

Office of Surface Mining

Twenty-Second Annual Evaluation Summary Report
for the
Regulatory and Abandoned Mine Land Reclamation Programs
Administered by the Commonwealth
of
Kentucky
for

Evaluation Year 2004

(July 1, 2003, to June 30, 2004)

TABLE OF CONTENTS

I.	Introduction	1
II.	Overview of the Kentucky Coal Mining Industry	3
III.	Overview of the Public Participation Opportunities in the Oversight Process and the State Program	5
IV.	Major Accomplishments/Issues/Innovations in the Kentucky Program	5
	A. Regulatory	7
	1. Blackwater	7
	2. Long-Term Treatment (LTT) of AMD	8
	3. Remining	8
	4. OSM National Initiatives	9
	5. Reforestation	9
	6. Mine Mapping Initiative	9
	7. Slurry	10
	8. Interactive Forum	11
	9. Blasting	12
	10. The Approved State Program	12
	11. Geographic Information System	14
	12. Technology Advancements	14
	B. Abandoned Mine Land Reclamation (AMLR)	15
	1. AML Inventory System (AMLIS)	16
	2. Bond Forfeiture Reclamation	16
	3. AML Emergency Program	16
	4. Appalachian Clean Streams Initiative (ACSI)	17
	C. Outstanding Issues	18
	1. Disposal of Underground Development Waste	18
	2. Bankruptcies	18
	3. Surety and Bonding	19
	4. Fill Construction Practices	19
	5. Unauthorized Fills	20
	6. Flyrock Events	20

V. Success in Achieving the Purposes of SMCRA as Measured by the Number of Observed Off-Site Impacts and the Number of Acres Meeting the Performance Standards at the Time of Bond Release 20

 A. Off-Site Impacts 20

 B. Bond Release 22

VI. OSM Assistance 23

VII. General Oversight Topic Reviews 24

 A. Topsoil Substitution 25

 B. Phase I Bond Release Inspections 27

 C. Phase III Bond Release Inspections 27

 D. Fill Inventory 28

 E. Random Sample 28

 F. Slurry Impoundments - Phase II 28

 G. Slurry Impoundments - Phase III 29

 H. Joint Blasting Review 29

 I. Preparation Plants 30

 J. Inspection Frequency 30

 K. Probable Hydrologic Consequences (PHC) Review .. 31

Appendix A: Tabular Summary of Core Data to Characterize the Program

Table 1	Coal Production
Table 2	Inspectable Units
Table 3	State Permitting Activity
Table 4	Off-Site Impacts
Table 5	Annual State Mining and Reclamation Results
Table 6	State and OSM Enforcement Activity
Table 6A	Citizen Complaints
Table 6B	State Inspection Activity
Table 7	State Bond Forfeiture Activity
Table 8	Kentucky Staffing
Table 9	Funds Granted to Kentucky by OSM
Table 10	Kentucky Inspection Activity
Table 11	Kentucky Enforcement Activity
Table 12	Lands Unsuitable Activity

Appendix B: State Comments on the Report

Appendix C: Permittees Issued Non-Compliances by DNR
(Listed by Descending Number of
Non-Compliances)

Appendix D: Permittees Issued Non-Compliances by DNR
(Listed Alphabetically)

Appendix E: 2003 Fill Information

Appendix F: MSHA-Class Impoundment Inventory

I. Introduction

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) created the Office of Surface Mining (OSM) to oversee the implementation of and provide Federal funding for State regulatory programs that have been approved by OSM as meeting the minimum standards specified by SMCRA. This report contains summary information regarding the approved Kentucky regulatory program and the effectiveness of the program in meeting the applicable purposes of SMCRA as specified in Section 102. This report covers the period of July 1, 2003, to June 30, 2004.

Detailed background information and comprehensive reports for the program elements evaluated during the Evaluation Year (EY) are available for review and copying at the OSM Lexington Field Office (LFO).

The format for this report is established by OSM Directive REG-8. REG-8 enables OSM and states to take innovative, results-oriented evaluation approaches tailored to individual State programs and stakeholder interests and needs. During the EY, OSM and the states develop state-specific oversight plans or performance agreements to identify specific program areas and evaluation methodologies directed toward end-results measurement.

The oversight process provides two national measurements of end results--the number and degree of off-site impacts resulting from mining and the number of acres meeting all reclamation requirements as documented by different phases of bond release. The revised process allows OSM to focus oversight on those aspects of the State program that both OSM and the State determine to be most important.

The following list of acronyms is used in this report:

A&E	Administration and Enforcement
ACSI	Appalachian Clean Streams Initiatives
AMD	Acid Mine Drainage
AML	Abandoned Mine Land
AMLIS	Abandoned Mine Land Inventory System
AMLR	Abandoned Mine Land Reclamation
ARCC	Appalachian Regional Coordinating Center
BLM	Bureau of Land Management
CO	Cessation Order
COE	U.S. Army Corps of Engineers
CY	Calendar Year

DAML	Division of Abandoned Mine Lands
DMS	Document Management System
DNR	Department for Natural Resources
DSMRE	Department for Surface Mining Reclamation and Enforcement
EIS	Environmental Impact Statement
eMIR	Electronic Mine Inspection Report
EPPC	Environmental and Public Protection Cabinet
EY	Evaluation Year
FOD	Field Office Director
FY	Fiscal Year
GIS	Geographic Information System
HR	Hydrologic Requirements
IHCO	Imminent Harm to the Environment Cessation Order
KAR	Kentucky Administrative Regulation
LFO	Lexington Field Office
LTT	Long-Term Treatment
MSHA	Mine Safety and Health Administration
NC	Notice of Non-Compliance
OMSL	Office of Mine Safety and Licensing
OSM	Office of Surface Mining
PHC	Probable Hydrologic Consequences
RA	Regulatory Authority
RAM	Reclamation Advisory Memorandum
RD	Regional Director
SMCRA	Surface Mining Control and Reclamation Act of 1977
SOAP	Small Operator Assistance Program
TDN	Ten-Day Notice
USFS	United States Forest Service
WQ	Water Quality

II. Overview of the Kentucky Coal Mining Industry

Kentucky is the third largest coal-producing State in the nation, with an annual production averaging over 160 million short tons during the 1990's. Kentucky was the nation's leading coal producer until 1988, holding that position for over a decade until the production from Wyoming and West Virginia exceeded that in Kentucky. Kentucky's coal production has steadily decreased from the late 1990's through the end of this EY. (See Table 1)

Nearly every type of coal mining and reclamation practice is found due to the differing coal bearing regions within the State and the availability of coal. Kentucky's coal reserve base, the fifth largest in the nation, consists entirely of bituminous coal. Two major coal provinces in Kentucky are separated by a large geologic uplift called the "Cincinnati Arch." The Eastern Kentucky Coalfield is part of the Appalachian Coal Province where underground, contour, and mountaintop mining occurs. The Western Kentucky Coalfield is part of the Interior Coal Province (Illinois Coal Basin) where area and underground mining occurs. The Jackson Purchase Lignite Coalfield underlies the eight most western counties in Kentucky. This potential resource has not been assessed, and no current lignite mining is occurring.

Since 1979, coal produced from underground mines has steadily increased over coal produced from surface mines. Underground mines account for approximately two-thirds of the acreage permitted in the State. The high percentage of acreage is due to the State requirement that the shadow area overlying the underground works must be permitted. However, most underground mines actually disturbed very little surface acreage. Of the total disturbed acreage from coal mining in Kentucky (245,577 acres), only 26,621 acres (or approximately ten percent) are attributed to underground mines. A review of underground mines in Kentucky indicates the following increases in size during the last four EY's as follows:

Underground Mines Permitted Acreage	EY 2001	EY 2002	EY 2003	EY 2004
Less than 20 acres	1%	1%	1%	1%
20-99 acres	6%	6%	5%	6%
100 acres or more	93%	93%	94%	93%
Underground Mine Surface Disturbance Acreage	EY 2001	EY 2002	EY 2003	EY 2004
Less than 20 acres	70%	70%	69%	67%
20-99 acres	24%	24%	24%	25%
100 acres or more	6%	6%	7%	8%

Surface mines and associated facilities (haul roads and preparation plants, etc.) account for approximately one-quarter of the acreage permitted in the State. A review of the permitted acreage for surface mines and associated facilities indicates a steady increase in size.

Permitted Acreage	EY 2001	EY 2002	EY 2003	EY 2004
Less than 20 acres	13%	13%	13%	13%
20-99 acres	24%	23%	22%	21%
100 acres or more	63%	64%	65%	66%

The number of surface mines that are greater than 100 acres has increased significantly over the last 11 evaluation periods in Kentucky. OSM's tenth annual report stated that 42 percent of the surface mines were larger than 100 acres. The fifteenth annual report reported that 55 percent of the surface mines were larger than 100 acres. As of June 30, 2004, the data shows that nearly two thirds of the surface mines are larger than 100 acres. The following table further categorizes the number of surface mines by size.

Permitted Acreage	Number of Surface Mines		Percent of Total Surface Mines	
	EY 2003	EY 2004	EY 2003	EY 2004
100-250	250	251	19	19
250-500	252	247	19	19
500-1,000	204	208	15	16
>1,000	143	151	10	12

III. Overview of the Public Participation Opportunities in the Oversight Process and the State Program

A team of LFO and Department for Natural Resources (DNR) personnel was formed to develop oversight procedures and special studies for EY 2004. The EY 2004 Performance Agreement was finalized and signed by DNR on September 2, 2003.

During the EY, LFO received no specific recommendations for oversight studies from its stakeholders. DNR continues to make blasting practices and the prevention of associated off-site impacts top priorities. During this EY, DNR has placed special emphasis on the prevention of blackwater discharges.

When SMCRA was enacted, it created many avenues for citizens' involvement. Thus, individual citizens have a statutory role in practically every phase of the surface mining program, from permit issuance to bond release. Since SMCRA was enacted in 1977, coalfield citizens have used those rights to help shape virtually all of the policies and programs that govern surface coal mining and reclamation in America.

During the EY, OSM held two public hearings in Kentucky. These are summarized as follows:

- On July 22, 2003, the Environmental Protection Agency, the U.S. Army Corps of Engineering (COE), the U.S. Fish and Wildlife Service, the West Virginia Department of Environmental Protection, and OSM held a public hearing on the draft programmatic Environmental Impact Statement (EIS) on mountaintop mining and valleyfills in Appalachia. The public hearing was held at the Hal Rogers Center, Hazard, Kentucky. There were approximately 250 attendees and 91 people testified at the hearing.
- On March 30, 2004, OSM held a public hearing regarding the excess spoil minimization/stream buffer zone proposed rule (published on January 7, 2004). The public hearing was held at the Hazard Community College, Hazard, Kentucky. Over 100 people attended and 31 testified at the hearing. OSM is analyzing the comments received.

IV. Major Accomplishments/Issues/Innovations in the Kentucky Program

In November 2003, Ernie Fletcher was elected Governor of Kentucky. Governor Fletcher reorganized the Executive Branch

of the Kentucky State government. By Executive Orders dated December 23, 2003, and July 9, 2004, the Governor eliminated the Natural Resources and Environmental Protection Cabinet and created the Environmental and Public Protection Cabinet (EPPC). The Executive Orders also eliminated the Department for Surface Mining Reclamation and Enforcement (DSMRE) and transferred the three Divisions within DSMRE into DNR. Also under the reorganization, the Department of Mines and Minerals was re-designated the Office of Mine Safety and Licensing (OMSL) and placed in DNR.

DNR is the Regulatory Authority (RA) responsible for the regulation of coal mining of Federal and non-Federal lands in Kentucky. DNR is headed by Commissioner Susan C. Bush. The three Division Directors are as follows: Division of Mine Permits, Larry Adams, Director; Division of Mine Reclamation and Enforcement, Keith B. Smith, Acting Director; Division of Abandoned Mine Lands (DAML), Steve Hohmann, Director. The Division of Mine Reclamation and Enforcement has five regional offices located in Madisonville, Middlesboro, Prestonsburg, Pikeville, and London.

The Fiscal Year (FY) 2004 Administration and Enforcement (A&E) Grant was in the amount of \$12,313,367 (Federal funds) and supports 318.87 positions. Of this total, \$1,026,605 is for Federal lands. OSM funds 83 positions in DAML with a grant of \$15,913,345 for FY 2004. The Small Operator Assistance Program (SOAP) was awarded grant funds of \$733,844 for FY 2004.

There are three major coal associations in Kentucky. They are the Kentucky Coal Association, the Western Kentucky Coal Association, and the Coal Operators and Associates, Inc.

Kentucky has two citizen organizations that are very active in coal mining issues. They are Kentuckians for the Commonwealth, Teri Blanton, Chairperson; and the Kentucky Resources Council, Inc., Thomas FitzGerald, Director. Lately, the Heartwood citizen's group has been active on issues concerning mining operations on U.S. Forest Service (USFS) property.

DNR is maintaining an effective regulatory program for permitting, inspection, and enforcement of surface coal mining and reclamation operations.

Kentucky experienced an extremely wet year. The heavy rainfall affected both the Regulatory and Abandoned Mine Lands (AML) programs. LFO received an above average number of AML

complaints during the EY. OSM investigated 245 AML emergency complaints during the EY.

The major accomplishments/innovations for the EY are as follows:

A. Regulatory

1. Blackwater

In January 2004, the Secretary of EPPC appointed representatives of the mining industry, environmental groups, and academia to a "Blackwater Task Force." The goal of the task force is to identify ways to minimize the number and severity of blackwater spills in Kentucky. The group continues to investigate best management practices to prevent or lessen the incidents of blackwater discharges. DNR provides technical support and advice to the task force. DNR's role is significant since they are the primary environmental regulator of the coal industry.

One of DNR's first tasks was to quantify the extent of blackwater spills. DNR identified all the violations they had issued for substandard discharge. These discharges were cited under the water quality (WQ), effluent limits, and hydrologic requirements (HR) sections of the regulations. A substandard discharge is not only blackwater, but can also be grey water, muddy or brown water, or acid mine drainage (AMD) (high iron and low pH). Next, DNR identified the cause of the substandard water discharges.

DNR's research found that in calendar year (CY) 2003, 167 notices of non-compliance (NC) were issued for WQ or HR violations. Seventeen of these NC's were significant enough to also warrant issuance of an imminent harm to the environment cessation order (IHCO). Of these 17 IHCO's, four were for blackwater, 12 were for muddy water, and one was for a slide into a stream. DNR determined that three of the four blackwater discharges were the result of operational error and one was the lack of sediment control. The muddy water discharges were the result of failure to provide adequate sediment control due to improper maintenance.

In the first three months of 2004, DNR issued 32 NC's of WQ, effluent limits, HR violations, and three IHCO's. Of the three IHCO's, two were for blackwater and one was for AMD. DNR determined that one of the blackwater discharge IHCO's was due

to inadequate maintenance of the effluent pond and the other was operational error of damaging the decant pipe during pond maintenance.

In response to its findings, DNR formalized internal procedures for the regional and central offices to follow to coordinate response activities with the EPPC Division of Water. All these procedures are aimed at identifying the source and cause of the substandard discharge, such that appropriate remediation measures can be implemented. Upon discovery or notification of a substandard discharge, the regional office will immediately notify the central office of the event. When at all possible, the DNR helicopter will be dispatched to assist in locating and videotaping the occurrence. The regional office personnel will immediately initiate an investigation with central office personnel and provide on-ground assistance as soon as possible. A list was prepared of central office personnel that would be available for immediate departure to assist in the discharge investigation.

2. Long-Term Treatment (LTT) of AMD

DNR maintains an inventory of known LTT permits with related coal bed and watershed information. The LTT policy revised the terminology of the original AMD policy requiring an expanded inventory of sites, including treatment of effluent for any chemical parameter. The inventory is routinely updated and is made available to the Division of Permits' review staff and the Division of Mine Reclamation and Enforcement's inspection staff. LFO, working jointly with DNR, has developed and maintains a basic Geographic Information System (GIS) map of the inventory. An AMD producing site may be removed from the active list if AMD production ceases after reclamation is completed. A site can only be removed from the active list if the water pH before treatment meets applicable effluent limits for 12 consecutive months. Such sites are still maintained on a historic AML list. During this EY, four sites were removed from the active list. Each site was inspected by LFO, which confirmed that each site was meeting effluent limits.

3. Remining

The Kentucky Remining Team is continuing its efforts of promoting remining by: (1) evaluating potential remining sites, (2) reducing or eliminating impediments to remining, and (3) creating new incentives. The team visited two minesites to evaluate their potential for remining.

4. OSM National Initiatives

DNR continues to take an active role in national OSM initiatives. DNR has a member on the National Blasting Work Group. Its membership provides important technical information on the mining practices and conditions in Kentucky. DNR and LFO have also been active participants with the Interstate Mining Compact Commission on the national remining and AMD initiatives. In addition, DNR is a cooperating agency on the EIS on mountaintop mining and valleyfills.

5. Reforestation

DNR is working jointly with OSM and the University of Kentucky to provide outreach and technology transfer regarding reforestation enhancement on surface mines. Both DNR and OSM are actively involved in the recently organized Appalachian Regional Reforestation Initiative. This initiative will transfer research findings and new technology as it develops to industry, landowners, other government agencies, and other interested parties for implementation on minesites. The implementation of DNR's Reclamation Advisory Memorandum (RAM) #124 ("Reforestation Initiative" issued March 10, 1997) is a key element of the reforestation initiative in Kentucky. DNR and OSM are in the process of designing a joint special study to review implementation of RAM #124. The study will include an evaluation of DNR and OSM field personnel attitudes and impressions concerning the methods and techniques of RAM #124 in an effort to assess the extent of any potential cultural barriers. During the process of this special study, the need for a general update of RAM #124 will be evaluated. Finally, this special study will install mechanisms for the tabulation of data concerning new permits issued since January 2004 that involves the planting of woody species as part of the post-mining land use. A related special study concerning spoil compaction and its effect on post-mining land uses that require the establishment of woody species will also be conducted jointly by DNR and OSM. DNR and OSM are also encouraging reforestation efforts on AML reclamation projects.

6. Mine Mapping Initiative

Kentucky is making significant progress on its mine mapping initiative. General outlines of mined out areas, both underground and surface mines, are now available for viewing at the Kentucky Mine Mapping Initiative web site at <http://minemaps.ky.gov>. The site contains a tutorial on its use.

The web site allows users to view mined out areas throughout Kentucky and obtain maps of those mines. Users can also obtain information on these mines such as the name of the mine operator, the time of mining, the annual tonnage produced, and other statistics. Searches can be made by county, USGS topographic quad sheet, mine identification numbers, or geographic coordinates. Underground mine maps submitted to DNR since 2001 have been scanned, geo-referenced, and made accessible for downloading through this web site. So far, DNR added over 2,000 new mine maps to the web site and has over 2,000 more maps ready to be added to the site.

DNR (including OMSL) and the Revenue Cabinet are currently working under a grant from the Mine Safety and Health Administration (MSHA) to scan and geo-reference all mine maps currently on file with OMSL. As these maps are processed, they are being used to update the mine map web site and are being made available for download. As well as making the mine maps available for use on the web site, the scanned maps are saved to compact discs and are archived to provide an additional means for protecting the historic record of mining in Kentucky.

7. Slurry

DNR and MSHA engineers met during the EY to discuss impoundment issues. This is an ongoing activity. DNR and OSM also attended the annual MSHA impoundment seminar.

Following the October 11, 2000, slurry impoundment failure at Martin County Coal Corporation, OSM and DNR began a joint review of all MSHA-class impoundments in Kentucky. At that time, there were 118 impoundments in Kentucky. Presently, there are 119 (91 coal slurry and 28 freshwater ponds) MSHA-class impoundments in Kentucky (97 in eastern Kentucky and 22 in western Kentucky).

In EY 2002, OSM and DNR completed an initial field review (referred to as Phase I reviews) of all the permitted impoundments. The inspections included an on-the-ground inspection, a comprehensive review of the mine maps for nearby underground mining, review of the SMCRA-approved construction and design plans, and review of the MSHA files to determine whether the approved MSHA designs matched the approved SMCRA designs.

The Phase I reviews also found that 42 impoundments were considered either inactive or abandoned. Several of these had

been inactive since the 1980's and 1990's. DNR took enforcement action against some of these sites, requiring the impoundment to be reclaimed. In certain instances, the company submitted an abandonment plan, and in other cases, the company filed for administrative review of the enforcement action. DNR continues to review the sites and ongoing administrative review activities to determine future courses of action.

The Phase I reviews also identified 47 impoundments with underground mining within 100 feet of the approved pool levels. OSM and DNR agreed that these "high priority" impoundments should undergo a more intense review. These reviews (referred to as Phase II reviews), were conducted jointly by an OSM and DNR team. The team included an engineer from both OSM and DNR and the DNR permit reviewer familiar with the permitting documents. The joint reviews focused on determining current conditions at the impoundment and identifying any deficiencies in the design and/or construction that may need additional action by DNR. The Phase II reviews were started in EY 2003 and completed in EY 2004. Additional information concerning these reviews is provided in Section VII.

Also, as a part of what is referred to as Phase III, OSM continued its detailed technical review of selected slurry impoundments. The reviews are being conducted by the OSM Regional Impoundment Technical Team. Two impoundments were reviewed during EY 2003. The details of that review were reported in the EY 2003 Annual Report. During EY 2004, the team reviewed two more Kentucky impoundments. Additional information concerning the EY 2004 reviews is provided in Section VII.

8. Interactive Forum

On July 28-30, 2003, an Interactive Forum on "Geophysical Technologies for Detecting Underground Coal Mine Voids" was held in Lexington, Kentucky. The forum was sponsored by OSM, MSHA, and the University of Kentucky. The purpose of the forum was to evaluate the applicability and effectiveness of available geophysical technologies for detecting, locating, and delineating active and inactive underground coal mine workings and voids. Over 200 participants attended the forum that included State and Federal agencies, coal industry representatives, consultants, and educational institutions.

9. Blasting

DNR has been active in enhancing its inspection and enforcement of blasting.

- DNR (including OMSL) and OSM have been coordinating with and receiving training from the Department of Justice, Bureau of Alcohol, Tobacco, Firearms, and Explosives concerning the implementation in Kentucky of the Federal 2002 Safe Explosives Act.
- DNR continues its work to enhance and refine the current blasting certification training and testing program in Kentucky.
- DNR is participating, along with OSM, in a multi-state review of blaster certification training, reciprocity, and testing.
- DNR (including OMSL) and OSM continue to conduct joint inspections of flyrock events.
- DNR, in most instances, imposes the maximum allowed civil penalties for violations involving off-site impacts related to flyrock events.
- DNR established a group of blasting inspectors in its regional offices during 2003. Blasting inspections, both compliance and citizen complaints, are conducted by these blasting inspectors.
- DNR provides training and technical support to its blasting inspectors. In addition, DNR and OSM attended the MSHA blasting safety training in Beckley, West Virginia, and the DNR-sponsored blasting conference in Louisville, Kentucky. (This was actually sponsored by the old Department of Mines and Minerals, which is now a division within DNR.)
- DNR and LFO conducted a joint special study on blasting records during the EY. (See Section VII.)

10. The Approved State Program

During the EY, OSM published five final rules in the Federal Register on the approved Kentucky program. The final rules

approved one program amendment, removed four required amendments found in 30 CFR 917.16, and disapproved one program amendment. In a letter to DNR dated April 1, 2004, OSM resolved a 30 CFR 732 issue on the definition of "affected area."

A summary of the approved program amendments is as follows:

On July 17, 2003, OSM approved, with one exception, a proposed amendment to the Kentucky regulatory program. The Kentucky Administrative Regulations (KAR) were revised to include three definitions, 1) impounding structure, 2) impoundment, and 3) other treatment facilities. Also, the performance standards for sedimentation ponds, impoundments, coal processing waste dams, and impoundments were amended. Kentucky revised its program to be consistent with the corresponding Federal regulations.

The summary of the removal of four required amendments is as follows:

- On July 16, 2003, OSM removed a required amendment relating to the determination of premining uses of land not previously mined having to be properly managed. We found that the Kentucky program as it currently exists is no less effective than the Federal regulations, and therefore, authorized the removal of the required amendment found at 30 CFR 917.16(g).
- On July 17, 2003, OSM removed a required amendment that required all C-class impoundments have a minimum static safety factor of 1.3 or meet specific design criteria no less effective than the standard. Kentucky amended its approved program, and OSM found that the change was no less effective than the Federal regulations.
- On July 17, 2003, OSM removed a required amendment relating to public notification of permit applications. We found the Kentucky program is consistent with the corresponding Federal regulations.
- On December 31, 2003, OSM removed a required amendment on service of conference officer reports pertaining to assessments of civil penalties. OSM found Kentucky's procedures consistent with the corresponding Federal regulations.

A summary of the program amendment disapproved by OSM is as follows:

- On May 13, 2004, OSM disapproved the transfer of \$3,840,000 from the Kentucky Bond Pool Fund to the General Fund Surplus Account. The use of the Bond Pool Fund to provide new financial guarantees was suspended until the \$3,840,000 was transferred back to the Bond Pool Fund or a plan for replacing these funds was submitted to and approved by OSM. Executive Order 2004-753 signed by Governor Fletcher on July 12, 2004, transferred \$3,840,000 from the General Fund Surplus Account to the Kentucky Bond Pool Fund. This action satisfactorily resolves OSM's concern and terminates our suspension of the use of the Bond Pool Fund, therefore resolving the issue.

11. Geographic Information System

DNR's Information Support Branch has developed a GIS database that can be accessed via the Internet. The database can be accessed from the DNR homepage at www.surfacemining.Ky.gov. The GIS has over 2,000 historical mylar overlays now available as geo-referenced digital images showing the extent of permit boundaries by topographic quadrangle. The system also provides links to copies of mine and reclamation plan maps for all permitting actions approved since December 2002. These maps are all geo-referenced for use in GIS applications. Other GIS data available includes water-sampling data, permit locations, permit boundaries, water monitoring wells, and mine shafts.

12. Technology Advancements

DNR continues its efforts on the electronic permitting initiative. Electronic workflow processing has been implemented throughout the Technical Review Section and is being utilized to monitor both electronic and hard copy submittals.

During the last EY, DNR greatly expanded the use of technology in its day-to-day operation. The Electronic Mine Inspection Report (eMIR) program utilizes a number of commercially available programs to create, process, and file the massive amounts of "paperwork" required in implementing Kentucky's inspection and enforcement program.

Using laptop computers on site, inspectors are able to electronically complete, sign, and print mine inspection reports.

After inspections are completed, the reports can then be routed to servers for review, approval, updating of the Surface Mining Information System, and filing. The system automatically takes care of mailings, distribution, tracking of time limits (in the event of enforcement actions), and reminders of needed follow-up.

During this EY, significant accomplishments in this process include:

- Electronic signatures are now being used, including batch signing of eMIR and associated documents.
- Enhancements to the system provide more consistency in form completion and information obtained.
- All regional offices have access to and are filing documents into the Document Management System (DMS).
- Four of the five regional offices are fully implementing this system. The remaining office will be included once personnel shortages are corrected.
- Over 28,000 inspections have been processed.
- Electronic copies have reduced the need for paper copies and mailings.
- Filing backlogs have been eliminated.
- Inspector's Violation Statements and photos can now be filed by downloading the server and processed along with the other inspection and enforcement documents.
- Initial testing has begun on a program that will allow inspectors to download files from the server, thereby negating the need to maintain paper files in his vehicle.

The eMIR program, DMS, and workflow have become major components in the day-to-day inspection and enforcement operations. Over the next evaluation period, DMS will be expanding its technology into other critical areas of its program, including citizen's requests for inspection and pattern of violation review.

B. Abandoned Mine Land Reclamation (AMLR)

The Kentucky AMLR program is successful in achieving lasting and effective reclamation of mined lands. Construction grants continue to include high priority projects. Kentucky continues to consider high priority project selection criteria for AML emergency complaints referred to them by OSM. During the EY, Kentucky completed 37 high priority AML projects and submitted 54 new projects for authorization to proceed. Nine of the projects will provide safe domestic water supplies for 1,094 residences at an estimated cost of \$7.6 million.

The management of DAML continues to implement significant improvements in its program. DAML's continued support of the procedures implemented in EY 1996 and EY 1997 improved the internal control and support for change orders, as recommended in a previous audit of the State AMLR program.

1. AML Inventory System (AMLIS)

Kentucky fully supports the direct access to the AMLIS that allows DAML to electronically input AML problem data. DAML has been directly updating the AMLIS since the fall of 1995. DAML submitted a letter dated July 6, 2004, certifying that they have a system that ensures the accuracy of data they input into the AMLIS.

2. Bond Forfeiture Reclamation

DAML also administers the reclamation of Title V permits in bond forfeitures using forfeited reclamation bonds. DAML continues to improve its effort in reclaiming forfeited permits. During EY 2004, DAML issued 11 new group contracts containing 54 permits with a total of 249.5 acres. In addition, DAML continued reclamation activities on two group contracts containing eight permits with 66.5 acres from the previous EY. DAML completed reclamation on six group contracts containing 14 permits with 165.5 acres and six small purchase contracts consisting of six acres. At the end of EY 2004, eight group contracts containing 54 permits with 174 acres were ongoing. Information in Table 7 shows that 459.71 acres were forfeited and reclaimed on permanent program sites during the EY.

3. AML Emergency Program

During this EY, OSM investigated 245 emergency complaints reported from abandoned mines. OSM referred 146 complaints to the State when the site conditions did not meet Federal emergency criteria during the preliminary investigation. OSM evaluated 99 complaints for declaration as Federal emergency projects. Fifty-three of these complaints were declared Federal emergency projects. Five complaints are still under OSM review as of the writing of this report. The remaining 41 did not meet Federal emergency criteria and were referred to the State for consideration under its non-emergency AML program.

4. Appalachian Clean Streams Initiative (ACSI)

The ACSI was developed to encourage the cleanup of streams in Appalachia polluted by AMD. Kentucky continues to support this initiative.

Kentucky initiated two new ACSI projects during the EY, the Hecla Tipple and Slurry Project in Hopkins County and the Rough and Tough Landslides Project in Floyd County. Two projects discussed in previous reports were completed during the EY. The western Kentucky projects, Coiltown and East Diamond Tipple, were completed on November 18, 2003, and December 3, 2003, respectively. The Spewing Camp project is an ongoing effort to reclaim a 60-acre coal refuse pile in eastern Kentucky. It was initiated in November 2002.

The Hecla Tipple and Slurry Project in western Kentucky was initiated on March 9, 2004. It involves the reclamation of four areas totaling 69.7 acres of acidic, barren, coal slurry, coarse coal waste, abandoned mine pits, and one abandoned tipple structure. An additional 64.2 acres of the project area consists of potential earth borrow areas in locations that have been previously disturbed by mining. The project areas will primarily be graded to a configuration that allows for positive drainage, capped with an agricultural limestone barrier, and then covered with a minimum of two feet of soil material. Construction of this project will result in an improvement of the quality of water entering Clear Creek and the surrounding wetland areas.

The Rough and Tough Landslide Project in eastern Kentucky was initiated on April 5, 2004. Funding of this project includes \$228,000 of State bond forfeiture and settlement funds, along with ACSI and State AML grant funds. The project totals 33.1 acres at four areas in west central Floyd County. Construction involves excavating to rock, disposal and capping of toxic and highly acidic spoil/coal refuse, and demolition and removal of hazardous facilities. Portions of the mixed spoil/coal refuse material have burned as evidenced by the presence of "red dog." The project is designed to control the flow of surface and ground waters and to treat AMD discharges.

The project includes the removal of a partially buried, old steel storage tank. The tank is visible from a public road and the contents are easily accessible via an unlocked hatch and a ladder leading to the bottom. The tank contains approximately

600 gallons of sludge, 300 gallons of light oils, and 2,600 gallons of contaminated water. Test results of the materials in the tank revealed a hazardous level of lead. The tank will be removed using appropriate methods, pending approval and consultation with the Kentucky Division of Waste Management.

Overall, the Kentucky program is effectively administered. DNR maintains a strong commitment to protect the environment and citizens of the coalfields while regulating and encouraging a viable coal industry. OSM expects to maintain an excellent working relationship with DNR and looks forward to a continued joint commitment to improve the Kentucky AML program.

C. Outstanding Issues

1. Disposal of Underground Development Waste

It was discovered during a random oversight inspection that specific design requirements were not being required for permits involving disposal of underground development waste. The issue was determined to be programmatic. In a letter dated December 16, 1993, DNR advised LFO of its willingness to adopt changes to the regulation. The planned changes would be similar to those promulgated by Virginia. Kentucky projected that draft regulations would be available around April 1, 1994. During the past year, DNR noted that it might develop policy guidelines with respect to existing regulations relative to the disposal of underground mine waste in backfill areas in lieu of promulgating new regulations. However, no official correspondence has been received.

2. Bankruptcies

Bankruptcies in the coal industry in Kentucky required considerable attention during the EY. Five companies had ongoing bankruptcy cases during the EY. One of the five companies was able to emerge from Chapter 11 during the EY. Regulatory authorities and another company entered into a Term Sheet and Settlement Agreement that mediated various disputes among the principal parties surrounding both the Chapter 7 and Chapter 11 proceedings and provided for complete reclamation on all disturbed sites. A number of other issues relating to these cases has developed that required extensive participation and monitoring by both DNR and OSM in the bankruptcy proceedings to ensure that the permits are mined and reclaimed according to SMCRA and its supporting regulations.

3. Surety and Bonding

SMCRA requires that reclamation performance bonds be posted by operators prior to undertaking a surface coal mining operation. These performance bonds must be adequate to allow completion of reclamation by the State RA, should the mining company default. SMCRA allows mining companies to self-bond, obtain bonds from insurance carriers, or pay fees to alternative bonding systems, such as State bond pools.

Bond availability and increased costs to obtain bonds are major issues for the coal mining interests in Kentucky. The tightening of criteria for issuance of surety bonds to mining companies and the perceived reduction in the number of insurance companies willing to write reclamation bond coverage to mining companies are two of the causes.

4. Fill Construction Practices

Following several meetings to build consensus with the coal industry and environmental community, DNR developed RAM #135, issued September 10, 2002. The purpose of the RAM was to implement revised standards for the design and construction of durable rock fills. On December 11, 2002, DNR issued Directive Number 36 to revise and clarify existing inspection and enforcement policies on excess disposal fills. The study was delayed until EY 2005 due to the lack of fills constructed under the new policy.

During the EY, OSM initiated a regional effort with the goal of consistent application of steep slope valley fill requirements. The purpose of the regional initiative is to improve the quality and consistency of OSM's oversight inspection process while addressing the issues related to valley fills in a manner that provides proper deference to State primacy. In May 2004, OSM conducted a Federal inspector exchange program between Kentucky, West Virginia, and Virginia. The OSM inspectors were exposed to different State-approved programs, different mines, and different techniques of inspections. Three areas were emphasized: 1) construction of under drains 2) certifications, and 3) contemporaneous reclamation. This effort will assist in meeting OSM's Government Performance Results Act goal of minimizing off-site impacts.

5. Unauthorized Fills

The COE continues working with DNR and OSM to identify mining operations with unauthorized fills. No placement of fill material into waters of the U.S. can occur without prior authorization from the COE.

6. Flyrock Events

Eight flyrock events were identified during the EY compared to one event in the previous EY. For the damage caused by the flyrock, refer to the Off-Site Impacts section of this report on page 22. DNR aggressively investigates flyrock events and takes enforcement and permitting actions to minimize the potential for reoccurrences.

V. Success in Achieving the Purposes of SMCRA as Measured by the Number of Observed Off-Site Impacts and the Number of Acres Meeting the Performance Standards at the Time of Bond Release

A. Off-Site Impacts

Kentucky's program for protecting the environment and public from off-site impacts was evaluated by collecting and analyzing known off-site damage resulting from the 1,992 surface and underground coal mine permits in Kentucky. DNR supplied LFO with Inspector's Violation Statements for NC's and Cessation Order's (CO) that contained off-site impacts. The Inspector's Violation Statements included all violations with off-site damage written for the period July 1, 2003, through June 30, 2004. LFO conducted the following:

- Developed an off-site damage database
- Screened the Inspector's Violation Statements for off-site impacts
- Verified and input the collected off-site impacts
- Analyzed the data

During the EY, DNR issued 721 NC's. These NC's cited 1,360 performance standards. The most frequently cited violation type was general permit provisions and then sedimentation control. A breakdown by performance standards based on the 50 State category types is presented below:

Percentage of Total Performance Standards Cited in EY 2004						
General Provision and/or Other	Sediment	Backfilling & Grading, & Contemporaneous Reclamation	Water Quality	Effluent Limits	Water Monitoring	Remaining 43 Categories
23.7	13.6	11.0	7.6	7.6	5.3	31.2

Two-hundred seventeen CO's were issued by DNR (183 Failure-to-Abate CO's, 32 IHCO's, and two Illegal Mining CO's).

For this EY, Kentucky provided 243 NC's and 46 CO's that contained off-site impacts. The 289 enforcement actions resulted in 400 performance standard violations. OSM determined that there were 420 measurable off-site impacts for the 400 performance standard violations. The determination of off-site impacts was based on DNR's documentation and the OSM reviewer's interpretation of the enforcement language using any inspection reports associated with the enforcement action. The review of the Inspector's Violation Statements prepared for the penalty assessment was the primary resource document.

The 289 enforcement actions with off-site impacts involved 136 permits. This is approximately seven percent of the permits in Kentucky. The remaining 93 percent of the permits were free of off-site impacts.

Those NC's identified with off-site impacts were analyzed for the following criteria:

- type of incident
- resource affected
- degree of impact

Of the 400 performance standard violations with 420 measurable off-site impacts, approximately 48 percent was surface water. The next major type of off-site impact was encroachment into prohibited areas (20 percent). The third types of off-site impact were public roadway and other (18 percent).

From the data collected, the total impacts assessed from coal mining operations for the EY included 79.7 miles of streams, 495.1 acres of land, eight wells, and six homes. The findings

for off-site impacts indicate that approximately 32 percent of the measured incidents involved land and 48 percent involved water. Also, 87 percent of the incidents were minor, seven percent were major, and six percent were moderate impact. The majority of impacts were minor. However, as indicated, the largest impacts occurred within a few permits.

As noted earlier in this report, DNR placed a high priority on the prevention of blackwater discharges into the streams of Kentucky. The Cabinet Secretary created the Blackwater Task Force, and DNR implemented specific procedures for the regional offices to follow when a blackwater discharge is discovered.

In the first nine months of the EY, DNR issued 12 NC's for blackwater discharges. Three of these discharges were significant enough to warrant issuance of an IHCO. Several miles of Kentucky streams were impacted. Also impacted were the COE projects of Fishtrap Lake in Pike County and Dewey Lake in Floyd County. Also of significant impact to Fishtrap Lake was at least two blackwater spills from coal companies operating in Virginia. The discharges originated in Virginia and flowed downstream into Kentucky, impacting Fishtrap Lake.

Flyrock, which includes rock thrown through the air and rock that is forced off the blast site and rolls down the hill, is a major off-site concern in Kentucky. During the last EY, one flyrock incident occurred. During this EY, eight flyrock incidences occurred. Four of the flyrock cases resulted in property damage to residences, while the other four flyrock cases had rocks come within 10 to 250 feet of residences, but no physical damage occurred. Out of the eight flyrock cases, two minesites had two events each during the EY. Of these recurring flyrock events, each minesite had one flyrock that resulted in damage and one flyrock that came within 250 feet of residences. In one of these cases, children were playing in a swimming pool when the incident occurred.

When a flyrock incident occurs at a minesite, blasting is immediately ceased in the area pending investigation by OSM and DNR (including OMSL). The company is then required to develop a remedial blasting plan stating changes that will be made at the minesite to prevent future flyrock.

B. Bond Release

The goal of reclamation is to reclaim land mined by a surface coal mining operation to a stable condition, vegetated, non-

polluting, and of equal or greater value than the pre-mining condition. To achieve the goals of reclamation, a system of phased bond releases has been implemented in Kentucky. To satisfy Phase I requirements in Kentucky, the reclaimed area must be backfilled, regraded, topsoiled, seeded, mulched, drainage-controlled, and a planting report submitted. Phase II requires the reclaimed areas have established revegetation in accordance with the approved reclamation plan and meet the standards for revegetation success, except for productivity standards. Also, the reclaimed area must not contribute suspended solids to stream flow or runoff outside the permit area. Phase III requires that the reclaimed area must successfully meet all surface coal mining and reclamation standards in accordance with the approved reclamation plan, that the reclaimed land must be capable of supporting the approved post-mining land use requirements, and that the applicable liability period must have expired.

In Table 5, Annual State Mining and Reclamation Results, Kentucky reported that it granted bond releases on 10,951.70 acres for Phase I reclamation, 3,735.6 acres for Phase II reclamation, and 11,122.4 acres for Phase III reclamation. OSM's review of these minesites through 81 joint inspections on Phase I and Phase III bond releases found that the State is meeting the requirements of its bond release program on permanent program permits.

VI. OSM Assistance

Table 9, Funds Granted to Kentucky by OSM, identified Federal funds awarded during FY 2004. The AML program received \$15,913,345, which is 100 percent of the total program cost. SOAP, which is also 100 percent Federally-funded, received \$733,844. The A&E grant, which funds the regulatory program, was for \$12,313,367. The regulatory program is 50 percent Federally-funded, except for the \$1,026,605 that Kentucky receives to administer the Federal Lands program. The Federal Lands program is 100 percent Federally-funded and is included in the A&E grant.

In January 2001, Bledsoe Coal Company (Bledsoe) applied for a lease on approximately 1,200 acres of coal owned by the USFS in Leslie County, Kentucky. If the lease is approved, mining will be conducted by underground operations extended from an existing Bledsoe operation near this area. The USFS also owns the surface land overlying the proposed lease area. Due to a dialogue that had been ongoing with various Federal agencies

about requirements of the National Environmental Policy Act, the Bureau of Land Management (BLM), the USFS, and OSM decided to participate in the development of an EIS on this proposed action. Since it owns both the surface and the minerals in the proposed lease area, the USFS agreed to be the responsible agency, with BLM and OSM serving as cooperating agencies. The Notice of Intent to develop the EIS was published on February 13, 2003, and the draft EIS was published October 10, 2003.

OSM is committed to provide adequate funding and technical assistance to the Kentucky program. Technical training courses are available to DNR upon request. Regional and LFO technical staff are also available to provide support to the Kentucky program.

VII. General Oversight Topic Reviews

During EY 2004, LFO completed 296 oversight-related inspections. Of this total, 180 were random sample inspections, and 41 were Phase III bond release inspections conducted jointly with DNR personnel. Forty-two field inspections resulted from special studies outlined in the EY 2004 Performance Agreement. The remaining 33 inspections were other oversight or State assistance inspections completed by LFO.

LFO issued 43 Ten-Day Notices (TDN) during the EY. These 43 TDN's contained 63 alleged violations. Forty-one of these TDN's were the result of citizen complaints. The other two were the result of a complete oversight inspection and a special study involving certification of hollow fills. At the end of the EY, nine TDN's were pending a decision on the appropriateness of DNR's response. One of the pending TDN's was from a previous EY. During the EY, 57 TDN's were satisfactorily resolved, with a determination made that DNR had either taken appropriate action or shown good cause for not taking action. Twenty-two of these resolved TDN's were from the previous EY.

During the EY, eight citizens requested that the Appalachian Regional Coordinating Center's (ARCC) Regional Director (RD) informally review the Field Office Director's (FOD) decision on their citizen complaint. The RD agreed with the FOD's decision in all eight reviews. DNR requested informal review of one FOD decision. This decision involved water damage to a retaining wall. The FOD disagreed with DNR's decision that the damage

was not related to mining. DNR requested an informal review and submitted additional information regarding their technical evaluation. Based on the information submitted by DNR, the RD reversed the FOD decision, concluding that DNR had shown good cause for not taking action.

LFO conducted 62 oversight inspections on State AMLR projects in accordance with the EY 2004 Performance Agreement as follows:

- 5 pre-authorization inspections
- 7 pre-construction inspections
- 33 active construction inspections
- 15 final construction inspections
- 1 post-construction inspection
- 1 citizen complaint inspection concerning a State AML project

OSM identified eight concerns during inspections of five projects. All of the concerns were satisfactorily resolved with the State. All were site-specific and construction-oriented in nature, with no programmatic concerns identified.

Two special oversight studies were initiated this EY, but were not completed due to the complex nature of the studies and/or the workload of the staff involved. The studies include:

- Slurry Impoundments-Phase III (Regional Oversight Team), which is a continuing review.
- Underground Mine Permit Review-Outcrop Barriers, Subsidence Control Plans, and Portal Closure.

The following oversight studies were completed during the EY.

A. Topsoil Substitution

This was a joint DNR and LFO review of permitting and inspection procedures for replacing or supplementing topsoil with selected overburden material. The study was initiated in EY 2002 and completed in EY 2004.

The study found that while current permit review and enforcement procedures implemented by DNR have facilitated the success of using topsoil substitutes as a soiling medium for establishing and maintaining revegetated minesites, improvements could be made in both the technical and field review processes. Based on the team's permit reviews, field

inspections, and the findings generated by the study, OSM made the following recommendations:

- DNR permit reviewers should continue to use their discretion in determining any additional soil parameters they believe are necessary to demonstrate the suitability of proposed material as a soil substitute. This includes substitution plans proposing the use of durable rock (slake durability index of 95 or greater).
- According to 405 KAR 16:050 Sections 2(5) and (5) (a), a chemical analysis of the existing topsoil is required to make the demonstration that the topsoil substitute is equal to or more suitable than existing material. In half of the permits in this study, the chemical lab analysis for existing topsoil is absent. OSM recommends that DNR require the applicant to submit a chemical (laboratory) analysis of the existing topsoil.
- 405 KAR 16:050 Section 2(5) (b) requires a discussion from a qualified soil scientist or agronomist stating that the proposed substitute or supplement materials are equal to or more suitable for sustaining sufficient vegetation than the available topsoil; the resulting soil medium is the best available material to support sufficient vegetation; and the trials and tests were conducted using approved standard testing procedures. All the permits reviewed contained a statement, but did not contain the required discussion. OSM recommends that DNR require this discussion in future permitting actions.
- Though acidic and toxic material handling plans were usually not found in the topsoil substitute plan (Item 23 of the MPA-03), these plans were submitted in Item 29. OSM recommends that Item 23 include a reference to Item 29 in the application.
- In a few permits, the topsoil substitute plan was not a feasible plan or one easily enforced in the field. These permits often identified particular strata for the topsoil substitute. It would be operationally difficult for the permittee to salvage this strata and equally difficult for the inspector to determine if the strata had been salvaged. OSM recommends that during the permit review process, DNR emphasize attention to the achievability of the topsoil substitution plan.

- A plan to reduce compaction was not included in the topsoil substitution plan in most of the permits. 405 KAR 16:050 Section 4(2)(b) refers to the prevention of excessive compacting, and Section 4(1) details that land must be scarified before the re-distribution of (substitute) topsoil; however, if approved by DNR, scarification may occur after re-distribution. Most permits contain standard language that compaction will be kept to a minimum. Nevertheless, compaction is an important factor in success of reforestation. It is recommended that a detailed oversight study concerning compaction and intended post-mining land use be initiated.
- The approved topsoil substitution plan was not always being followed in the field. DNR should continue to place emphasis on the requirements of the plan and take appropriate enforcement actions when the plan is not being followed. This includes not only the topsoil substitute, but also identifying and salvaging existing topsoil (if present).

DNR responded to each of the recommendations with a plan of action that addresses the concerns with detailed permit application review and enforcement. DNR will emphasize the documentation required for the technical reviewer and field inspector, as well as communicating those needs to the coal industry.

B. Phase I Bond Release Inspections

This study included 40 Phase I bond-released minesites that were inspected as part of OSM's random oversight inspection program. OSM inspections on these minesites were to determine if all applicable bond release standards were met at the time the Phase I bond release was granted by Kentucky. OSM found that Kentucky is meeting its requirements for Phase I bond release on permanent program permits.

C. Phase III Bond Release Inspections

This study reviewed 41 Phase III bond release applications. OSM inspections on these Phase III bond release applications were conducted jointly with the Kentucky inspector and the bond release specialist. OSM found that Kentucky is meeting its requirements for Phase III bond release on permanent program permits.

D. Fill Inventory

OSM conducted 224 file reviews on permitting actions issued by the State in eastern Kentucky for CY 2003. The file review collected pertinent fill and watershed information on 316 proposed or existing excess spoil fills. See Appendix E for the review findings.

E. Random Sample

LFO's oversight format provides for a general assessment through random oversight inspections. In addition, it focuses on specific program areas jointly selected for special emphasis in oversight studies. During this EY, LFO conducted 180 random comprehensive inspections for a general assessment of Kentucky's program. The random samples were selected from the list of active and Phase I bond release permits on both surface and underground coal mining operations in Kentucky. The purpose of these inspections was to evaluate the degree of industry compliance with the approved State program.

OSM found that 141 of the 180 (78 percent) minesites in Kentucky were in full compliance with all performance standard categories. On the other 39 sites, 119 violations were observed. The performance standards most often in NC were hydrologic balance, backfilling and grading, and permit administration. OSM inspectors evaluated the seriousness of violations on random complete inspections. The data for the 119 violations shows that 62 percent of all the violations did not have an off-site impact, and 38 percent extend outside the permit area. In addition, 24 percent of the violations were minor, 58 percent had a moderate degree of impact, and 18 percent had a major degree of impact. For all 119 violations identified during complete inspections, the State took appropriate action in all cases.

F. Slurry Impoundments - Phase II

During EY 2004, the OSM and DNR review team completed the Phase II review of 47 "high priority" impoundments. These impoundments were identified in Phase I as having underground mining within 100 feet of the approved pool. The effort was initiated in EY 2003 with the completion of 23 reviews. Review of the remaining 24 impoundments was completed in EY 2004. The

review team updated information gathered during the Phase I inspections and monitored the progress of DNR-required permitting actions. DNR has required several of the permittees to submit breakthrough prevention plans and conduct drilling in the impoundment area to locate underground mine workings. The team found that permitting actions have been completed on some sites and continue on others. DNR conducts a thorough and independent analysis of these impoundment permitting actions. MSHA and DNR continue to exchange relevant information in impoundments within their jurisdiction.

G. Slurry Impoundments - Phase III

ARCC, under its Oversight Guidance Document, is reviewing the states' actions concerning the prevention of impoundment breakthroughs into underground mines. Under this review, OSM examines the states' procedures to evaluate breakthrough potential and their implementation of the procedures. At selected permits, the review includes a technical examination of breakthrough potential and an assessment of the states' actions to prevent breakthrough. During the EY, OSM completed two of these reviews in Kentucky.

The Lackey Branch Impoundment (Beech Fork Processing, Inc.) and the Big Branch Impoundment (Motts Branch Coal Company, Inc.) were selected because of their high breakthrough potential rating due to the close proximity of underground mines beneath and adjacent to the impoundment. OSM found that DNR thoroughly evaluated breakthrough potential and required the necessary breakthrough prevention measures.

H. Joint Blasting Review

This review was conducted by OSM, DNR technical staff, and DNR blasting inspectors. The review was conducted to ensure:

- 1) Consistent inspections by the blasting inspectors between regions,
- 2) Consistent regulatory interpretations between OSM and DNR, and,
- 3) Compliance with the blasting regulations. Blasting operations were inspected at 21 permits during the review. The review found that the blasting inspectors have a good understanding of the blasting regulations and practices. Further, because of the efforts of the blasting inspectors, the

review found a significant improvement in the completeness and accuracy of the blast records. The review did not identify any wide-spread problems. Some inconsistencies were identified, and the DNR technical staff is working with the blasting inspectors to address the issues.

I. Preparation Plants

LFO and DNR agreed in the EY 2004 Performance Agreement to conduct a follow-up evaluation of the EY 1997 joint special study on unreclaimed coal preparation plants that had been sitting idle for years. The purpose of that study was to evaluate idle preparation plants to determine if reclamation activities should be initiated on those permit areas. This follow-up study included a review of the original 25 permits evaluation in the EY 1997 study. The review evaluated the three findings from the EY 1997 report. The findings were as follows:

- The bonds were not adequate for 60 percent of the permits.
- The reclamation plans were not adequate.
- Three permits had actually caused off-site damage (AMD).

This study found that DNR has implemented bond review procedures for the deficiencies identified in the EY 1997 Preparation Plant Study. However, several permits still contain inadequate reclamation plans and remain an issue. DNR has upgraded bond amounts to ensure complete reclamation of idle preparation plant permits in case of forfeiture. The reclamation plans had not received the same attention as the bonding of EY 1997 study permits. Sixty-seven percent of the original permits that should have updated reclamation plans have not been updated. Since the EY 1997 study, the three permits that had AMD problems have been resolved.

In a letter dated July 22, 2004, the Division of Permits stated that they will initiate special mid-term reviews for those eight permits identified with inadequate reclamation plans. Reclamation plans for all remaining preparation plant facilities will be reviewed under the normal mid-term review process. The Division of Permits is developing specific review guidance in the form of a mid-term evaluation procedure document that will be distributed to the technical review staff.

J. Inspection Frequency

DNR reported Kentucky's inspection frequency at the end of the EY. The inspection frequency was based on 405 KAR 12:010, Section 3(5). This provision requires the State to conduct one complete and two partial inspections per calendar quarter for all minesites, except Phase I or Phase II bond release sites. Those sites in the bond release process or in temporary cessation require the State to conduct one complete inspection per quarter. DNR reported the following number of inspections.

Coal Mines and Facilities	Number of Complete Inspections	Number of Partial Inspections
Active	7,465	14,438
Inactive	344	178
Abandoned	49	64
TOTAL	7,858	14,680

Inspectable Unit Information

- Total Number of Permits Requiring Inspections 1,992
- Total Number of Permits Meeting Frequency 1,964
- Percentage of Permits Meeting Frequency 98.6

From the information provided, Kentucky's inspectors conducted 22,538 inspections and met inspection frequency on 98.6 percent of the inspectable units.

In EY 2003, OSM reported that DNR inspectors met frequency on 97 percent of the inspectable units. In EY 2004, DNR inspectors met frequency on 98.6 percent of the inspectable units.

K. Probable Hydrologic Consequences (PHC) Review

LFO and DNR completed a joint review of permits to determine whether the statement of PHC contained in the permit was based on adequate baseline data and reclamation plans. The team also looked for ways to improve the permit review process. The permits selected appeared to be long-term producers of AMD and were initially permitted early in the Kentucky program.

The review found that DNR was following its approved program as it relates to the level of data and planning needed to ensure that AMD production is prevented and minimized. The study found that Kentucky has statutes and regulations in place that appear

no less effective than Federal standards developed to prevent or minimize AMD. Kentucky also has draft policies and procedures in place that specify minimum levels of baseline data and reclamation plans that are required in permit applications. Two areas of concern were identified:

(1) Geochemical analysis of coal and associated strata. All the permits reviewed contained chemical analysis of the acid-producing potential of the overburden associated with the coal seams being mined and the sulphur content of the coal seams themselves. While some of the data presented indicated that the coal seams might produce AMD, not all applications contained information in the PHC determination or the permit review documentation to show that AMD either would not be produced or that the problem could be remediated through reclamation.

(2) Calculations associated with methods of operation and amount of coal extracted. If most of the coal was to be extracted, as is the case of longwall mining or secondary recovery, the acid-producing potential of the remaining coal was not always addressed. At one time, DNR allowed the applicant to ignore the acid-producing potential of the coal seam being mined, even when analysis showed that the seam was acid-producing.

Since 1990, DNR has been revising and improving its policies, guidance documents, and permit review methods to better access the potential for AMD and improve mine plans to eliminate or significantly minimize this problem. Changes made have included the development of an acid mine site inventory, improved training both within-house and from OSM, and adoption of the AMD/Long-term Treatment Policy in 1997. Changes in policy have specifically addressed the two major concerns identified in the review and discussed above. The acid-producing potential of the coal seam being mined and the impact of residual coal in high extraction mines are now addressed in all PHC determinations.

Copies of individual topic reviews may be requested in writing to the following address:

Office of Surface Mining
Lexington Field Office
2675 Regency Road
Lexington, Kentucky 40503-29

