least four feet of properly compacted soil and proper planting techniques allow effective forest regrowth. The ARRI calls their reforestation technique the “Forestry Reclamation Approach,” or FRA. The ARRI’s website is available at http://arri.osmre.gov. The program is, however, voluntary, and mining companies have little incentive to adhere to the program.

Controlling Mountaintop Removal Operations

Under the law, an operator may be permitted to remove the entire top of a mountain if he can meet certain requirements. Mountaintop removal (MTR) is defined as a mining operation that "will remove an entire coal seam or seams running through the upper fraction of a mountain, ridge or hill by removing all of the overburden and creating a level plateau or a gently rolling contour with no highwalls remaining."\(^{373}\) This practice is generally confined to the mountainous areas of the Eastern coal mining states. In addition to the previously noted valley-fill regulations, an operator must meet several requirements in order to get permission for mountaintop removal:

- The operator must establish a post-mining industrial, commercial, agricultural, residential, or public use for the mountaintop.\(^{374}\)

- The final grade of the top of the mountain must be less than 20 degrees.\(^{375}\)

- Water must drain toward the middle of the area (not down the sides of the mountain).\(^{376}\)

\(^{373}\) 30 C.F.R. § 824.11(a)(2) (2008).
• The outslopes (the slopes below the coal seam) of the area cannot exceed 50 percent without the approval of the regulatory authority.377

• To prevent slides, an outcrop barrier "of sufficient width" must be retained.378

• Damage to streams below the mountaintop must be prevented.379 (This requirement is frequently violated by mountaintop removal operations, which construct valley fills that bury streams. The difficulties of enforcing against these violations are discussed briefly below.)

• All mountaintop removal permits must be reviewed every three years, and the terms of such permits can be changed to reflect site conditions.380

• All other standards of the law must be met.

The detailed inspection checklist at Appendix C sets forth the extensive requirements for conducting a mountaintop removal operation. Where appropriate, the checklist contains references to the federal statute and regulations. Take this checklist with you when you visit a mine site and use it to help you identify potential problems at the site.

As described at the beginning of this book, mountaintop removal mining is perhaps the most controversial method of coal mining. When SMCRA was enacted, however, mountaintop removal was not nearly as widespread as it is today. Efforts to control or limit mountaintop removal are described throughout this book, particularly in the context of Clean Water Act challenges described in Chapter 5.381

Controlling the Impacts from Subsidence

Subsidence of the surface above underground mine workings can take the form of surface cracks or potholes and may not show up for many years. Most modern underground mining today, however, uses longwall mining methods that result in planned subsidence, which occurs soon after the coal is extracted. Planned subsidence occurs when operators allow the tunnel from which coal is extracted to

381 For an informative story of Appalachian citizens and lawyers challenging the destructive practices of MTR mine operators, see MICHAEL SHNAYERSON, COAL RIVER, (Farrar, Straus and Giroux 2008).
collapse in a controlled manner, causing the surface of the land to sink. Under SMCRA, the mining operator has the responsibility to “minimize material damage to the extent technologically and economically feasible to non-commercial buildings and occupied dwellings.” Additionally, if the damage occurred after 1992, the mining operator must repair or compensate for any material damage to your residential property.

In 2001, the West Virginia Supreme Court described the effect of subsidence on adjacent lands: “Because subsidence extends laterally beyond the area actually undermined, adjacent surface land is affected as well. Somewhat like the sides of a shallow trench dug in the sand on a beach tend to collapse inward, land adjacent to the undermined area may be dragged downward as the roof over a mined area collapses. When combined with the known depth of the mining activity, the angle of draw can be used to predict the general area where subsidence can be expected to occur.”

Your house may be impacted by subsidence even though it is located hundreds or even thousands of feet away from the area directly above a mine. A pre-subsidence survey, as well as any photographs or other proof that the property was not damaged before subsidence, will be valuable in proving that the mining operator is responsible for the damage and must repair your property or compensate you for any decrease in property value you have suffered.

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383 30 CFR § 817.121(c)(2) (2008). This provision was added as part of the 1992 Energy Policy Act.
PARTICIPATING IN
BOND RELEASE
PROCEEDINGS

At the final stage of a mining operation, the state releases operators from the bond posted during
the permitting stage. The purpose of the bond is to make sure that the regulatory agency has access to
sufficient funds to pay for the reclamation of the affected land if operators fail to live up to the terms of
their permits. Release of the bond releases the operator from any responsibility imposed by SMCRA for
damages from the mining operation.

Participation at the permitting and enforcement stages will probably provide you with most of the
technical information you will need to participate effectively in bond release proceedings. Put simply, the
state should not release a bond unless operators have reclaimed the mined land in accordance with the
terms of their permits and in the manner required by the applicable federal and state laws.

The checklist at Appendix D was designed to guide you through the review of a bond release application.
Note that the checklist is divided into three parts, consistent with the three phases of bond release
authorized by the statute: (1) backfilling and grading; (2) revegetation; and (3) full reclamation under the
standards of SMCRA. Some operators, however, will not seek bond release until two or even all three
phases are completed.

When an operator desires to have all or any portion of its bond released it must file an
application with the appropriate state or federal agency and it must include a statement certifying
that all relevant reclamation activities have been completed in accordance with the law. The
operator must also notify local landowners and local government officials, including water
treatment authorities, of its application and advertise the application by publishing a notice in a local
newspaper once a week for four consecutive weeks.\textsuperscript{385}

The issues that are most likely to arise at the backfill and grading stage of reclamation have to do
with the contour of the land. Recall that the operator is generally required to restore the
approximate original contour of the land. Ask yourself whether the restored lands blend well with
the surrounding terrain and whether proper drainage patterns have been restored. Assess the land
during or right after a big rain storm to see how well water flows through the land. Keep in mind
that moving dirt is the biggest expense an operator faces at a mine site and that accordingly, an
operator will want to minimize this work.

The regulatory authority may release up to 60\% of the total bond after the first phase of
reclamation has been completed. Therefore, if the contours have not been properly restored and
the Phase I bond has been released, the remaining bond may not be adequate to cover the
additional reclamation that will be needed.

At the revegetation stage, the bond release process should generally take place during the
growing season. One important issue that can arise concerns the seed mixture that is used. Native
grasses are strongly preferred and non-native varieties may be used only if found to be both
desirable and necessary.\textsuperscript{386} On prime farmlands, the second phase bond cannot be released until
“the soil productivity ... has returned to equivalent levels of yield as nonmined land in the
surrounding area...”\textsuperscript{387} All siltation structures must also be removed before phase two bond
release. As with the first phase, it may be helpful to view the reclaimed land immediately after a rain
storm. This should give you a pretty good idea as to how well the soils and vegetation are holding
up against harsh weather.

At the final bond release stage, the success of revegetation will likely show how successful the
reclamation was overall. On eastern coal lands, the final portion of the bond cannot be released
until five years after successful revegetation and natural regeneration. During the five year period,
the operator may not seed, fertilize, irrigate, or perform other work designed to artificially enhance
the vegetation. On the western lands, the period for successful revegetation without artificial help
is ten years.\textsuperscript{388}

\textsuperscript{385} 30 CFR § 800.40(a),(b).
\textsuperscript{386} 30 U.S.C. § 1265(b)(19). (Emphasis added.)
\textsuperscript{387} 30 U.S.C. § 1269(c)(2).
The most difficult aspect of reclamation to evaluate is, not surprisingly, the post-mining surface and groundwater hydrology. Among other things, SMCRA requires coal operators to assure the protection of the quality and quantity of surface water systems from the adverse effects of mining; to restore the recharge capacity of the mined area to approximate pre-mining conditions; and, in Western states, to preserve the essential hydrologic functions of most alluvial valley floors. The success of reclaiming water systems is an issue that can be raised at every phase of bond release but be sure to raise the issue as early in the process as possible to maximize the chance that something effective will be done to restore the pre-mining hydrologic conditions.

If expert assistance is available to help you to evaluate the operator's reclamation success, use it. If not, be persistent in asking the state and federal agencies to supply you and the public with the information necessary to evaluate the post-mining hydrology. Are a sufficient number of wells being monitored over a sufficient period of time? Are there substantial inconsistencies in data from the same well? If so, question the accuracy of the monitoring devices. If the data suggest possible water quality or quantity problems, find out what will be done to correct them. Demand that the corrections be carried out and checked for effectiveness before the bond is released. If at one phase you find insufficient information about the success of this aspect of reclamation, ask that the application be denied or, at a minimum, that the operator provide the information before applying for the next phase.

Finally, bear in mind that once the entire bond has been released, the mine is no longer considered a surface coal mining and reclamation operation under SMCRA. At that point, the authority to conduct periodic inspections and to take enforcement action for violations expires. Accordingly, any problems that may develop after bond release will likely be borne not by the mining company but by the people who live in the communities around the mine.
Appendix A
Sample Freedom of Information Request

[Your name]

[Your address]

[Your telephone number]

[Your e-mail address]

[Date]

Director, [Name of State] Field Office
Office of Surface Mining Reclamation and Enforcement
Address – See Appendix H

Re: Freedom of Information Request

[Be sure this reference appears on your envelope too]

Dear Director:

In accordance with the Freedom of Information Act (FOIA), 5 U.S.C § 552, and the regulations at 43 CFR § 2.14, I hereby request copies of all documents which may relate in any way to—[Describe the information you are seeking. Try to keep your inquiry narrow without allowing the agency to sidestep pertinent information they may want to withhold For example, don't ask for every document relating to a particular permit or mine; ask for all documents that relate in any way to a particular problem you are facing at the mine — for example, water quality. Keep in mind that, despite its name, FOIA applies to documents, not information; unless the information you seek has been reduced to writing, the government does not have to supply the information. Finally, if you know something about a particular document you are looking for—for example, a memo from X to Y dated 1/2/87—ask for that document specifically.] As used in this request, "document" is intended to be construed broadly to encompass all memoranda, letters, e-mail messages, notes, records of meetings or telephone conversations, in any format (including electronic format) whether in preliminary or final form.

This request is made on behalf of—[state the name of your non-profit group if applicable, or name of others interested in information.] The disclosure of this information primarily will benefit the general public and will not primarily benefit the commercial interests of the individual requester.
because—[Explain how this information may benefit the public, as for example, in providing the public with information about groundwater supplies.] Accordingly, I request that the fees which may be charged for these documents be waived. [If you cannot meet the requirement for a fee waiver or if your request for a waiver is denied, you may want to consider reviewing the documents at the agency's office. This will save on reproduction costs by allowing you to copy only what you really need. You also may want to indicate in your request a maximum fee that you are willing to pay without prior approval of the fee, e.g., $10. This may help to expedite the response by avoiding delays associated with payment of fees.]

Should you decide to withhold any documents because you believe they are exempt from disclosure please set forth, in detail, the reasons you are claiming the exemption, a description of the document being withheld, and a description of that document's contents. The courts have required agencies to furnish this information when they withhold documents. Vaughn v. Rosen, 484 F.2d 820 {D.C. Cir. 1973).

If possible, please provide the information requested in electronic format, either to the e-mail address indicated above or on a CD-ROM. [Requesting information in electronic format may save you copying fees. If you would rather have paper copies, do not include this paragraph.] If you have any questions about this request please contact me immediately at the address or telephone number listed above. Thank you for your assistance in supplying this information. I look forward to your timely reply.

Very truly yours,

[your name]
APPENDIX B

Permit Application Checklist

A complete application for a mining permit should contain all information in this checklist. Missing information is grounds for denying the permit.

The sheer length of this list may seem intimidating, but you will be surprised with how much you can accomplish with a little perseverance. If you can't figure something out, ask the agency personnel for assistance. References are to SMCRA and to the federal regulations. State programs and regulatory agencies (RAs) are required to have provisions as stringent as SMCRA and as effective as the federal regulations. Accordingly, the federal standards are an appropriate benchmark against which to measure a permit application.

If a state claims the right to approve a permit's provision on the grounds that it is consistent with the state regulation, you should ask whether that provision ensures the same level of protection as the comparable federal standard. If it does not, you should immediately request that the Office of Surface Mining conduct an evaluation of the state program in accordance with the regulations at 30 C.F.R. § 733.12(a)(2). The procedures for requesting such an evaluation are set forth in Chapter Four of this handbook.

I. Legal, Financial, Compliance and Related Information

A. ☐ Name, address, phone number of applicant and type of business. 30 U.S.C. § 1257(b); 30 C.F.R. § 778.13

☐ If other than sole proprietorship:

☐ Names of each officer, partner, principal, director, or principal shareholder. 30 U.S.C. § 1257(b).

☐ All names under which applicant, partner or principal shareholder previously operated coal mining operations within five years preceding application. 30 U.S.C. § 1257(b).

☐ Statement of current and previous permits held within five years preceding application. 30 U.S.C. § 1257(b).
Name and address of all persons owning surface or mineral estate of property to be 
be mined and property contiguous to property to be mined. 30 C.F.R. § 778.13.

Mine Safety and Health Act (MSHA) numbers for all structures needing MSHA 
approval. 30 C.F.R. § 778.13(d).

Statement of all lands, options or bids for interest in land contiguous to permit 
area held by applicant. 30 C.F.R. § 778.13(c).


C. Whether applicant or subsidiary or affiliate has –

□ Had a permit suspended or revoked within five years preceding application. 30 C.F.R. § 

□ Forfeited a bond. If so, information regarding status and circumstances must be supplied. 

D. □ List all violations (if any) incurred by applicant, affiliate, etc. during three years preceding 
the application and the status of any such violations. 30 C.F.R. § 778.14. NOTE: Permit cannot 
be issued until all violations are corrected, all fines are paid, and all monies owed are paid to 
the Abandoned Mined Land Fund. 30 U.S.C. § 1260(c); 30 C.F.R. § 773.15(b)(1), (c)(7). See also 
30 C.F.R. § 773.15(b)(3), which prohibits issuance of permits to operators with a 
demonstrated pattern of willful violations.

E. □ Documentation of the operator's legal right to enter property to be mined. 30 U.S.C. § 
1257(b)(9).

F. Where the private mineral estate has been severed from the private surface, the permit must 
contain (30 C.F.R. § 778.15(b)) –

□ Written consent of surface owner to extract coal by strip mining method; or 

□ Copy of conveyance which allows such mining; or 

□ Documentation that state law allows such mining under the type of conveyance held by 
applicant. 30 C.F.R. § 778.15(b).

G. □ Information regarding lands within proposed permit area which are designated or subject 
to petition for designation as unsuitable for mining. (Mining operations are prohibited on 

H. □ The necessary waivers or approvals if mining is proposed within 300 feet of an occupied 
dwelling or 100 feet of a public road. 30 U.S.C § 1272(e)(4), (5).
I. Proof of publication of intent to begin mining operation in a newspaper of general
circulation once a week for four consecutive weeks. 30 U.S.C. § 1257(b)(6).

II. Environmental Resources

A. Information regarding climate, including seasonal precipitation, wind direction and
velocity, and seasonal temperature ranges. (This information is required only when
requested by the state. If you believe this information is important, for example to analyze
the operator’s erosion control plan, ask the state to require it.) 30 C.F.R. § 779.18.

B. Vegetation information adequate to predict potential for reestablishing vegetation. 30
   C.F.R. § 779.19.

C. Study of fish and wildlife and habitats within permit area. 30 C.F.R. § 780.16.

D. “The operation would not affect the continued existence of endangered or threatened
   species or result in destruction of adverse modification of their critical habitats, as
determined under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.).” 30 C.F.R. §
   773.15(j).

E. Soil survey including description and analysis of present and potential productivity of
   existing soils. 30 C.F.R. § 779.21. NOTE: If the applicant proposes to use overburden materials
to supplement or substitute topsoil, it must show that the resulting material is “equal to or
more suitable for sustaining vegetation than the existing topsoil.”

F. Description of pre-mining condition, capability, and productivity of land within permit area.
   30 C.F.R. § 779.11.

G. Maps prepared under supervision of and certified by engineer, showing:
   - Boundaries of lands and names of both surface and subsurface owners. 30 C.F.R. §
     779.24(a).
   - Boundaries of lands over which applicant has legal rights to mine. 30 C.F.R. §
     779.24(b).
   - Boundaries of lands proposed to be affected. 30 C.F.R. § 779.24(c).
   - Location of all buildings within 1,000 feet of permit area. 30 C.F.R. § 779.24(d).
   - Location of subsurface man-made features (such as power lines or pipelines). 30
     C.F.R. § 779.24(e).
   - Boundaries of reference areas for determining revegetation success. 30 C.F.R. §
     779.24(f).
Location of water supply intake and surface water discharges within affected hydrologic area. 30 C.F.R. § 779.24(g).

Public roads within 100 feet of permit area. 30 C.F.R. § 779.24(h).

Boundaries of any public parks, national trails, or wild and scenic rivers and locations of any cultural or historic resources near the permit area. 30 C.F.R. § 779.24(i).

Public or private cemeteries or Indian burial grounds within 100 feet of the permit area. 30 C.F.R. § 779.24(j).

Location of borings and core samples. 30 C.F.R. § 779.24(a)(1).

Location of surface water, springs and subsurface water which may be encountered during mining. 30 C.F.R. § 779.24(a)(6), (7).

Location and extent of previously mined areas within permit area. 30 C.F.R. § 779.24(a)(5), (8).

Location and dimension of existing and proposed dams, impoundments, spoil or waste piles, and air or water pollution control facilities. 30 C.F.R. § 779.24(a)(9).

Location and elevation of air and water quality monitoring stations. 30 C.F.R. § 779.24(a)(2).

Location of coal storage, cleaning and loading areas. 30 C.F.R § 780.14(b)(4).

Location of proposed topsoil, spoil and waste piles. 30 C.F.R. § 780.14(b)(4).

Location of water diversion, collection, conveyance, treatment, storage and discharge facilities. 30 C.F.R. § 780.14(b)(6).

Location of facilities for protecting wildlife. 30 C.F.R. § 780.14(b)(9).

Facilities for storage and handling of explosives. 30 C.F.R. § 780.14(b)(10).

Location of excess spoil fill areas. 30 C.F.R. § 780.14(b)(11).

H. Geological cross sections (prepared under the supervision of and certified by an engineer) showing:

- Nature, depth and thickness of coal seam, each stratum of overburden and the stratum immediately below the coal seam. 30 C.F.R. § 779.25(a)(3).

- All coal crop lines and the strike meaning and depth of coal to be mined. 30 C.F.R. § 779.25(a)(4).

- Anticipated final surface configuration of permit area. 30 C.F.R. § 780.18(b)(3); 30 C.F.R. § 784.13(b)(3).
I. Prime farmland investigation to determine if prime farmland exists in proposed permit area. 30 C.F.R. § 785.17(b). See Prime Farmlands, below.

III. Reclamation and operation

A. Blasting plan. 30 C.F.R. § 780.13.
   - Monitoring system.
   - Approval to blast within 500 feet of active underground mine.
   - Blasting parameters (patterns, size, number, depth, sequence, etc.).

B. Description of areas to be bonded. 30 C.F.R. § 780.14(b)(3).

C. Air quality monitoring program and fugitive dust control plan. 30 C.F.R. § 780.15(a).
   (Mandatory for coal mines west of 100th meridian with more than 1 million tons of annual production; otherwise at discretion of the regulatory authority).

D. Fish and wildlife protection and enhancement plan. In more detail: “Each application shall include a description of how, to the extent possible using the best technology currently available, the operator will minimize disturbances and adverse impacts on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, during the surface coal mining and reclamation operations and how enhancement of these resources will be achieved where practicable.” 30 C.F.R. § 780.16.

E. Reclamation plan including:
   - Detailed timetable for completing each step in reclamation. 30 C.F.R. §780.18(b).
   - Detailed cost estimate for reclamation with supporting data. 30 C.F.R. §780.18(b)(2).
   - Plan for backfilling, soil stabilization, compaction and grading. 30 C.F.R. §780.18(b)(3).
   - Plans for topsoil and subsoil removal, storage and replacement. 30 C.F.R. §780.18(b)(4).
   - Revegetation plan including a schedule, seed mixtures, planting methods, mulching techniques and measures for determining success. 30 C.F.R. §780.18(b)(5).
   - Plans to maximize the use and conservation of the coal resource. 30 C.F.R. §780.18(b)(6).
   - Description of how all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard will be disposed and a description of the contingency plans which have been developed to prevent sustained combustion of such materials. 30 C.F.R. §780.18(b)(7).
   - Measures used to seal or manage mine openings, holes or wells. 30 C.F.R. §780.18(b)(8).
   - Measures to assure compliance with Clean Air and Clean Water Acts. 30 C.F.R. § 780.18(b)(9).
F. Hydrology information and analyses including:
   - Baseline hydrologic data. 30 C.F.R. § 780.21(b).
   - Ground and surface water inventories. 30 C.F.R. § 780.21(b)(1), (2).
   - Determination of probable hydrologic consequences of mining. 30 U.S.C. § 1257(b)(11); 30 C.F.R. § 780.21(f). For small mines (less than 300,000 tons/year), this shall be prepared at the regulatory authority’s expense. 30 U.S.C § 1257(c).
   - Information on hydrology outside permit area but within impacted area. 30 U.S.C. § 1257(b)(11).
   - Information on alternative water sources available. 30 C.F.R. § 780.21(e).
   - Cumulative hydrologic impact assessment (prepared by the regulatory authority). 30 C.F.R. § 780.21(g).
   - Plan for protecting the hydrologic balance. 30 C.F.R. § 780.21(h).
   - Surface and groundwater monitoring plans. 30 C.F.R. § 780.21(i), (j).

G. Geology information in sufficient detail to determine:
   - Probable hydrologic consequences of mining. 30 C.F.R. § 780.22(a)(1).
   - All potentially acid and toxic-forming strata within permit area. 30 C.F.R. § 780.22(a)(2).
   - Whether reclamation can be accomplished as required by rules. 30 C.F.R. § 780.22(a)(3).
   - Must include at a minimum:
     - Areas and structural geology of permit and adjacent area, including lithology of the strata. 30 C.F.R. § 780.22(b)(1).
     - Narrative description of geology. Id.
     - Analysis of samples of test borings to provide the following:
       - Logs describing information from drill holes. 30 C.F.R. § 780.22(b)(2).
       - Chemical analysis of each stratum within overburden, the coal seam, and the stratum immediately below coal seam. Id.
       - Location and quality of subsurface water. Id.
     - NOTE: A written waiver of the requirement for test borings analyses may be obtained if other equivalent information is available to the regulatory authority. 30 C.F.R. § 780.22(d).

H. Plans describing the post-mining land use and how it will be achieved. 30 C.F.R. § 780.23(b). Must include comments of surface owners and state and local agencies. 30 C.F.R. § 780.23(c). NOTE: under 30 U.S.C. § 1265(b)(2), operators must restore the land to its pre-
mining use or a “higher or better” use. Operators frequently attempt to convert pre-mining forest lands to pasture. This is not a higher or better use.

I. ☐ Plans for all ponds, impoundments, banks and dams prepared by an engineer or geologist including:
   ☐ Description, map and cross section of each structure and its location. 30 C.F.R. §780.25(a)(1)(ii)
   ☐ Preliminary hydrologic and geologic information. 30 C.F.R. §780.25 (a)(1)(iii)
   ☐ Schedule when detailed design plans will be submitted. 30 C.F.R. §780.25 (a)(1)(v)
   ☐ A stability analysis if structure is 200 feet or higher or impounds more than 200 acre-feet of water. 30 U.S.C. § 77.216(a); 30 C.F.R. § 780.25(f).

J. ☐ If mining is proposed within 500 feet of an underground mine, measures which will assure adequate safety and environmental protection. 30 C.F.R. § 780.27.

K. ☐ Descriptions, including maps and cross sections, of stream channel or other diversions to be constructed within the permit area. 30 C.F.R. § 780.29. Diversions must meet stability and flood-control requirements. 30 C.F.R. § 816.43.

L. ☐ Measures to protect public parks or historic places which may be affected by the mining operations. 30 C.F.R. § 780.31.

M. ☐ Where a public road is to be relocated or mining will occur within 100 feet of a public road, measures to ensure that the interests of the public and the affected landowners are protected. 30 C.F.R. § 780.33.

N. ☐ Plans for excess spoil disposal sites describing geotechnical investigations, design, construction, operation, maintenance and removal if appropriate. 30 C.F.R. § 780.35(a).

Results of geotechnical investigations including:
   ☐ Character of bedrock. 30 C.F.R. § 780.35(b).
   ☐ Adverse geologic conditions. Id.
   ☐ Survey of all springs, seepage and groundwater flow. Id.
   ☐ Potential impact of subsidence due to past or future mining below fill. Id.
IV. Special Standards for Underground Mining

A. In most respects, the permit standards for surface mines are the same as those for underground mines. Separate regulations exist, however, at 30 C.F.R. Parts 783 and 784. Mostly, the regulations at Part 783 track the surface mining regulations at Part 779. Likewise, Part 784 tracks Part 780. If you are reviewing an underground mine application, you should check the underground mining regulations to be sure they apply. One important difference between surface and underground mine permit applications is that underground applications must include a survey showing whether subsidence might cause material damage or diminution of reasonably foreseeable uses of structures or renewable resource lands. 30 C.F.R. § 784.20(a). If such subsidence might occur, then the application must include a detailed subsidence control plan. 30 C.F.R. § 784.20(b). The subsidence control plan may provide important information about the potential impacts of mining on structures and land resources. Set forth below is a checklist for a subsidence control plan:

- Description of method of coal removal (for example, longwall or room-and-pillar). 30 C.F.R. § 784.20(b)(1).
- A map of underground operations which describes areas where planned subsidence will be employed. 30 C.F.R. § 784.20(b)(2).
- Description of physical conditions (for example, depth of cover, seam thickness, etc.) which may affect subsidence damage. 30 C.F.R. § 784.20(b)(3).
- Description of monitoring which will be necessary to determine when subsidence begins and how substantial it is. This information must be used to prevent, reduce or correct subsidence-related damage. 30 C.F.R. § 784.20(b)(4).
- Where subsidence is not planned, measures to be taken to minimize subsidence and related damage. 30 C.F.R. § 784.20(b)(5).
- Description of anticipated effects of planned subsidence. 30 C.F.R. § 784.20(b)(6).
- Description of measures to be taken to mitigate or remedy subsidence damage. 30 C.F.R. § 784.20(b)(7).

V. Special Requirements for Prime Farmlands
A. ☐ Reconnaissance inspection to determine whether prime farmland exists within permit area. 30 C.F.R. § 785.17(b).

B. ☐ If this inspection reveals that prime farmland historically used for cropland may be affected by mining, then a soil survey must be used to further identify and locate prime farmland. 30 C.F.R. § 785.17(b)(3). NOTE: Soil Conservation Service (SCS) soil surveys may be helpful in identifying prime farmlands.

C. ☐ If prime farmland is identified, the application must include:
   - Soil survey including a description of soil mapping units and representative soil profile. 30 C.F.R. § 785.17(c)(1).
   - Information on chemical and physical properties of soil as needed. Id.
   - Soil reconstruction plan. 30 C.F.R. § 785.17(c)(2).
   - Agricultural school studies or other scientific data for areas with comparable soils, climate, management, etc. 30 C.F.R. § 785.17(c)(3).
   - Information on pre-mining productivity of soil, including average yields of food, fiber, forage or wood products obtained under high levels of management. 30 C.F.R. § 785.17(c)(4).

D. ☐ Regulatory authority must consult with SCS, which shall review and comment on application and suggest revision as necessary. 30 C.F.R. § 785.17(d).

VI. Special Requirements for Mining on Alluvial Valley Floors (AVF) West of the 100th Meridian. 30 C.F.R. § 785.19.

A. ☐ If the land within a permit area is identified as an AVF and mining may impact the AVF or waters supplying it, then the application must include detailed surveys and baseline data as necessary to determine whether mining will interrupt, or preclude farming on, the AVF; whether it will cause material damage to the quantity or quality of water supplying the AVF; and whether the proposed monitoring system is adequate to measure compliance with the law and regulations. 30 C.F.R § 785.19(d).

B. ☐ Mining is not permitted if it will interrupt farming or materially damage the water supplying the AVF. 30 C.F.R § 785.19(e)(2).

C. ☐ Exclusions allowed if pre-mining use of AVF is undeveloped range not significant to farming or if farming interrupted is of such small acreage as to have a negligible impact. 30 C.F.R § 785.19(b)(2).

VII. Special Requirements for Mountaintop Removal Mining. 30 C.F.R § 785.14.
A. Mountaintop removal mining means surface mining activities “where the mining operation removes an entire coal seam or seams running through the upper fraction of a mountain, ridge, or hill... by removing substantially all of the overburden off the bench and creating a level plateau or gently rolling contour, with no highwalls remaining...” 30 C.F.R. § 785.14(b).

Mountaintop removal may only be allowed if the regulatory authority finds, in writing, that the following requirements are met in a complete application:

- The proposed post-mining land use will be industrial, commercial, agricultural, residential, or public facility (including recreational facilities) use. 30 C.F.R. § 785.14(c)(1).
- The proposed post-mining land use must be an equal or better public or economic use than the pre-mining use. 30 C.F.R. § 785.14(c)(i).
- The proposed post-mining land use must meet the requirements of 30 C.F.R. § 816.133(a) through (c) (there must be a reasonable likelihood of achievement of the use, the use must not present any public safety hazards, the use must not be impractical, unreasonable or inconsistent with existing land use policies or plans, the use must not involve unreasonable delay in implementation, and the use must not violate any federal, state, or local laws).
- The proposed post-mining land use must be generally reasonable and within the operator’s means to implement. It must also be compatible with adjacent land uses and supported by commitments from public agencies where appropriate. The application must include a schedule for post-mining land use reclamation, and the post-mining land use must be designed by a registered engineer. 30 C.F.R. § 785.14(c)(1)(iii).
- The requirements of 30 C.F.R. part 824 (the performance standards—see Appendix C) must be made a specific condition of the permit. 30 C.F.R. § 785.14(c)(3).
- The permit must be clearly identified as being for mountaintop removal mining. 30 C.F.R. § 785.14(c)(5).
- All other requirements of SMCRA and the federal regulations must be met. 30 C.F.R. § 785.14(c)(4).
- Variance from Approximate Original Contour (AOC): Variance from AOC is allowed if entire mountaintop removed; if the regulatory authority finds in writing that the proposed post-mining land use will be an industrial, commercial, agricultural, residential or public facility; and the proposed use constitutes an equal or better use, is
demonstrated likely to be achieved, and is consistent with local land use plans. 30 C.F.R. § 785.14(c).

VIII. Experimental Practice Variances

A. Variances from the standards established for all other mines allowed if the following conditions are met:

- They encourage advances in mining. 30 C.F.R. § 785.13(d)(1).
- They are potentially more environmentally protective or at least as protective as standard practices. 30 C.F.R. § 785.13(d)(2).
- They protect public health and safety. 30 C.F.R. § 785.13(d)(4).
- The experiment is monitored as necessary to evaluate its effectiveness. 30 C.F.R. § 785.13(b)(4).
APPENDIX C

Mine Inspection Checklist

The items in this checklist cover all major sources of environmental damage from strip mining operations. This list enables a citizen or citizen’s group to monitor the key points of a mining operation and highlights the legal protections which citizens may invoke. As with Appendix B, the length of the list may appear intimidating, but persevere and the most important pieces of this complex puzzle will eventually fall into place.

I. Topsoil. 30 C.F.R. § 816.22.

- Are at least six inches of topsoil (or best available subsoil) removed from area before drilling, blasting, and overburden removal? 30 C.F.R. § 816.22(a). (Note the difference between topsoil removal and leveling of bench for drilling.)
- Is the topsoil stockpiled (with signs) or immediately loaded into trucks and redistributed on backfilled areas? 30 C.F.R. § 816.22(c); 30 U.S.C. § 1265(b)(5).
- If stockpiled: 30 C.F.R. § 816.22(c); 30 U.S.C. § 1265(b)(5).
  - Is it protected from wind and water? Look for snow fence, vegetation, or other cover. Are there rills and gullies, or is it blowing in the wind?
  - Is it clearly marked?
- Topsoil replacement. 30 C.F.R. § 816.22(d).
  - Is the area scarified (broken up) immediately before topsoil is replaced to prevent slippage? (In some cases this can be done after topsoil is replaced.)
  - Is the replaced topsoil of uniform thickness?
  - Has soil been redistributed to avoid excessive compaction?
  - Has replaced topsoil been mulched or otherwise treated to protect against erosion?
  - If a topsoil substitute is not used, ask why the substitute is better than the original topsoil. 30 C.F.R. § 816.22(b).

II. Road Construction and Maintenance. 30 C.F.R. §§ 816.150-151.

- Was topsoil removed before construction? 30 C.F.R. § 816.22(a).
- Are mining roads located on benches, ridges, or other relatively flat or stable areas? Are they away from valley floors? 30 C.F.R. § 816.150(c), (d); 30 C.F.R. § 816.151(c)(1).
- Do all roads placed in stream beds have approval of regulatory authority? 30 C.F.R. § 816.150(d)(1).
- Are roads too steep to protect against erosion? Do they allow for proper maintenance?
  30 C.F.R. § 816.150(c), (e).
- Are roads adequately drained? 30 C.F.R. § 816.151(d).
  - Are drainage pipes and culverts placed where necessary?
  - Are there ditches parallel to the road?
- Are primary roads (those used for hauling with frequent access) surfaced with durable materials? 30 C.F.R. § 816.151(e).
- Are roads maintained? 30 C.F.R. § 816.151(d)
  - Is there standing water in the road bed?
  - Are there gullies in the road?
  - Are all ditches, culverts, and pipes cleared and maintained?
- Were design and construction of primary roads certified by a registered professional engineer? 30 C.F.R. § 816.151(a).

III. **Blasting**, 30 C.F.R. §§ 816.61-68.
- Was a pre-blast survey conducted? (Can be requested by residents within one-half mile of permit area.) Was a written report provided? 30 C.F.R. § 816.62.
- Was a blasting schedule published? 30 C.F.R. § 816.64(b).
- Was this schedule complied with? 30 C.F.R. § 816.64(a).
- Was blasting conducted only during daytime hours? 30 C.F.R. § 816.64(a).
- Did the operator provide audible warning prior to each blast? 30 C.F.R. § 816.66(b).
- Did the operator post blasting signs on roads along edge of blasting area? 30 C.F.R. § 816.66(a).
- Did flyrock travel more than one-half the distance to occupied dwellings? 30 C.F.R. § 816.67(c).
- Did blasting occur within 300 feet of a home, school, or other public building? 30 U.S.C. § 1272(e)(5).
Has blasting design been submitted to regulatory authority if blasting within 1,000 feet of any building or 500 feet from active or abandoned underground mine? 30 C.F.R. § 816.61(d).

IV. Backfilling and Grading. 30 C.F.R. §§ 816.102-107.

- Were slopes restored to “approximate original contour?” 30 C.F.R. § 816.102(a)(1).
  - Have highwalls and depressions been completely eliminated? 30 C.F.R. § 816.102(a)(2).
  - Does graded slope blend with surrounding terrain and pre-mining topography? 30 C.F.R. § 816.102(a)(3).
  - Are slopes between terrace benches no greater than 50 percent (22.5 degrees)? 30 C.F.R. § 816.71.
- Have all toxic materials (such as pyrite) been covered or treated to protect against acid or toxic mine drainage? 30 C.F.R. § 816.102(f).
- Have backfilled materials been stabilized? (Look for evidence of slides.) 30 C.F.R. § 816.106.
- Is final grading parallel to the contour of the land?
- Are rills and gullies in regraded areas deep enough to suggest possible reclamation failure?
- Do you see any steep slopes over 20 degrees (44.4%)? If so –
  - Is there any spoil on downslopes?
  - Land above highwall should not be disturbed unless there is prior approval by the regulatory authority. 30 C.F.R. § 716.2; 30 C.F.R. § 816.107.

V. Disposal of Excess Spoil. 30 C.F.R. § 816.71-74.

- Is spoil being disposed of within permit area on an approved site? 30 C.F.R. § 816.71(a).
- Is disposal site located on a moderately sloping, stable area? 30 C.F.R. § 816.71(c).
- Has all vegetation and topsoil been removed from the area prior to dumping of spoil? 30 C.F.R. § 816.71(e).
- Was design and construction of fill certified by a registered professional engineer? 30 C.F.R. § 816.71(b).
- Were diversions and underdrains installed as necessary to prevent water from infiltrating the fill materials? 30 C.F.R. § 816.71(f).
Do you see evidence of uncontrolled drainage over the surface of the fill? 30 C.F.R. § 816.71(f).

Are quarterly inspections by an engineer occurring throughout construction? 30 C.F.R. § 816.71(h).

Have keyway cuts (excavation to stable bedrock) or rock toe buttresses at toe (or bottom) of fill been constructed for slopes greater than 36 percent? 30 C.F.R. § 816.71(d).

VI. **Hydrologic System.** 30 C.F.R. §§ 816.41-47.

Is contribution of suspended solids to streamflow or runoff outside permit area being prevented to the extent possible using the best technology currently available? Is all surface drainage from the disturbed area (not including roads otherwise maintained or areas expressly exempted by the regulatory authority) passing through a sedimentation pond or other structure with a point source discharge? Was design and construction of structure certified by engineers? Are annual inspections occurring by a qualified registered engineer? (Report must be available at or near the mine site.) 30 C.F.R. § 816.46(b).

Are there spillways (open channels of non-erodible material) to catch any overflow from pond? Is the pond overflowing? 30 C.F.R. § 816.46(c)(2).

Are structures being properly maintained? Is sediment being removed from ponds if necessary? Do you see “islands” of sediment under the surface of the pond? If so, a violation may exist. 30 C.F.R. § 816.46(c)(1).

Are effluent limitations being met? (pH 6.0 - 9.0: iron 7.0 mg; TSS 70 mg.) (These limits do not apply during runoff from rain or during reclamation, so long as sediment pond is properly constructed and maintained.) Does the water below the sedimentation pond look clean and clear? 40 C.F.R. § 434.32.

Is there sufficient groundwater protection?

Is the operator submitting groundwater monitoring data at least quarterly? Is the data complete and in accord with the monitoring plan? 30 C.F.R. § 816.41(c)(1), (2).

Are monitoring devices properly installed and maintained? 30 C.F.R. § 816.41(c)(4).

Are approximate pre-mine on-site and off-site water supplies being restored? 30 C.F.R. § 816.41(c)(3)(i).
Is disturbance to hydrologic balance (quality and quantity) being minimized? 30 C.F.R. § 816.41(a).

Is there sufficient surface water protection?

Is the operator’s monitoring data being submitted quarterly? Is the data complete and in accord with the monitoring plan? 30 C.F.R. § 816.41(e)(1), (2).

Are monitoring devices properly installed and maintained? 30 C.F.R. § 816.41(e)(4).

Is disturbance to hydrologic balance being minimized? 30 C.F.R. § 816.41(a).

Are there any sedimentation ponds located in perennial streams? If so, does the operator have specific approval from the regulatory authority?

Is drainage from acid and toxic-forming materials being avoided? 30 C.F.R. § 816.41(f).

Has any private water supply been adversely affected (surface mines only)? If so, was it replaced? 30 C.F.R. § 816.41(h).

Has any discharge into an underground mine been approved? 30 C.F.R. § 816.41(i).

Stream channel diversions. 30 C.F.R. § 816.43.

Has any diversion received approval from the regulatory authority? 30 C.F.R. § 816.43(a)(1).

Do protections against flooding exist? 30 C.F.R. § 816.43(a)(2)(ii).

Is design capacity at least that of unmodified channel? 30 C.F.R. § 816.43(b)(2).

Has diversion been removed when no longer needed? 30 C.F.R. § 816.43(a)(3).

Impoundments. 30 C.F.R. § 816.49

Are all permanent impoundments approved and suitable for post-mining land use? 30 C.F.R. § 816.49(b).

Are all temporary impoundments other than sediment ponds approved? 30 C.F.R. § 816.49(c).

Were such impoundments designed by a registered engineer? 30 C.F.R. § 816.49(a)(3).

Have boreholes, shafts, wells, and auger holes been cased and sealed or otherwise managed to prevent pollution of surface and groundwater? 30 C.F.R. § 816.13.

VII. Coal Waste. 30 C.F.R. § 816.81-87.

Does an approved disposal area exist? 30 C.F.R. § 816.81
Was this disposal area designed and constructed to ensure stability and minimize impacts from leaching runoff? 30 C.F.R. § 816.83(a), (b).

Was disposal area designed and certified by engineer? 30 C.F.R. § 816.83(d).

Are quarterly inspections occurring with certified written reports by engineers? 30 C.F.R. § 816.83(d)(1), (2). Reports must be kept at or near the mine site. 30 C.F.R. § 816.83(d)(4).

Coal refuse piles.

Do coal refuse piles meet all Mine Safety Health Administration (MSHA) standards? 30 C.F.R. § 77.214, 77.215.

Has appropriate drainage control with underdrains been installed to prevent infiltration of water? 30 C.F.R. § 816.83(a)(3).

Was vegetative material removed before placement? 30 C.F.R. § 816.83(c)(1).

Terraces are allowed as long as the grade between terrace benches does not exceed 50 percent (22.5 degrees). 30 C.F.R. § 816.83(c)(2).

After final grading, was refuse covered with at least four feet of non-toxic material? 30 C.F.R. § 816.83(c)(4).

Coal waste impoundments.

Do impoundments meet all MSHA standards? 30 C.F.R. § 816.49(a)(2); 30 C.F.R. § 77.216.

Were impoundments designed and certified by an engineer? 30 C.F.R. § 816.49(a)(3).

Does sufficient “freeboard” (difference between top of structure and top of impounded material) exist to prevent overflow? 30 C.F.R. § 816.49(a)(5).

Does emergency spillway exist? 30 C.F.R. § 816.49(a)(9); 30 C.F.R. § 816.84(c).

Does impoundment have a stable foundation? 30 C.F.R. § 816.49(a)(6).

Is annual inspection occurring by an engineer with certified report? 30 C.F.R. § 816.49(a)(11).


VIII. Fish and Wildlife. 30 C.F.R. § 816.97.
Is best technology available being used to minimize impacts on wildlife? 30 C.F.R. § 816.97(a).

Mining operation cannot jeopardize endangered or threatened species or bald and golden eagles. 30 C.F.R. § 816.97(c).
   - Operator must promptly report finding of such species. 30 C.F.R. § 816.97(c).
   - Are any permit conditions which were imposed on the operation as necessary to protect endangered species being complied with?

Are power lines designed to protect raptors from electrocution? 30 C.F.R. § 816.97(e)(1).

Are fences and barriers designed to allow animal passage? 30 C.F.R. § 816.97(e)(3).

IX. Reclamation. 30 C.F.R. § 816.100
   - Are reclamation efforts (backfilling and grading, topsoil replacement, etc.) being conducted as contemporaneously as practicable with mining?


General questions.
   - Has the operator achieved a diverse, effective, and permanent vegetative cover at least equal to that of natural vegetation of the area? 30 C.F.R. § 816.111(a).
   - Are native species being used (or introduced species if approved and necessary to achieve post-mining land use)? 30 C.F.R. § 816.111(a)(1).
   - Is revegetation being carried out during first normal period for favorable planting? 30 C.F.R. § 816.113.
   - Are mulching and other soil stabilizing measures being used? 30 C.F.R. § 816.114.

Standards for measuring revegetation success:
   - Specific statistical techniques should be included in each program. 30 C.F.R. § 816.116(a)(1).
   - Ground cover, production, and stocking are deemed equal to pre-mining if at least 90 percent of success standard can be predicted to be achieved with 90 percent statistical confidence. 30 C.F.R. § 816.116(a)(2). Different standards apply where revegetation is accomplished with trees and shrubs. 30 C.F.R. § 816.116(b)(3).
Success for cropland, pastureland, and grazing land must be based on comparison with reference area or other standards approved by states. 30 C.F.R. § 816.116(b)(1), (2).

Periods of responsibility for revegetation must be met.

- For areas with at least 26 inches annual rainfall – five years after final augmented seeding, fertilizing, etc. 30 C.F.R. § 816.116(c)(2).
- For areas with less than 26 inches annual rainfall – 10 years after final augmented seeding, fertilizing, etc. 30 C.F.R. § 816.116(c)(3).
- Bond cannot be released until period of responsibility expires and revegetation criteria are met.

**XI. Special Standards for Underground Mines.**

As with the permitting rules, the performance standards for underground mines are found in a separate set of regulations at 30 C.F.R. Part 817. By and large these rules track the rules at Part 816.

As with the permitting standards, the main difference relates to subsidence control.

- Subsidence control. 30 C.F.R. § 817.121-122.
  - Has the operator adopted measures consistent with known technology to prevent subsidence from causing material damage? (Or, in the alternative, adopted a technology which provides for planned subsidence in a predictable and controlled manner?) 30 C.F.R. § 817.121(a).
  - Has the operator restored land materially damaged by subsidence? 30 C.F.R. § 817.121(c)(1).
  - Has the operator repaired, or compensated the owner of non-commercial buildings and dwellings damaged by subsidence? 30 C.F.R. § 817.121(c)(2).
  - Has the operator restored structures materially damaged by subsidence to the extent required by state law? 30 C.F.R. § 817.121(c)(2), (3).
  - Has the operator provided six months’ prior notice to owners and operators of surface property and structures of impending mining? 30 C.F.R. § 817.122.
  - No mining is permitted under public buildings, schools, churches, hospitals, or impoundments that have greater than 20 acre-feet capacity. 30 C.F.R. § 817.121(d).

**XII. Auger Mining.** 30 C.F.R. § 819.

- Operator must maximize recovery of coal. 30 C.F.R. § 819.13.
- Rules for sealing holes:
Holes must be sealed within 72 hours with impervious material, if discharging toxic drainage. 30 C.F.R. § 819.15(b)(1).

Holes must be sealed as contemporaneously as practicable if not discharging toxic drainage. 30 C.F.R. § 819.15(b)(2).

Holes need not be sealed only if the regulatory authority determines that sealing will cause hazard to environment and the drainage meets all effluent standards. 30 C.F.R. § 819.15(c).

XIII. Special Standards for Alluvial Valley Floors. 30 C.F.R. § 822.

Mining may not interrupt farming on AVFs unless –

Pre-mining use was undeveloped rangeland insignificant to farm land, 30 C.F.R. § 822.12(b)(1); or

The acreage affected is so small that interruption would have negligible impact on farm’s production. 30 C.F.R. § 822.12(b)(2).

Mining may not cause material damage to quantity or quality of water in surface or underground systems supplying AVFs unless exempted as per above. 30 C.F.R. § 822.11.

Operator must maintain a monitoring system for all AVFs to assure compliance with standards until all bonds released. Data and analysis must routinely be made available to regulatory authority. 30 C.F.R. § 822.13.

XIV. Special Standards for Prime Farmlands. 30 C.F.R. § 823.

Soil must be removed before drilling, blasting, or mining in sufficient quantity to assure a minimum depth of four feet after replacement. 30 C.F.R. § 823.14(b).

Lesser depth is allowed if natural soils have two subsurface horizons that inhibit root penetration (minimum to that depth). 30 C.F.R. § 823.14(b).

Greater depth is required if necessary to restore productive capacity of soil. 30 C.F.R. § 823.14(b).

Has operator separately removed and stockpiled A, B, and C horizons? Some mixing of B and C horizons is allowed if equal or more favorable for plant growth. 30 C.F.R. § 823.12(c)(2).

Soil reconstruction specification.

Do specs include, at a minimum, physical and chemical characteristics of reconstructed soils; soil descriptions containing soil horizon depths, soil densities, and pH; and other specifications as necessary to assure equal or higher yields than non-mined prime farmland? 30 C.F.R. § 823.14(a).

Is replacement and regrading of soils by horizons being carried out in such a way as to ensure uniform depth and to avoid excessive compaction? 30 C.F.R. § 823.14(c). Does replaced A horizon equal or exceed in thickness original surface soil layer? 30 C.F.R. § 823.14(e).

Is soil being stabilized with the vegetative cover after replacement? 30 C.F.R. § 823.15(a).

Standards for judging 100 percent restoration of soil productivity.

By reference to crop yield of local farms, 30 C.F.R. § 823.15(b)(7)(i); or From average county yields. 30 C.F.R. § 823.15(b)(7)(ii).

Based on crops most commonly produced on surrounding prime farmland. 30 C.F.R. § 823.15(b)(6).

**XV. Special Standards for Mountaintop Removal Mining.** 30 C.F.R. § 824.

Is the final grade of the mountaintop less than 20 percent? 30 C.F.R. § 824.11(a)(7).

Does water drain toward the middle of the disturbed area, not down the side of the mountain? 30 U.S.C. § 1265(c)(4).

Do the outslopes (the slopes below the coal seam) of the area exceed 50 percent without the approval of the regulatory authority? If so, a violation exists. 30 C.F.R. § 824.11(a)(8). See box in Chapter 6 for information on measuring slopes.

Is a sufficiently wide outcrop barrier retained so as to prevent slides? 30 C.F.R. § 824.11(a)(6).

Is damage to streams downslope from the disturbed area being prevented? 30 C.F.R. § 824.11(a)(9).

Was the mining permit reviewed by the regulatory authority within 3 years of issue? 30 U.S.C. § 1265(c)(6).

Other than the approximate original contour requirement, are all other standards of the law being met? 30 C.F.R. § 824.11(a)(5).

Is the post-mining land use requirements of 30 C.F.R. § 816.133 being met? (There must be a reasonable likelihood of achievement of the use, the use must not present any public safety hazards, the use must not be impractical or unreasonable or inconsistent with
existing land use policies or plans, the use must not involve unreasonable delay in
implementation, and the use must not violate any federal, state, or local laws). 30 U.S.C. §
824.11(a)(4).

☐ Is all waste and acid-forming or toxic-forming materials, including the strata immediately
below the coal seam, covered with non-toxic spoil to prevent pollution and achieve the
approved post-mining land use? 30 C.F.R. § 824.11(a)(10).
APPENDIX D

Bond Release Checklist

The bond release proceeding provides citizens with their last chance to use SMCRA to get coal operators to bear the full cost burden of environmental damage resulting from the mining operation. Therefore, citizens should take care to satisfy themselves as to all the items on the checklist, and to make any complaints before the three sets of deadlines run out.

I. Phase I Release. 30 C.F.R. § 800.40(c)(1).

- Has the land been returned to the approximate original contour, with all highwalls, spoil piles, and depressions eliminated? 30 C.F.R. § 816.102(a)(1), (2). Have all unnecessary roads been eliminated? 30 C.F.R. § 816.150(f).
- Has the material been backfilled to prevent slides? If backfilled on a steep angle, have independent technical analyses been performed to determine whether the backfilled area achieves a 1.3 static safety factor? 30 C.F.R. § 816.102(a)(3).
- Have all toxic and acid-forming materials been adequately covered? 30 C.F.R. § 816.102(f).
- Has the recharge capacity of the mined area been restored to approximate pre-mining conditions? 30 U.S.C. § 1265(b)(10)(D).
- Have water quantity and quality been preserved? (Compare the pre-mining information from the monitored wells with the current information from those same wells. You may also want to look at data during the mining operation.) 30 C.F.R. § 816.41. If the water quality or quantity (including artesian pressure) has been diminished, has the applicant provided a permanent source of replacement of the same quality and quantity? Can that water be obtained at the same or lower cost? (Thus, if pumping costs are higher for the new source, the replacement should not be deemed equivalent. 30 U.S.C. § 1258(a)(13).)

NOTE: Although efforts are under way to amend the law, the replacement obligation does not apply to underground mining operations. Nonetheless, underground operators are required to assure the protection of water quality and quantity, and the rights of other water users. 30 U.S.C. § 1258(a)(13). Thus, while you may not be eligible for water...
replacement, you might be able to use SMCRA to demand appropriate remedial measures to restore your water supply.

- Have the essential hydrologic functions of alluvial valley floors at Western mines been preserved? 30 C.F.R. § 822.11.
- Has topsoil been replaced, or if not replaced, has sufficient topsoil been stockpiled to cover the reclaimed area to a suitable depth? 30 C.F.R. § 816.22(d).
- Have all boreholes, shafts and wells (other than monitoring wells) been cased and sealed or otherwise managed? 30 U.S.C. § 1265(b)(10). For underground mines, have entryways and other openings been sealed? 30 U.S.C. § 1266(b)(2).

II. Phase II Release. 30 C.F.R. § 800.40(c)(2).

- Has a diverse and effective vegetative cover been established? 30 U.S.C. § 1265(b)(19).
- Have native plant species been used, or, if non-native species were introduced, was there a showing that they were necessary and desirable? 30 U.S.C. § 1265(b)(19).
- Has the applicant agreed to hold a sufficient bond to cover the costs of re-establishing vegetation should the current cover fail? 30 U.S.C. § 1269(c)(2).
- Are the reclaimed lands contributing suspended solids to streamflow or runoff outside the permit area in excess of the standards set by law? If so, phase II may not be released.
- Have all siltation structures been removed (except those approved as permanent impoundments)? 30 U.S.C. § 1265(b)(10)(ii).
- For prime farmlands, has soil productivity been returned to equivalent levels of yield as non-mined land of the same soil type in the surrounding area? (If not, Phase II bond cannot be released.) 30 U.S.C. § 1269(c)(2).
- NOTE: The hydrology questions from Phase I (D, E, and F) should be asked again here.

III. Phase III Release. 30 C.F.R. § 800.40(c)(3).

- Has the land been restored to a condition capable of supporting pre-mining uses, or higher and better uses? 30 U.S.C. § 1265(b)(2). Has the post-mining land use been achieved?
- Has the applicant achieved successful revegetation for the statutory period (5 years, or 10 years in areas with average precipitation of 26 inches per year or less) without augmented seeding, fertilizing, irrigation, or other work? An exception applies for long-term, intensive post-mining agricultural uses. 30 U.S.C. § 1265(b)(20).
For underground mining, does a continuing potential for subsidence exist? If so, you may want to ask that a sufficient bond be retained to pay for the costs of restoring the land and any structures that may be eligible for restoration.

Have all requirements of state and federal laws been met?

NOTE: be sure to review here one last time the crucial hydrology questions from Phase I (D, E, and F).
APPENDIX E
Sample Citizen Complaint

[Your Name]
[Your Address]
[Your Telephone Number]
[Your e-mail address]

[Date]

Director, [Name of State] Field Office
Office of Surface Mining Reclamation and Enforcement
[Address - See Appendix I]

Director, [State Agency Office]
[Address – See Appendix J]

Re: Citizen Complaint of [Your Name]

Dear Directors:

In accordance with Sections 517(h) and 521(a) of the Surface Mining Control and Reclamation Act, I respectfully request that you conduct an inspection without prior notice to the operator of the _______ mine, located in _________ County. The _____ mine is operated by _______.

I am requesting this inspection because of the conditions or practices described below which I believe have resulted in violations of the following requirements of the law:

[Briefly describe the conditions at the mine site that you believe are resulting in violations of the law.]

Cite the appropriate provisions of the state and/or federal law if you know them. Be sure to request that the inspection be conducted immediately if any condition at the mine site is causing an imminent danger to the health and safety of the public, or a significant, imminent harm to the environment. If such a
condition exists, the inspector is required to close that portion of the mine causing the imminent harm even if no violation of the law is found.

I further request that the inspector issue a notice of violation [or cessation order, if appropriate] to the operator and that the notice require the operator to take appropriate remedial action including: [Briefly state what action you believe may be necessary to abate the violation and avoid the harm to people and the environment.]

By this letter I am notifying both the State agency and OSM of this complaint. Should the State fail to issue a notice of violation to the operator within 10 days, I request that OSM conduct an inspection and take appropriate enforcement action as described above.

I hereby waive my right to confidentiality and request the right to accompany the inspector on the inspection of the mine site. You can reach me at the address and telephone number listed above. [Alternatively, you may ask that the state and federal agencies maintain your confidentiality. If asked, they are required to do so.]

In accordance with 30 CFR § 842.12(d), I request that OSM [or the State] report the results of any inspection within 10 days from the date of the inspection, or if OSM chooses not to inspect, to explain the reasons for that decision, within 15 days from the date that this letter is received.

Very truly yours.

[Your Name]
APPENDIX F

Sample Request for Withdrawal of State Approved Program

[Use letterhead with the name and contact information (including e-mail address) for the person or organization primarily responsible for this request]

[Date]

[Name of OSM Director], Director
Office of Surface Mining
1951 Constitution Avenue NW
Washington, DC 20240

Re: Request for Withdrawal of All or Part of the [name of State] Approved Program

Dear [Mr./Ms. Name of OSM Director]:

The [name of individuals or organizations filing the request] believe that the State of [name of State] is acting in violation of its approved State program and that such violations are the result of the State’s failure to enforce its program effectively. Accordingly, and in accordance with 30 U.S.C. §521(b) and 30 C.F.R. §733.12, this letter respectfully requests that OSM investigate the [name of State]’s approved State program to determine whether these allegations are correct and whether the State is implementing, administering, enforcing, and maintaining its program as required by the Surface Mining Control and Reclamation Act (SMCRA).

In support of this request the undersigned offer the following information and evidence. [Concisely describe the facts that lead you to believe that the State program is not being implemented or enforced in accordance with SMCRA. You should be prepared to offer specific evidence that the State has repeatedly failed to administer or enforce particular aspects of the program and you should attach documentation that supports your claim. For example, you might indicate that the State has repeatedly failed to prepare a cumulative hydrologic impact assessment for permit applications as required by 30 U.S.C. §507(b)(11). To support this claim you should identify specific permit applications where the State failed to meet this obligation.]

As a result of the State’s failure to implement and enforce the State program effectively, and as required by 30 C.F.R. §733.12(g)(2)(i), we respectfully request that the Secretary withdraw approval of all or part of the [name of State]’s approved State program and substitute direct federal implementation and enforcement.

If you would like additional information or clarification of the reasons for this request we are happy to meet with you or provide supplemental information to support this request.

Respectfully submitted,

[Include the names and contact information for all persons making this request.]
APPENDIX G
Glossary of Mining Terms


Acid mine drainage (AMD): Toxic drainage that usually results from exposure of pyritic materials to air and water. The acid dissolves minerals in the rocks, further degrading the quality of the drainage water.

Administratively complete application: a permit application "which the regulatory authority determines to contain information addressing each application requirement of the regulatory program and to contain all information necessary to initiate processing and public review." 30 C.F.R. § 701.5.

Alluvial valley floor (AVF): "The unconsolidated stream-laid deposits holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities...." 30 U.S.C. § 1291(1); See 30 C.F.R. 701.5.

Approximate Original Contour (AOC): A key mandatory reclamation standard in SMCRA requiring that the surface configuration achieved by backfilling and grading of a mined area, including any terracing or access roads, closely resembles the general surface configuration of the land prior to mining and blends into and compliments the drainage pattern of the surrounding terrain. All highwalls and spoil piles must be eliminated. 30 U.S.C. § 1291(2).

Aquifer: A stratum or zone below the surface of the earth that is capable of producing water, as from a well.

Backfilling: The filling in again of a place from which the rock or ore has been removed.

Bench: The horizontal step or floor along which coal is quarried.

Box cut: The initial cut driven into the land, where no open side exists; this results in a highwall on both sides of the cut. This term applies to cuts made into the side of a mountain (countour mining) as well as cuts into flat ground (area mining).

Broad form deed: A contract format historically used by coal operators to gain favorable terms of mineral rights for themselves. The contract commonly used to negotiate with uneducated landowners who did not understand the terms of the contract.

Bucket-wheel excavator (BWE): An excavating device that uses buckets around the periphery of a vertically-mounted wheel to scoop spoil material out of the ground and load it onto a conveyor belt.

Cessation Order (CO): An order from a state inspector to discontinue operation of a mine. This occurs when the state receives word that an operator is doing something that will effect public health or safety or when the operator refuses to fix a violation. See 30 C.F.R. 840.11.

Clean Water Act (CWA): A body of law that seeks to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters. 33 U.S.C. 1251.
**Clinker:** (sometimes called "scoria") Material usually reddish in color, overlying a burned coal bed, and usually comprised of baked clay, shale, or sandstone which has weathered to gravel-sized pieces. Clinker is often used for road surfacing. (there are two definitions going here: one is baked rock above burnt out coal, primarily in the West. The other is a pre-cursor to cement, formed when the material is baked in the kiln. One is natural, the other is synthetic, and the synthetic one is used for road surfacing.) See https://www.dmr.nd.gov/ndgs/ndnotes/ndn13_h.htm.

**Coal preparation plant:** A plant for the cleaning and sizing of the raw coal before it is loaded into railway cars or trucks. See also 30 CFR 701.5.

**Coal mine waste:** The material left over following the cleaning and sizing of coal at a preparation plant. 30 CFR 701.5.

**Compaction:** An increase in soil density caused by mechanical handling of soil. Excessive compaction inhibits plant growth. 30 CFR 701.5; http://arri.osmre.gov/PDFs/Pubs/FRA_No.3.pdf.

**Continuous mining:** Mining in which a continuous mining machine cuts or rips coal from the face and loads it onto conveyors or shuttle cars. This eliminates the need for shooting and drilling.

**Cumulative hydrologic impacts (CHIA):** By using the probable hydrological consequences the permittee is then to provide the probable collective “impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability.” 30 U.S.C. 1257(b)(11).

**Dip:** The angle at which a bed, stratum, or vein is inclined from the horizontal.

**Dragline:** A mechanical excavating device that casts a very large rope-hung bucket a considerable distance from its base and drags it back toward itself along the ground with a second rope thereby collecting large quantities of spoil material. The material is then elevated and dumped on a spoil pile or into a pit. Draglines are among the largest pieces of mining equipment used by mine operators.

**Effluent:** Waste in the form of a liquid, solid, or gaseous product that is discharged or emerges from a process.

**Environmental Assessment (EA):** A public document by a Federal agency that provides sufficient evidence and analysis to determine whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI). The EA should include brief discussions of each of the elements required in an EIS. See 40 CFR 1508.9.

**Environmental Impact Statement (EIS):** A detailed written statement by an agency as required by NEPA for all major Federal actions significantly affecting the quality of the human environment that specifies the environmental impacts of the proposed action, unavoidable adverse environmental effects if the plan is implemented, alternatives to the plan, and other related information. See 42 U.S.C. 4332(2)(C).

**Face:** The solid surface of the unbroken portion of the coal bed at the advancing end of the working place.

**Fill:** Manmade deposits of natural earth materials (e.g., rock, soil, and gravel) and waste materials (e.g., tailings or spoil from dredging) that is used to fill an empty space, such as an old excavation site or chamber in a mine.

**Freedom of Information Act (FOIA):** Government Agencies are required by law upon request to share any documents, including electronic documents, with the public. The agency may charge reasonable fees in
order to supply the information. However, the agency may deny a citizen's request because the document falls within an exception (e.g. trade secrets, national security, medical records, etc.). See 5 U.S.C. 522(b).

**Front-end loader:** A tractor loader with a digging bucket mounted at the front end. A front-end loader both digs and dumps from the front.

**Gob:** Waste coal, rock pyrites, slate or other unmerchantable material extracted during underground mining and deposited either underground or on the surface in gob piles.

**Head-of-hollow fill:** (see Valley fill)

**Highwall:** "The face of the exposed overburden and coal seam in an open cut of a surface coal mining activity or for entry to underground mining activities." 30 CFR 701.5.

"Hot": A term applied to a mine or part of a mine that generates methane in considerable quantities.

**Hydrologic balance:** The maintenance of the quality and quantity of surface and ground water within the mine permit area and the surrounding areas by preventing toxic contamination and dewatering. See 30 U.S.C. 1265(b)(10).

**Impoundment:** A reservoir in which slurry is collected and sediments settle to the bottom.

**Intermittent stream:** A stream that flows in direct response to a precipitation event or only at certain times of the year but which is dry during much of the year.

**Last-cut lake:** A permanent impoundment created when an area mine operator leaves the last cut empty instead of depositing the box cut spoil in the last cut.

**Longwall mining:** A system of mining on straight faces up to 400 yards in length. A power machine shaves the coal along the face over the entire length of a panel designated for mining. Self-advancing hydraulic lifts are used to hold the ceiling in place until mining is completed on a given panel. The lifts are then removed and the ground is permitted to subside. (add cite)

**Mountaintop removal mining:** A coal extraction technique in which entire mountaintops are removed and the underlying coal seam is mined using surface mining methods.

**Mulch:** Material (usually organic) used to control erosion and retain soil moisture. 30 CFR 701.5.

**National Environmental Policy Act (NEPA):** A body of law designed to encourage “productive and enjoyable harmony between man and his environment; to promote efforts” that will prevent or eliminate harm to the environment and to understand the ecological systems and natural resources important to the nation. This act also established a Council on Environmental Quality. 42 U.S.C. 4321.

**Notice of Violation (NOV):** Issued lieu of a cessation order in order to inform an operator that a rule, law, or permit condition has been violated and to begin corrective action. NOVs may result in monetary penalties or criminal prosecution.

**OSM:** The Office of Surface Mining Reclamation and Enforcement is a federal agency created by SMCRA to implement, oversee, and enforce the law. 30 U.S.C. § 1211.
**Outcrop:** Area where the coal seam is exposed on the surface of the land.

**Overburden:** Material of any nature, consolidated or unconsolidated, that lies on top of a deposit of useful materials, ores or coal, especially those deposits that are mined from the surface by open cuts.

**Percolation:** Refers to the downward movement of water in the ground.

**Perennial Stream:** A stream or river with continuous flow in all or part of its bed all year round.

**Performance Standards:** Operators must comply with certain regulations that attempt to conserve coal resources and restore the land to its pre-mining or better condition.

**Permit area:** The area of land approved in the permit application that will be used for mining purposes. This includes both mining itself and any activity connected to mining (e.g., loading coal for commerce). The area also includes land adjacent to the mine site which is incidental to mining activities (e.g., roads, dams, storage areas, etc.). See 30 C.F.R. 701.5; See also 30 C.F.R. 700.5.

**pH:** A term to describe the acidity of a solution. A pH of 7 is neutral. Each whole number lower describes a solution ten times more acidic than the previous number. Higher whole numbers indicate a solution more basic by a factor of ten.

**Planned subsidence:** Subsidence that occurs when all of the coal is removed during underground mining. Because subsidence is inevitable in this situation, and because it occurs quickly after mining is completed, the operator is able to plan for subsidence and reclaim that surface. Planned subsidence is most common in conjunction with longwall mining.

**Pre-blast survey:** A inspection conducted prior to blasting by either the operator of the mine or by an independent inspector in order to determine the physical state of a property prior to blasting. This inspection allows both operators and citizens to identify damage caused by blasting.

**Prime farmland:** "Those lands which are defined by the Secretary of Agriculture in 7 CFR 657... and which have historically been used as cropland."

NOTE: The regulations at 7 C.F.R. § 657 provide for an inventory of all prime farmlands. This inventory must be published on a map of a specified scale by the Soil Conservation Service. Information from these maps should be available at your local SCS office. To locate the SCS office nearest you, visit the following website:
http://offices.sc.egov.usda.gov/locator/app. Click on your state, then on your county, and the website will tell you the address and phone number of your local SCS office. Also, the rules define "cropland" as "lands used for the production of adapted crops for harvest, alone or in rotation with grasses and legumes..." They further define the phrase "historically used for cropland" as (a) "lands that have been used for cropland for any 5 years out of the 10 years immediately preceding the acquisition... of the land for... mining..." or (b) "lands which the regulatory authority determines, on the basis of additional cropland history of the surrounding lands and lands under consideration,... is clearly cropland..." or (c) "lands that would likely have been used as cropland for 5 out of the last 10 years immediately preceding such acquisition...but for the... ownership or control of the land unrelated to the productivity of the land."

See 30 CFR 701.5.
Probable hydrologic consequences (PHC): A survey of the “hydrologic regime, quantity and quality of water in surface and ground water systems including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas” so that the cumulative effects of mining may be predicted. 30 U.S.C. 1257(b)(11).

Pyrite: Iron disulfide (FeS2). (Fool's gold.) Pyrite deposits frequently occur near coal seams. When the pyrite mixes with water and air, a chemical reaction takes place which produces sulfuric acid. This is a significant source of acid mine drainage.

Recharge capacity: The ability of the soils and underlying materials to allow precipitation and runoff to infiltrate and reach the zone of saturation or water table. 30 CFR § 701.5.

Red dog: Solid waste from mining or coal processing that has burned. Usually reddish in color and used for road surfacing.

Reference area: A land unit maintained under appropriate management for the purpose of measuring vegetation ground cover, productivity and plant species diversity that are produced naturally or by approved crop production methods. Reference areas must be representative of geology, soil, slope and vegetation in the permit area. 30 CFR § 701.5.

Refuse: Solid waste from a coal preparation plant.

Retreat mining: A method of underground mining in which the pillars are “robbed,” or removed, and the ground is allowed to subside as the miners move out toward the mine entrance. Also known as retreating system.

Riprap: Large broken rocks or boulders, often placed along embankments and dam faces to control erosion.

Rob the pillars: The mining of coal pillars left to support the roof during development mining, often resulting in cave-ins.

Room-and-pillar: Method of mining where flat lying beds of coal are mined in rooms separated by pillars of undisturbed rock left for roof support.

Safety factor: "The ratio of the available shear strength to the developed shear stress or the ratio of the sum of the resisting forces to the sum of the loading or driving forces, as determined by accepted engineering practices." 30 CFR § 701.5. A static safety factor of one on a slope means that the slope is extremely vulnerable to slides because the forces holding the material up equal those trying to bring it down.

Scalped: The process by which surface vegetation is removed prior to mining.

Scarification: The loosening or stirring of the surface soil without turning it over. Scarification can help reduce erosion by making it easier for the soil to absorb water.

Scraper: A machine used to remove and replace topsoil and other soil materials during mining and reclamation. Scrapers can cause severe compaction of the soil.

Sedimentation ponds: ponds designed to hold polluted stream water in one place long enough for suspended solids such as soil particles to drop out of the water and settle on the bottom of the pond. See 30 C.F.R. 816.46(c).
**Sink hole:** A hole or depression in the surface of the ground, caused by underground excavations or erosion of vertical support. Sink holes can be as much as 15 feet deep.

**Slurry:** Liquid waste composed of fine rock particles and water that is produced when coal is washed.

**Soil horizons:** A layer of soil that is characteristically distinct from adjacent layers. For example, it is made up of a different texture, structure, or color than the adjacent layer. Horizons are usually designated by numerals or capital letters (e.g., Horizon A and Horizon B).

**Soil profile:** A vertical section of soil that displays all of the soil’s layers. Layers are often called horizons.

**Soil:** The overburden or non-ore material that has been removed to gain access to the mineral.

**Strata:** Beds or layers of rock that are visually separable from other layers.

**Stream buffer zone rule:** A federal regulation stating that land within 100 feet of a stream cannot be disturbed by mining unless the operator can prove it will not adversely affect the water quality and quantity of the stream.

**Stripping ratio:** The unit amount of spoil or overburden that must be removed to gain access to a unit amount of coal, generally expressed in cubic yards of overburden to raw tons of coal.

**Subjacent support:** Support by the earth that lies underneath the land under consideration. BLACK’S LAW DICTIONARY, WESTLAW ONLINE VERSION.

**Subsidence:** Surface collapse or depression caused by underground excavations.

**Subsidence control plan:** A permitting requirement for underground mines; the plan must identify structures and renewable resource lands above the mine and discuss methods to prevent or reduce damages from subsidence to those structures and lands. It also must describe how the operator will monitor subsidence. See 30 C.F.R. § 784.20.

**Swell Factor:** The tendency of soils and overburden on being removed from their natural, compacted beds to increase in volume due to an increase in the space between soil particles.

**Thalwegs** The line of greatest slope along the bottom of a valley. The thalweg thus marks the natural direction of a watercourse.

**Topsoil:** The surface portion of the soil, sometimes called the A-horizon. Topsoil will generally range from 6 to 20 inches in depth.

**Valley fill:** A fill structure consisting of any material other than coal waste or other organic material that is placed in the upper most area of a valley that is steeper than 20 degrees.
Appendix H
Local and State Organizations
That Work with SMCRA

ALABAMA
Black Warrior Riverkeeper
712 37th Street South
Birmingham, AL 35222
P) (205) 458-0095
F) (205) 458-0094
www.blackwarriorriver.org
Mission: To protect and restore the Black Warrior River and its tributaries. Currently fighting permits for improperly located coal mines and working to hold polluting coal mines accountable.

Friends of Hurricane Creek
P.O. Box 40836
Tuscaloosa, AL 35404
P) (205) 233-1680
F) (205) 507-0867
www.hurricanecreek.org
Mission: To promote the protection and rehabilitation of Hurricane Creek and its watershed.

ALASKA
Alaskans for Responsible Mining
810 N Street #203
Anchorage, AK 99501
P) (907) 277-0005
F) (907) 277-0990
http://www.reformakmines.org/

Cook Inletkeeper
308 G Street, Suite 219
Anchorage, AK 99501
P) (907) 235-4068
F) (907) 235-4069
ILLINOIS

Illinois Sierra Mining Committee
Joyce Blumenshine, Acting Chair
2419 E. Reservoir
Peoria, IL 61614-8029
P) (309) 688-0950
joblumen@yahoo.com

Committee members are involved in fighting longwall, room & pillar, and strip mines permits.

KENTUCKY

Kentuckians For The Commonwealth
P.O. Box 1450
London, Kentucky 40743
P) (606) 878-2161
F) (606) 878-5714
info@kftc.org
http://www.kftc.org

KFTC works for a new balance of power and a just society. Its Canary Project is building awareness about the dangers from coal, developing skills we need to protect our communities and homes, and working for a new economy to sustain, instead of exploit, our communities.

Sierra Club, Cumberland Chapter
P.O. Box 1368
Lexington, KY 40588-1368
P) (859) 296-4335
www.kentucky.sierraclub.org

NORTH DAKOTA

Dakota Resource Council
P.O. Box 1095
Dickinson, ND 58602
P) (701) 483-2851
F) (701) 483-2854
Mission: To form enduring, democratic local groups that empower people to influence decision-making processes that affect their lives.

OHIO

Meigs Citizens Action Now!
48360 Carmel Road
Racine, Ohio 45771
P) (740)-416-2694
meigscan@yahoo.com
www.meigscan.org
A grassroots community group who reject the unfair burden of toxic industries sited in their community and embraces a future of economic prosperity that keeps our soil and water—and our children—healthy.

PENNSYLVANIA

Foundation for Pennsylvania Watersheds
9697 Loop Rd.
Alexandria, PA 16611
P) (814) 669-4244
F) (814) 669-1323
www.wpawp.org
A grant-making foundation that invests in efforts to protect healthy, natural streams around the state.

Mountain Watershed Association
P.O. Box 408
Melcroft, PA 15462
P) (724) 455-4200
F) (724) 455-4201
www.mtwatershed.com
A non-profit, tax-exempt community-based Pennsylvania corporation concerned with the preservation, protection, and conservation of the Indian Creek Watershed and surrounding areas.

TENNESSEE
Save Our Cumberland Mountains
Main Office
P O BOX 479
Lake City, TN 37769
P) (865) 426-9455
F) (865) 426-9289
www.socm.org

Mission: To assist Tennessee residents to protect, defend and improve the quality of life in their communities and across the state: including stopping the devastation caused by mining.

United Mountain Defense
Knoxville, TN
P.O. Box 20363
Knoxville, Tennessee 37920
P) (865) 689-2778
unitedmountaindefense@yahoo.com
http://www.unitedmountaindefense.org/

A nonprofit organization committed to halting mountaintop removal coal mining.

WEST VIRGINIA

Coal River Mountain Watch
P) (304) 854-2182
http://www.crmw.net

Mission: to stop the destruction of our communities and environment by mountaintop removal mining, to improve the quality of life in our area and to help rebuild sustainable communities.

Ohio Valley Environmental Coalition
PO Box 6753
Huntington, WV 25773-6753.
P) (304) 522-0246
vivian@ohvec.org
http://www.ohvec.org

OVEC works to end mountaintop removal, water contamination from coal slurry injection, and improve the enforcement of mining laws. It works in much of West Virginia and portions of southern Ohio and eastern Kentucky.

West Virginia Highlands Conservancy
Cindy Rank
Formed in 1967, the West Virginia Highlands Conservancy is the state's oldest environmental advocacy organization. For four decades the Conservancy has been a leader in citizen efforts on a variety of mining issues critical to protecting the environment and life in WV.

WYOMING

Powder River Basin Resource Council
934 N. Main St.
Sheridan, WY 82801
P) (307) 672-5809
F) (307) 672-5800
sanderson@powderriverbasin.org
http://www.powderriverbasin.org/

REGIONAL

Appalachian Voices
191 Howard St
Boone, NC 28607
P) (828) 262-1500
Toll Free: 1-877-APP-VOICE
F) (828) 262-1540
http://www.appvoices.org

Citizens Coal Council
P.O. Box 964
670 Jefferson Avenue
Washington, PA 15301
P) (724) 222-5602
F) (724) 222-5609
ccc@citizenscoalcouncil.org
http://www.citizenscoalcouncil.org

The Citizens Coal Council and its members strive to protect people, homes, water, communities, and the environment from coal mining damage, restore law and order by enforcing the federal SCMRA, and help each other win our issues.
The Mountaintop Removal Road Show
608 Allen Ct.
Lexington, KY 40505
P) (859) 299-5669
http://www.mountainroadshow.com/

A 22-minute slide show about the impacts of mountaintop removal on coalfield residents, communities and the environment that has been shown over 500 times in sixteen states since 2003.

Mountain Justice
PO Box 86
Naoma, WV 25140
www.mountainjustice.org

Direct action organization working for world-wide awareness of Mountain Top Removal mining and its effects.
APPENDIX I
Federal Office of Surface Mining Offices

Secretary of the Department of Interior
1849 C Street, N.W.
Washington, DC 20240
P) (202) 208-3100
http://www.doi.gov/welcome.html

Assistant Secretary
Land & Minerals Management
1849 C Street, N.W.
Washington, DC 20240
P) (202) 208-6734

OFFICE OF SURFACE MINING (OSM) HEADQUARTERS

Office of Surface Mining Reclamation and Enforcement
1951 Constitution Avenue, NW
Washington, DC 20240
P) (202) 208-2719
GetInfo@osmre.gov
www.osmre.gov

Director
Office of Surface Mining Reclamation and Enforcement
1951 Constitution Avenue, NW
Washington, DC 20240
P) (202) 208-4006
(Reports to Assistant Secretary)

Appalachian Regional Office
Thomas D. Shope, Regional Director
Three Parkway Center
Pittsburgh, PA 15220
P) (412) 937-2828
tshope@osmre.gov
www.arcc.osmre.gov

Columbus Office
George Rieger, Manager
Pittsburgh Field Division
Columbus Office
4054 4605 Morse Road, room 102
4055 Columbus, OH 43230
4056 P) (412) 937-2153 (Pittsburgh, Pennsylvania.)
4057 P) (614) 416-2238 (Columbus, Ohio)
4058 grieger@osmre.gov
4059
4060 **Harrisburg Office**
4061 George Rieger, Manager
4062 Pittsburgh Field Division
4063 Harrisburg Transportation Center
4064 415 Market Street, Suite 3C
4065 Harrisburg, PA 17101
4066 P) (412) 937-2153 (Pittsburgh, Pennsylvania)
4067 P) (717) 782-4036 (Harrisburg, Pennsylvania)
4068 http://mmr.osmre.gov/hfo
4069 grieger@osmre.gov
4070
4071 **Johnstown Office**
4072 Joe Geissinger, Manager
4073 Richland Professional Bldg.
4074 334 Bloomfield St., Suite 104
4075 Johnstown, PA 15904
4076 P) (814) 533-4223
4077 jgeissin@osmre.gov
4078
4079 **Big Stone Gap Area Office**
4080 Ian Dye, Chief
4081 1941 Neeley Road, Suite 201
4082 Compartment 116
4083 Big Stone Gap, VA 24219
4084 P) (276) 523-0061 x16
4085 idye@osmre.gov
4086
4087 **Charleston Field Office**
4088 Roger W. Calhoun, Director
4089 1027 Virginia Street, East
4090 Charleston, WV 25301
4091 P) (304) 347-7162
4092 rcalhoun@osmre.gov
4093
4094 **Beckley Area Office**
4095 Jack Nelson, Manager
4096 313 Harper Park Dr.
4097 Beckley, WV 25801
4098 P) (304) 255-5265 x11
4099 jnelson@osmre.gov
4100
4101 **Morgantown Area Office**
Jack Nelson, Supervisor
P.O. Box 886
75 High Street, Rm. 229
Morgantown, WV 26507-0886
P) (304) 255-5265 x11 (Beckley, West Virginia)
jnelson@osmre.gov

Knoxville Field Office
Earl D. Bandy, Jr., Director
710 Locust Street, 2nd floor
Knoxville, TN 37902
P) (865) 545-4103 x130
Fax: (865) 545-4111
ebandy@osmre.gov

Lexington Field Office
Joseph L. Blackburn, Director (Acting)
2675 Regency Road
Lexington, KY 40503-2922
P) (859) 260-3904
jblackburn@osmre.gov

London Area Office
Sam Turner, Team Leader
P.O. Box 1048
London, KY 40743
P) (606) 878-6440
sturner@osmre.gov

Madisonville Area Office
Michael Cox, Team Leader
Office of Surface Mining
100 YMCA Drive
Madisonville, KY 42431
P) (270) 825-4500
mcox@osmre.gov

Pikeville Area Office
Gary Francis, Team Leader
Matewan Bank Bldg.
334 Main Street, Rm. 409
Pikeville, KY 41501
P) (606) 434-5767
gfrancis@osmre.gov

Mid-Continent Regional Office
Ervin Barchenger, Regional Director  
Alton Federal Bldg.  
501 Belle Street, Rm 216  
Alton, IL 62002  
P) (618) 463-6463 x5129  
www.mccrcc.osmre.gov  
ebarchenger@osmre.gov

Indianapolis Area Office  
Andrew R. Gilmore, Director  
575 North Pennsylvania St., Rm 301  
Indianapolis, IN 46204  
P) (317) 226-6700  
agilmore@osmre.gov

Birmingham Field Office  
Sherry Wilson, Director  
135 Gemini Circle, Suite 215  
Homewood, AL 35209  
P) (205) 290-7282 x16  
swilson@osmre.gov

Tulsa Field Office  
Al Clayborne, Director  
1645 South 101st East Avenue, Suite 145  
Tulsa, OK 74128-4629  
P) (918) 581-6430  
F) (918) 581-6419  
aclayborne@osmre.gov

Western Regional Office  
Allen D. Klein, Regional Director  
P.O. Box 46667  
1999 Broadway, Suite 3320  
Denver, CO 80201-6667  
P) (303) 293-5001  
aklein@osmre.gov  
www.wrcc.osmre.gov

Olympia Area Office  
Glen Waugh, Manager  
Evergreen Plaza Bldg.  
711 South Capitol Way, Suite 703
Albuquerque Area Office
Bob Postle, Field Operations Manager
505 Marquette Ave., NW, Suite 1200
Albuquerque, NM 87102
P) (305) 293-5041 (Denver, Colorado)
P) (505) 248-5096 (Albuquerque, New Mexico)
bpostle@osmre.gov

Farmington Area Office
Bob Postle, Field Operations Manager
501 Airport Drive, Suite 208
Farmington, NM 87401
P) (303) 293-5041 (Denver, Colorado)
P) (505) 248-5096 (Albuquerque, New Mexico)
bpostle@osmre.gov

Casper Field Office
Jeffrey W. Fleischman, Field Office Director
150 East B St., Rm.1018
Casper, WY 82601-1018
P) (307) 261-6550
jfleischman@osmre.gov
### APPENDIX J

**STATE OFFICES WITH REGULATORY PRIMACY**

<table>
<thead>
<tr>
<th>State</th>
<th>Office Name</th>
<th>Address</th>
<th>City, State Zip Code</th>
<th>Phone</th>
<th>Fax</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Governor</td>
<td>State Capitol</td>
<td>Montgomery, AL 36130</td>
<td>(334) 242-7100</td>
<td><a href="http://www.governor.alabama.gov/">http://www.governor.alabama.gov/</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alabama Surface Mining Commission</td>
<td>P.O. Box 2390</td>
<td>Jasper, AL 35502-2390</td>
<td>(205) 221-4130</td>
<td><a href="http://www.surface-mining.state.al.us/">http://www.surface-mining.state.al.us/</a></td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td>Governor</td>
<td>P.O. Box 110001</td>
<td>Juneau, AK 99811-0001</td>
<td>(907) 465-3500</td>
<td><a href="http://gov.state.ak.us/">http://gov.state.ak.us/</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alaska Department of Natural Resources</td>
<td>550 West 7th Avenue, Suite 900B</td>
<td>Anchorage, AK 99501</td>
<td>(907) 269-8652</td>
<td><a href="http://www.dnr.state.ak.us/mlw/mining/">http://www.dnr.state.ak.us/mlw/mining/</a></td>
<td></td>
</tr>
<tr>
<td>Arizona</td>
<td>Governor</td>
<td>1700 West Washington</td>
<td>Phoenix, AZ 85007</td>
<td>(602) 542-4331</td>
<td><a href="http://www.azgovernor.gov/">http://www.azgovernor.gov/</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Department of Mines and Mineral Resources</td>
<td>1502 West Washington</td>
<td>Phoenix, AZ 85007</td>
<td>(602) 771-1600</td>
<td><a href="http://www.admmr.state.az.us/">http://www.admmr.state.az.us/</a></td>
<td></td>
</tr>
</tbody>
</table>
Arkansas
Governor
State Capitol Room 250
Little Rock, AR 72201
P) (501) 682-2345
http://www.governor.arkansas.gov/

Department of Environmental Quality
Surface Mining and Reclamation Division
5301 Northshore Drive
North Little Rock, AR 72118-5317
P) (501) 682-0807
http://www.adeq.state.ar.us/mining/

California
Governor
State Capitol Building
Sacramento, CA 95814
P) (916) 445-2841
F) (916) 558-3160
http://gov.ca.gov/

Department of Conservation
Office of Mine Reclamation
801 K Street, MS 09-06
Sacramento, CA 95814-3529
P) (916)323-9198
F) (916)322-4862
http://www.conservation.ca.gov/omr/Pages/Index.aspx

Colorado
Governor
136 State Capitol
Denver, CO 80203-1792
P) (303) 866-2471
F) (303) 866-2003
http://www.colorado.gov/governor/

Department of Natural Resources
Division of Reclamation Mining and Safety
1313 Sherman St., Rm. 215
Denver, CO 80203
P) (303) 866-3567
F) (303) 832-8106
http://mining.state.co.us/index.htm

Georgia
Governor
203 State Capitol
Atlanta, Georgia 30334
P) (404) 656-1776
http://gov.georgia.gov/

Department of Natural Resources
Environmental Protection Division
2 Martin Luther King Jr. Drive, Suite 1152 East Tower
Atlanta, GA 30334
P) 404-657-5947
http://www.georgiaepd.org/

Idaho
Governor
700 W Jefferson St # 228
Boise, ID 83720
P) (208) 334-2100
http://gov.idaho.gov/

Idaho Department of Lands: Minerals Program
3780 Industrial Avenue South
Coeur d'Alene, ID 83815
P) (208) 769-1525
F) (208) 769-1524
http://www.idl.idaho.gov/Bureau/MineralsBC.htm

Illinois
Governor
207 State House
Springfield, IL 62706
P) (217)782-0244
http://www.illinois.gov/GOV/

Department of Natural Resources
Office of Mines and Minerals
One Natural Resources Way
Springfield, IL 62702-1271
P) (217) 782-6791
http://dnr.state.il.us/mines/

Indiana
Governor
200 W Washington St # 206
Indianapolis, IN 46204
P) (317) 232-4567
http://www.in.gov/gov/

Department of Natural Resources
Iowa

**Governor**
State Capitol
Des Moines, IA 50319
P) (515) 281-5211
http://www.governor.iowa.gov/

Department of Agriculture and Land Stewardship
Mines and Minerals Bureau
Wallace State Office Building
502 E. 9th Street
Des Moines, IA 50319
P) (515) 281-5321

Kansas

**Governor**
Capitol, 300 SW 10th Ave., Ste. 212S
Topeka, KS 66612-1590
P) 1-877-579-6757
http://www.governor.ks.gov/

Department of Health and Environment
Surface Mining Section
4033 Parkview Drive
Frontenac, Kansas 66763
P) 620-231-8540
F) (620) 231-0753
http://www.kdheks.gov/mining/

Kentucky

**Governor**
700 Capitol Avenue, Suite 100
Frankfort, Kentucky 40601
P) (502) 564-2611
http://governor.ky.gov/

Energy and Environment Cabinet
Department for Natural Resources (contains Division of Abandoned Mine Lands, Division of Mine Reclamation and Enforcement, and Division of Mine Permits)
#2 Hudson Hollow
Frankfort, KY 40601
Louisiana
Governor
P.O. Box 94004
Baton Rouge, LA 70804-9004
P) (225) 342-7015
http://www.gov.state.la.us/

Office of Conservation
Injection and Mining Division
Surface Mining Section
617 North Third Street
(or P.O. Box 94275)
Baton Rouge Louisiana 70804-9275
P) (225) 342-5515
F) (225) 242-3441
http://dnr.louisiana.gov/cons/conserin/Surfmine.ssi

Maryland
Governor
100 State Circle
Annapolis, Maryland 21401-1925
410-974-3901
http://www.gov.state.md.us/

Department of the Environment
Mining Program
1800 Washington Blvd
Baltimore, MD 21230
P) (410) 537-3000
http://www.mde.state.md.us/Programs/WaterPrograms/MiningInMaryland/index.asp

Massachusetts (federal program)
Governor
Massachusetts State House
Office of the Governor
Room 360
Boston, MA 02133
Phone: 617.725.4005
http://mass.gov/governor/

Michigan
Governor
P.O. Box 30013
Lansing, Michigan 48909
Mississippi
Governor
P.O. Box 139
Jackson, MS 39205
P) (601) 359-3150
http://www.governorbarbour.com/
Department of Environmental Quality
Office of Geology
Mailing Address for Inquiries:
Office of Geology
P.O. Box 2279
Jackson, MS 39225
Street Address:
700 North State St.
Jackson, MS 39202
P) (601) 961-5171
http://www.deq.state.ms.us/MDEQ.nsf/page/Geology_mining_and_reclamation?OpenDocument
Missouri
Governor
Room 216, State Capitol Building
Jefferson City MO 65101
P) (573) 751-3222
http://governor.mo.gov/
Missouri Department of Natural Resources
Land Reclamation Commission
P.O. Box 176
Jefferson City, MO 65102
P) (573) 751-4041
http://www.dnr.mo.gov/env/lrp/homecoal.htm
Montana
Governor
Montana State Capitol Bldg.
P.O. Box 200801
Helena MT 59620-0801
P) (406) 444-3111
http://governor.mt.gov/

Department of Natural Resources and Conservation
Minerals Management Bureau
1625 Eleventh Ave.
Helena, MT 59620
P) (406) 444-2074

New Mexico
Governor
490 Old Santa Fe Trail
Room 400
Santa Fe, NM 87501
P) (505) 476-2200
http://www.governor.state.nm.us/

New Mexico Energy, Minerals, and Natural Resources Department
Mining and Minerals Division
1220 South St. Francis Drive, Santa Fe, NM 87505
P) (505) 476-3400
F) (505) 476-3402
http://www.emnrd.state.nm.us/MMD/CMRP.htm

North Dakota
Governor
600 East Boulevard Avenue
Bismarck, ND 58505-0001
P) (701) 328.2200
http://governor.state.nd.us/

Public Service Commission
Reclamation Division
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480
P) (701) 328-4096
F) (701) 328-2133
http://www.psc.state.nd.us/jurisdiction/reclamation.html

Ohio
Governor
Riffe Center, 30th Floor
77 South High Street
Columbus, OH 43215-6108
P) (614) 466-3555
http://www.governor.ohio.gov/
Ohio Department of Natural Resources
Mineral Resources Management
2045 Morse Road, Building H-3
Columbus, Ohio 43229-6693
P) (614) 265-6633
F) (614) 265-7999; (614) 265-7998

Oklahoma
Governor
State Capitol Building
2300 N. Lincoln Blvd., Room 212
Oklahoma City, OK 73105
P) (405) 521-2342
http://www.governor.state.ok.us/

Oklahoma Department of Mines
2915 North Classen Blvd., Suite 213
Oklahoma City, OK 73106
P) 405-427-3859
F) (405) 427-9646
http://www.ok.gov/mines/

Oregon
Governor
160 State Capitol
900 Court Street
Salem, OR 97301-4047
P) (503) 378-4582
http://governor.oregon.gov

Oregon Department of Geology and Mineral Industries
Mineral Land Regulation and Reclamation
229 Broadalbin St. SW
Albany, OR 97321
P) 541-967-2039
F) (541) 967-2075
http://www.oregongeology.com/sub/mlr/mlrhome.htm

Pennsylvania
Governor
225 Main Capitol Building
Harrisburg, Pennsylvania 17120
P) (717) 787-2500
http://www.governor.state.pa.us/

Pennsylvania Department of Environmental Protection
Bureau of Mining and Reclamation
Rhode Island
Governor
State House, Room 115
Providence, RI 02903
P) (401) 222-2080
http://www.governor.ri.gov/

South Dakota
Governor
500 E. Capitol Ave.
Pierre, SD 57501
(605) 773-3212
http://www.state.sd.us/governor/

Department of Environment and Natural Resources
Minerals and Mining Program
Joe Foss Building
523 E Capitol
Pierre SD 57501
P) (605) 773-4201
F) (605) 773-5286
http://denr.sd.gov/des/mm/mmprogram.aspx

Tennessee (federal program)
Governor
Tennessee State Capitol
Nashville, TN 37243-0001
P) (615) 741-2001
http://www.tennesseanymtime.org/governor/

Department of Environment and Conservation
Division of Geology
401 Church Street
13th Floor, L&C Tower
Nashville, TN 37243-0445
P) (615) 532-1502
http://www.state.tn.us/environment/tdg/

Texas
Governor
P.O. Box 12428
Austin, Texas 78711
Railroad Commission of Texas
Surface Mining and Reclamation Division
P.O. Drawer 12967
Austin, Texas 78711-2967
P) (512) 463-6900
F) (512) 463-6709
http://www.rrc.state.tx.us/programs/mining/index.php

Utah
Governor
Utah State Capitol Complex
350 North State Street, Suite 200
PO Box 142220
Salt Lake City, Utah 84114-2220
P) (801) 538-1000
http://www.utah.gov/governor/
Utah Department of Natural Resources
Division of Oil, Gas, and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801
P) (801) 538-5340

Virginia
Governor
Patrick Henry Building, 3rd Floor
1111 East Broad Street
Richmond, Virginia 23219
P) (804) 786-2211
http://www.governor.virginia.gov/
Virginia Department of Mines Minerals and Energy
Division of Mined Land Reclamation
Washington Building, 8th Floor
1100 Bank Street
Richmond, VA 23219
P) (276) 523-8100

Washington (federal program)
Governor
PO Box 40002
Olympia, WA 98504-0002
P) (360) 902-4111
West Virginia
Governor
1900 Kanawha Boulevard, E.
Charleston, WV 25305
P) 1-888-438-2731
http://www.wvgov.org/

Department of Environmental Protection
Division of Mining and Reclamation
Headquarters, 601 - 57th St.
Charleston, WV 25304
P) 304-926-0490
http://www.wvdep.org/item.cfm?ssid=9

Wyoming
Governor
State Capitol
200 West 24th Street
Cheyenne, WY 82002-0010
P) 307-777-7434
http://governor.wy.gov/

Wyoming Department of Environmental Quality
Land Quality Division
122 West 25th St, Herschler Building
Cheyenne WY 82002
P) (307) 777-7756
http://deq.state.wy.us/lqd/coalpermitting.asp