

Pittsburgh Field Division – Harrisburg Office



2007 Pennsylvania Annual Evaluation Report



**Office of Surface Mining Reclamation & Enforcement
U.S. Department of the Interior**



OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

Annual Evaluation Report

for the

Regulatory and Abandoned Mine Land Reclamation Programs

Administered by the Commonwealth

of

Pennsylvania

for

Evaluation Year 2007

(July 1, 2006 to June 30, 2007)

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The cover photograph shows the Energy Resources Incorporated Mine 38 Permit Number 24980101. Located near Brandy Camp, Pennsylvania, this 57 acre re-mining operation eliminated 5,000 feet of abandoned highwall and associated spoil, and included reforestation with a combination of Black Locust, White and Red Pine, Hybrid Poplar and Birch Trees.

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I. Introduction

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) created the Office of Surface Mining Reclamation and Enforcement (OSM) in the Department of the Interior. SMCRA provides authority to 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 Pennsylvania Program and the effectiveness of the Pennsylvania Program in meeting the applicable purposes of SMCRA as specified in Section 102. This report covers the 2007 evaluation year, from July 1, 2006, to June 30, 2007. Detailed background information and comprehensive reports for the program elements evaluated during the period are available for review and copying at OSM's Harrisburg Office of the Pittsburgh Field Division (PFD).

The OSM Harrisburg Office develops an annual work plan in conjunction with the Pennsylvania Department of Environmental Protection (PADEP), to review and assess Pennsylvania's administration of its approved Abandoned Mine Reclamation, and Coal Mining Regulatory programs. The work plan also focuses on technical and program assistance activities jointly undertaken by OSM and PADEP staff to improve the effectiveness of Abandoned Mine Lands (AML) and Acid Mine Drainage (AMD) reclamation, and coal mining regulatory programs. A copy of the 2006 work plan is available from the OSM Harrisburg Office.

A list of acronyms used in this report is located in Appendix A.

II. Overview of the Pennsylvania Coal Mining Industry

The coal geology of Pennsylvania is dominated by the Appalachian Mountains running northeast to southwest and dividing the State into two distinct coal regions. The western bituminous region of the State, where the majority of mines are located, is characterized by mountains and gently rolling hills. Areas within this region containing acidic overburden often require special reclamation efforts. The bituminous coal seams underlay about 12,000 square miles in 28 counties of the State. The coal is found in four fields; the Main Bituminous Field in the southwest counties; the Georges Creek Field in the southern counties; the Broad Top Field in the south-middle counties; and the North-Central Field in the north-central counties of the State.

The anthracite coal region is located in the northeast quarter of Pennsylvania and covers approximately 3,300 square miles. The coal is found in four fields; the Northern Field; the Eastern-Middle Field; the Western-Middle Field; and the Southern Field. The Southern Field has the greatest amount of reserves that can be mined. The coal lies almost entirely in synclinal basins oriented in a general direction of N 70 degrees E. The more than 20 different coal seams vary in thickness from a few inches to 50 or 60 feet. The anthracite region is characterized by steeply pitching seams, some with dips in excess of 60 degrees. Such seams require highly specialized mining techniques, and present unique challenges for solving problems such as mine subsidence associated with abandoned anthracite mines.

For more than a century, coal has played a major role in the economic and industrial development of Pennsylvania, particularly the steel making industry, and has historically employed thousands of workers. Although Pennsylvania has experienced a decline in coal production over the past decade, it continues to be a leading coal producing State, due to its estimated bituminous reserves that total 23 billion tons, or 5.3 percent of U.S. reserves, and anthracite reserves that total 7.1 billion tons, or 97 percent of U.S. anthracite reserves.



Anthracite Coal Mine Site

In calendar year 2006, Pennsylvania produced approximately 69.6 million tons¹ of bituminous and anthracite coal on surface and underground mines, which is a 1.5% decrease over last year. Of the total coal production, bituminous mining accounted for 67.4 million tons, and the remaining 2.2 million tons were mined in the anthracite region. In addition, coal refuse reprocessing sites were responsible for producing 7.5 million tons of material, of which 2.2 million tons were reported in the bituminous region and 5.3 million tons were reported in the anthracite region. This is also a decrease from the 8.8 millions tons of coal refuse material reprocessed in 2005.

Underground mining accounted for almost 82% of the total coal mined from surface and underground mines in the bituminous region and 80% of coal mined statewide. The 8 underground mines in Greene County accounted for 75% of all coal mined from underground operations. Conversely, in 2006, bituminous and anthracite surface mining companies produced 13.8 million tons of coal, which was 20% of surface and underground coal mined in Pennsylvania. The largest surface coal production of 3.1 million tons occurred in Somerset County with Clearfield County in second place, reporting 2.5 million tons.

In 2006, 157 bituminous mine operators reported production at 416 mine sites. That number

¹ This figure represents a PADEP compilation based on reporting efforts by PADEP and Mine Safety Health Administration

includes 38 underground mines, 357 surface mines, 20 refuse reprocessing sites and is down from the 431 active mining operations reported in 2005 including 388 surface mines. Eighty three anthracite mine operators reported production at 112 mine sites. That number included 54 surface mines, 44 coal refuse reprocessing sites, and 14 underground mines.

Anthracite mining production increased slightly during this period, reporting 2.2 million tons of coal produced on 68 mine sites. Of these sites, 0.27 million tons were produced at 14 underground mine sites, while 88% of the coal production occurred on 54 surface mines, reporting 1.9 million tons.

In 2006, 6,987 people were employed in the coal mining industry.

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

During this evaluation period PADEP and OSM continued several ongoing initiatives that provided opportunity for public involvement.

A. Public Involvement in PADEP's Regulatory Process

Citizens Advisory Council

PADEP solicits and/or receives public input on proposed changes to the Pennsylvania mining program from the Citizens Advisory Council (CAC). The Council consists of eighteen appointed citizen volunteers who serve staggered three year terms. These members are appointed by the Governor, the Speaker of the House of Representatives and the President Pro Tempore of

the Senate. No more than half of the appointees are from the same political party. Since its creation in 1971, the CAC has been actively involved in Commonwealth environmental issues. The Council is the only legislatively mandated advisory committee with the comprehensive charge to review all environmental legislation, regulations and policies affecting PADEP.

During this evaluation year, the CAC conducted 10 meetings and provided comments to PADEP on a number of issues. The CAC gave its support to AML reauthorization, and assisted PADEP in arranging and conducting its public meetings to solicit input regarding the distribution and use of the additional grant funds expected due to AML reauthorization.

Mining and Reclamation Advisory Board

The Mining and Reclamation Advisory Board (MRAB) was created in 1984 by Act 181, which amended the Surface Mining Conservation and Reclamation Act (SMCRA), of the Pennsylvania General Assembly. The board's purpose is to assist and advise the Secretary of the Pennsylvania Department of Environmental Protection on all matters pertaining to mining and reclamation. The advisory role of the board also covers Title IV of the Federal SMCRA, relating to abandoned mine land reclamation issues. The MRAB is comprised of the Citizen Advisory

Council, the coal industry, county conservation districts, and the Pennsylvania General Assembly. The full board meets four times per year and the subcommittees meet regularly to address a number of coal program areas each year. The meeting minutes, handouts, and MRAB's annual report are available on the PADEP website.

The following were the major topics of discussion and review this year that are associated with the coal mining and reclamation program.

- The new Blanket Bond program in which an operator is allowed to secure and administer a single bond that includes all its permits. Technical Guidance was issued for this program and Amerikohl Mining Company was involved in a test run and was pre-qualified to receive approval. However, at the end of the evaluation year, no mining company had submitted a blanket bond for approval.
- Changes in Technical Guidance regarding methods to provide homeowners with long term operation and maintenance costs for replacement water supplies, and changes in waiver and consent to lesser water supply forms. PADEP now provides two options for satisfying the requirement to pay increased costs of purchasing water, or operating a treatment system. They are for the operator to pay the increased costs on a continuing basis and post a bond for the long term costs, or for the operator and property owner to negotiate a settlement. The consent to a lesser water supply form provides detailed information to the owners regarding protections under Pennsylvania law, how the water supply will be lesser under the law and regulations as well as how increased operation and maintenance costs are calculated and addressed, if the replacement supply will give the owner less access or control, if the replacement supply will require maintenance, or be less reliable or less permanent than the original supply. Each section must be signed and dated by the water supply owner, and the entire form must be signed by the operator, notarized and recorded to be acceptable to the Department.
- Changes in the regulations to eliminate the per acre reclamation fee with replacement of the Alternative Bonding System, with a full cost Conventional Bonding System. The Board did not approve the Department proceeding with this rule making.
- Revised regulations regarding how surface blasting operations for new mine openings and shafts are to be conducted. The final regulation package was presented to the Board for action prior to submitting it to the Environmental Quality Board for action. The Board deadlocked and could not pass a motion to endorse the rulemaking or pass a motion to oppose the rulemaking.
- Development of the 2007 Bond Rate Guidelines. Information was presented to the Board regarding how the guidelines were updated and experience with bond forfeiture reclamation contracts. The Board endorsed the guidelines.
- Reclamation of primacy bond forfeited permits under the administration of the Bureau of District Mining Operations. This subject is discussed in Section VII. B. of the report.
- The impact of changes in OSM's revegetation regulations on the Pennsylvania coal program. The Board was briefed about the changes and advised that the Department saw no reason to modify its regulations. Mention was made of the outstanding required amendment regarding the Federal requirement that 80% of the trees must be

- in place for 60% (three years) of the time at final bond release. Pennsylvania does not have a similar regulation.
- Reauthorization of the AML Fund, and associated public outreach to solicit input regarding how to allocate the anticipated increases in grant funds. This topic is discussed in Section. IV. I.
 - Development of treatment trusts to address post mining polluttional discharges. This topic is discussed in Section VII. E.

Environmental Hearing Board

The Environmental Hearing Board (EHB) is an independent quasi-judicial agency that includes a Chairman and four members. Members are administrative law judges with a minimum of five years of relevant legal experience. The EHB has the sole power to hear and decide appeals of PADEP's actions. Litigants have the right to appeal EHB decisions to the Commonwealth Court. During this evaluation period, the EHB issued a number of decisions pertaining to the approved state program. The most significant decisions are summarized below.

In *Timothy Keck versus the Pennsylvania Department of Environmental Protection*, EHB Docket No. 2005-280-L issued June 26, 2007, the Board found that a person cannot be cited for surface mining coal without a permit unless the person extracts or retrieves some coal.

In this case, Mr. Keck was exploring for and removing rock on his property, the site of a former surface mine known as the Beck mine. On August 19, 2005, a PADEP inspector found Keck had excavated a pit 125 feet by 80 feet by 10 feet deep to a coal seam. The top of the coal seam had been cleaned off, but no coal had been removed. Mr. Keck was cited on August 24, 2005, for mining without a surface coal mining permit and ordered to cease all surface mining activities and reclaim the site. Mr. Keck reclaimed the site the same day. A civil penalty of \$1,500 was assessed.

In its decision, the Board referenced Title 25 Chapter 86.11(c) which requires a permit to carry out coal mining activities; and the definition of **Surface Mining Activities** in PA SMCRA, which means the extraction of coal ... The decision states there has never been a case where the Board or a court found a person to have illegally mined without a permit where the person did not remove any coal or non coal minerals. In support of the decision, the Board cited several cases where even minimal amounts of coal removal constituted Surface Mining Activities. The decision further states that had Keck removed even one bucketful of coal, it would have had no hesitation in concluding that his site preparation/exploration activities constituted surface mining operations.

In *John Glantz versus the Pennsylvania Department of Environmental Protection* EHB Docket No. 2006-159-C issued November 13, 2006, the Board granted the Department's motion to dismiss an appeal of a compliance order because it was received more than 30 days after receiving the notice. The petitioner had asked for the appeal *nunc pro tunc* because he was under the impression that ongoing discussions between his attorney and the Department had obviated the need for an appeal. *Nunc pro tunc* means "now for then" and seeks a retroactive legal effect. The Board ruled *nunc pro tunc* may be granted in very limited circumstances such as where there

is fraud, a breakdown in the Board's operation, or a non-negligent failure to file a timely appeal, and that Mr. Glantz's lack of understanding of the appeal process was not sufficient basis for the tardy filing of his appeal.

In *Morris Township versus the Pennsylvania Department of Environmental Protection* EHB Docket No. 2005-044-MG issued January 19, 2006, the Board dismissed an appeal for a permit revision which authorized a permittee to use biosolids in reclamation activity. The Department has recently revised the permit to remove the approval to use biosolids which renders the appeal moot. In this case, the Department had revised the permit on February 3, 2005 to allow the use of biosolids in reclamation activities. Morris Township filed an appeal on March 7, 2005, but because it did not ask for a supersedeas, (order to suspend the permit revision) the permittee continued to apply biosolids until it notified the Department on August 8, 2005, that its biosolids operation was complete. The Department revised the permit on August 24, 2005, to remove approval for the use of biosolids, rendering the appeal moot in the Department's eyes. The Township wanted the Board to review the case as an exception to the mootness doctrine because of the great public importance of this issue and an unspecified hazard posed to the health and welfare of the Township's citizens. The opinion states the courts have rarely applied the public importance exception to the mootness doctrine, and when they have done so, it is normally to address an issue of statewide importance, or the case involves other peculiar circumstances that make judicial review prudent. The Board found that although the application of biosolids in this case is doubtless an important concern to the local residents, the Township has not described a legal issue of importance beyond the Township, nor has it described evidence of any real continued hazard which the Board has the ability to alleviate.

In *Roberta A. Cappelli versus the Department of Environmental Protection and Maple Creek Mining* EHB Docket No. 2005-035-R issued July 7, 2006, the Board granted Maple Creek a time extension to file an expert report. The Board found the Appellant will not be prejudiced as she will have ample time to review the expert report prior to trial. Mrs. Cappelli's appeal is in regard to alleged damages to her property as a result of subsidence from underground mining operations of Maple Creek Mining Inc. The appeal was filed in February 2005. Numerous deadline extensions, and lengthy but unsuccessful settlement negotiations are involved in the case. Maple Creek Mining's position was that Mrs. Cappelli would not be prejudiced by a further extension of time, and that its position would be greatly prejudiced if it could not present expert testimony in support of its position. Mrs. Cappelli opposed the extension because she claims Maple Creek did not negotiate in good faith. The Board advised that settlement, if possible, could have been reached long ago, and that the issues are not very complex. The Board notes that one trial date had already been canceled at the Appellant's request so they could further pursue settlement, and that Mrs. Cappelli's counsel had already agreed to previous extensions. The Board saw no prejudice to Mrs. Cappelli in granting a short extension, and observed that its decision would likely rely on expert testimony.

Environmental Quality Board

The Environmental Quality Board (EQB) is a 20 member independent board that adopts all PADEP Regulations. The Board, which is chaired by the Secretary of PADEP, includes members from 11 state agencies, the CAC and the State Senate and House of Representatives. PADEP, through the EQB, requests comments on all proposed regulations and holds public hearings or public meetings to provide citizens with the opportunity to provide input. The EQB addresses all comments received on proposed rules in the preamble of the final rules that are published in the *Pennsylvania Bulletin* and are available for public review on the PADEP Internet site. As part of the development of the regulations required by statute or by regulatory initiatives, PADEP holds outreach discussions or other public meetings to explain regulatory initiatives, where there is significant public interest.

During this evaluation year, the EQB approved two proposed regulatory packages pertaining to coal mine reclamation fees and reclamation of bond forfeiture sites, as well as changes to the blasting regulations. These packages were forwarded to the Independent Regulatory Review Commission (IRRC) and were published in the *Pennsylvania Bulletin* for comment. Both regulatory packages are discussed in greater detail in the program amendment update part of this section.

Public Comment in Permit Review Process

PADEP received 453 applications for permitting related actions that provided for public comment. The applicant is required to publish notice of the permit application in the local newspaper. PADEP publishes notices of permit applications and major permit revisions in the *Pennsylvania Bulletin*; notifies local municipal governments of permit applications; and holds public meetings with citizens to discuss pending applications.

PADEP Electronic Mail (E-Mail) Notice

PADEP provides electronic notification to residents when new permit applications are received for review. After registering their e-mail addresses with PADEP, citizens receive e-mail notices of all permit applications received by PADEP. The citizens can limit their notices to selected geographic areas, specific application types, etc. Additional notices are also sent at other important milestones in the review process. In the fall of 2003, the e-mail notice system was expanded to provide citizens with electronic notification of environmental regulations under consideration in the Commonwealth. Similar to the permit applications notice, citizens can receive notice of up to ten specific milestones in the regulatory process.

Public Comment in the Bond Release Process

PADEP received 1054 annual bond calculations and completion report applications during the past year. As part of the required annual bond calculation report, each permittee must notify every property owner of how much of the property owner's land has achieved Stage I, II and III standards during the preceding year. This required notice to the property owner also includes

who in the Department to contact if the property owner disagrees with the adequacy of reclamation.

The permittee must publish each bond release application in a local newspaper once a week for four consecutive weeks. This advertisement must include permittee name, and permit number, precise location and number of acres, total amount of bond and amount of requested release, summarize the reclamation, and state where written comments should be filed. The permittee must also provide proof of notification to surface owners, adjacent property owners, local government bodies, planning agencies and sewage and water treatment facilities. At any time, a citizen may file a complaint with the local PADEP Mining District Office about the adequacy of reclamation or about mining activities. The local PADEP office will contact the complainant within two days and complete the investigation within the next two weeks unless additional time is needed for additional analysis.

Citizen Complaint Resolution

The public may submit both informal and formal complaints on ongoing and completed mining operations, and bond release requests with respect to inspection, compliance monitoring and enforcement activity. During the evaluation year, PADEP received 501 citizen complaints, 438 of which were investigated, and 425 were successfully resolved at the close of this evaluation year. Complaints can be directed to many aspects of the mining activities including stream pollution from erosion and mine drainage, blasting effects on structures and water supplies, damage to public roads, mining off-permit, and dust.

B. Outreach by OSM

General Outreach

OSM continued interacting with citizens, industry and other State and Federal agencies on oversight and State program initiatives. The OSM attended the MRAB meetings to provide input on oversight initiatives and explain new OSM programs.

Throughout the Federal and State regulatory process, OSM's outreach to the public is very important in considering and implementing changes to the Pennsylvania Approved Regulatory Program.

OSM's Pittsburgh Field Division (PFD) publishes a quarterly electronic newsletter that covers Pennsylvania, Maryland and Ohio. The newsletter highlights proposed Federal regulatory changes and policy guidance, court and IBLA (Interior Board of Lands Hearings and Appeals) decisions, the status of state program amendments, findings from OSM oversight studies, interaction with watershed groups and other partners, discussions of AML and AMD reclamation projects constructed, and innovative activities that states are involved in. The PFD maintains a mailing list of interested Federal and State individuals and agencies, as well as industry staff, private consultants, foundations, non-profit organizations, and individuals interested in coal

mining and reclamation and abandoned mine reclamation issues. This newsletter has been well received over the years it has been published.

Appalachian Clean Streams Program

OSM continues to provide assistance to PADEP and numerous local groups and associations in promoting the cleanup of AMD impacted streams through the Appalachian Clean Streams Program (ACSP). Awards granted through fiscal year 2006 total \$16.3 million. In Fiscal Year 2007, PADEP received \$948,777 in ACSP funds as a part of its Abandoned Mine Land Program Grant. Sixty-one AMD remediation projects have been identified by PADEP for funding using these ACSP funds and 35 projects have been completed, 18 are underway and 8 are in design. The total amount of ACSP funds dedicated to these projects is \$15,301,646. Additional information about this program is located in Section VI. C.

Watershed Cooperative Assistance Program

The OSM Harrisburg Office staff attends workshops, and individual watershed meetings throughout the year in support of AMD clean-up efforts and PADEP programs. Also, under the umbrella of ACSP, OSM has budget authority to enter into project agreements with local non-profit watershed groups to remediate AMD. Under this program OSM has funded 70 Watershed Cooperative Assistance Program (WCAP) projects in Pennsylvania for a total amount of approximately 6.4 million dollars. The total contribution to these projects, from all partners, is about \$28.2 million with OSM contributing about 23 percent of the total costs. During the evaluation period, 3 new cooperative agreements were awarded in the total amount of \$159,803. These projects involve multiple partners, providing financial and other assistance. To date in Pennsylvania there have been about 296 funding and in-kind partners involved in the WCAP. Partners are counted with each project in which they are participating. PADEP is providing financial and technical assistance on a significant number of these projects, and the OSM Harrisburg Office has noted a significant number of applicant referrals from Growing Greener watershed coordinators due to budget constraints and the requirement for funding partners.

The Harrisburg staff is also providing significant technical assistance to PADEP and watershed groups in characterizing the chemical properties of mine drainage, and providing possible treatment solutions. Additional information about this program is located in Section VI. D.

IV. Major Accomplishments and Innovations in the Pennsylvania Program

A. Surface Water Protection Guidance

The loss of water in intermittent, and perennial streams and springs, and pooling issues associated with underground coal mining using long wall mining techniques is a major issue of concern among citizens in southwestern Pennsylvania and state and federal wildlife management agencies. In response, PADEP extensively studied the issue, including monitoring selected

streams as they were undermined. The result was a decision that its guidelines needed to be revised to better reflect laws and regulations regarding the protection of surface waters. On October 8, 2005, PADEP released Technical Guidance 563-2000-655, which describes procedures for protecting perennial and intermittent streams and wetlands from potential adverse effects caused by underground bituminous coal mining operations. The guidance focuses on potential flow loss and pooling in streams and potential changes in wetland hydrology that can occur when underground mining takes place in certain hydrologic settings. It describes evaluations and demonstrations that must be made at the time of permit application and procedures for dealing with impacts that occur unexpectedly. It also establishes guidelines for baseline data collection, demonstrations, monitoring programs and mitigation plans, which are proportional to the potential for impacts.

Since the release of the technical guidance, PADEP efforts have focused on implementation of the new procedures and requirements. PADEP has arranged for field staff, mining company representatives and outside consultants to be trained in the use of the biological assessment protocol outlined in the technical guidance. PADEP has also met with mining companies and their consultants to explain implementation procedures and answer questions regarding new requirements. PADEP has also reviewed biological data collected prior to the effective date of the guidance for purposes of evaluating its utility under the new stream assessment protocol. In addition, PADEP is engaged in the development of application forms and modules which are designed to accommodate new types of information required under the guidance. OSM is very interested in this new guidance and will be monitoring its implementation in coming years.

In a related activity, PADEP has initiated a technical study to characterize the nature of stream dewatering above longwall mining panels. This study is being conducted to determine whether a list of predictive criteria can be developed so they can be appropriately considered and applied during subsequent permitting decisions. Ongoing activities include compiling information on streams, drainage areas, geology, and mine workings for areas where longwall mining has taken place and converting that information into GIS format.

B. Alternative Bonding System Bond Forfeited Permits with Post Mining Discharges

On June 5, 2003, PADEP submitted to OSM a document titled "Pennsylvania Bonding System Program Enhancements", jointly developed by the two agencies. This document addressed OSM's October 1, 1991, notice to PADEP under 30 CFR 732.17, that the Pennsylvania alternative bonding system (ABS)...[was] no longer in conformance with SMCRA (section 509) and Federal regulations [30 CFR 800.11 (e)] This document also addressed OSM's 1995 follow up notice. The enhancement document announced Pennsylvania's implementation of a revised conventional bonding system (CBS) for all active/inactive permits, which includes a full cost/conventional bond for land reclamation and a water treatment bond based on bond rate guidelines. The enhancement document also announced the conversion of all active permits and completing the conversion of inactive permits under the ABS to CBS. The enhancement document specifically addressed ABS bond forfeitures with discharges through the adoption of the **Alternate Bonding System Primacy Discharge Abatement Work Plan**. One of the

objectives of the Work Plan was to develop an ABS bond forfeiture discharge abatement strategy.

Included in the June 2003 Pennsylvania Program Bonding Enhancements document was an initial inventory of polluttional discharges on sites forfeited under the ABS. At that time the inventory identified 99 polluttional discharges on 63 surface mine permits. In developing the inventory, OSM and PADEP collected information on the characteristics of the discharge, whether the discharges had been subject to treatment, and information on their impacts to the environment. Over the intervening years the ABS Discharge Inventory has been modified to reflect the addition of new ABS bond forfeited discharges, and the disposition of others. The ABS Inventory is a dynamic tool, subject to updating with new site information, new discharges from ABS bond forfeited permits, and re-categorization of existing discharges.

It is an objective of PADEP to address the discharges on sites that were permitted under the Pennsylvania ABS but forfeited prior to the posting of a full conventional bond or other financial assurance to insure perpetual treatment of the discharge. It is also an objective of PADEP to expeditiously complete the abatement work in scheduled phases that take into account site priority, programmatic resources, Commonwealth watershed management objectives, and public involvement. However, these objectives are set in the context that there are individual discharges that will be evaluated and determined to be a low treatment value for of a variety of reasons including impact on the receiving stream, available treatment space, treatment technology limitations, or excessive operation and maintenance costs. Further, PADEP intends to apply "passive treatment" technologies to abatement projects when ever possible and reserve active treatment options for those situations where remediating the discharge will have a high value impact in the watershed, and a commitment of perpetual funding can be made.

In EY 06, PADEP and OSM established a joint team of program and inspection staff with the assignment to continue implementation of the ABS Primacy Discharge Abatement Work Plan. PADEP's team members were assigned from DMO and BMR, reflecting transfer of the primacy bond forfeiture reclamation program from BAMR to DMO.

During EY07, PADEP and OSM signed an Abatement Strategy which discusses the programmatic framework, goals, and guidelines to be used in resolving the ABS bond forfeited permits with polluttional discharges. The Strategy also presents the method through which discharges will be assessed and ranked. The team completed data collection for 117 ABS discharges on 71 forfeited permits. Another 39 discharges initially identified, were evaluated and removed because they either meet effluent standards, no longer flow, or were not bonded under the ABS. A ranking form was developed, which considers numerous factors including chemistry and flow, impact on receiving stream, watershed restoration activity, land easements, availability of project space, potential success of passive treatment and others. The form separates the discharges into high, moderate and low value, in accordance with guidelines discussed in the Abatement Strategy. The team completed ranking of all 117 discharges and identified 16 High Value, 14 Moderate Value, and 87 Low Value discharges. There are 31 discharges with a treatment system working with varying levels of effectiveness. PADEP has begun design or construction of treatment systems on 9 additional High Value discharges. The joint PADEP/OSM team will meet at least yearly to evaluate and rank any new ABS forfeited

discharges, and to assess progress being made on resolving discharges. PADEP intends to make information regarding this project available through its web site, and is working on the web application.

C. Data Management

PADEP includes off-site impact and acres reclaimed information in its data management system known as eFACTS. eFACTS provides PADEP, OSM, and the public with a complete picture of coal mining permits, including information on permits, licenses, and approvals issued by PADEP and the status of pending applications, as well as the history of compliance actions.

OSM oversight of State Regulatory Programs, requires a yearly evaluation of the success of mining and reclamation as determined by the number and severity of impacts outside of the mining permit boundary, and the success of reclamation as determined by the number of acres successfully reclaimed to Stage I, II and III standards. This information is part of OSM's GPRA (Government Performance Results Act) program performance measures. Off-Site impact information is presented in Table 4 and Reclamation Success information is presented in Table 5 of this report.

PADEP's use of eFACTS to collect off-site impact and acres reclaimed data is a significant benefit to OSM in presenting this information in the annual report and reports to Congress, and enhances OSM's compliance with GPRA standards. PFD staff continues to work with PADEP to improve the consistency and completeness of this information through meetings with PADEP field staff responsible for decisions regarding collection, validation and classification of off-site impact and reclamation success data, and through its oversight mine permit inspections. For EY07, Table 5, Annual State Mining and Reclamation Results, was modified to include additional data reporting. PFD staff met with PADEP to discuss the changes, how the additional data could be collected, and the limitations of eFACTS in providing some of the data.

D. Amendments to the Pennsylvania Approved Regulatory Program

During this evaluation year, several changes to the Pennsylvania coal mining program were initiated and completed as a result of a cooperative effort by the PADEP and OSM staff. Under this team approach, OSM and PADEP staff analyze legislative and regulatory requirements, solicit comments from citizen and industry representatives, and prepare joint proposals consistent with both agency goals and with Pennsylvania and Federal laws. This is accomplished within existing Pennsylvania and Federal rulemaking requirements to improve public commenting opportunities and to simplify and shorten the process for modifying the approved Pennsylvania program. The Pennsylvania regulatory process can take up to twenty-four months until changes are finalized and published in the Pennsylvania Bulletin.

OSM and PADEP continued to focus on the effective resolution of the thirty-seven (37) outstanding required amendments codified at 30 CFR 938.16. Through a cooperative effort, two regulatory packages were submitted by PADEP to resolve 12 of the 37 outstanding required amendments.

The first proposed amendment (PA-146-FOR), pertains to the removal of six (6) required amendments at 30 CFR 938.16 (r), (eee), (ggg), (kkk), (lll), and (qqq). These amendments address previous issues pertaining to civil penalties, non-augmentative normal husbandry practices, affected area, access roads, and permit renewal applications. OSM issued the proposed rule in the Federal Register on May 23, 2006 (71 FR 29597-29604-PA803.39) requesting public comment. Comments were received from two Federal agencies and one environmental group. There were no requests for a public hearing. The Final Rule for this amendment was published in the Federal Register / Vol. 71, No. 180 / Monday, September 18, 2006 / Rules and Regulations.

The second amendment package (PA-147-FOR) that PADEP submitted requests the removal of five (5) required amendments at 30 CFR 938.16(mm), (nn), (oo), (pp), and (qq). These changes to 25 PA Code 86.187 – 190 and 86.283 concern the use of funds, reclamation and selection of bond forfeited sites, as well as changes to the re-mining and reclamation incentive provisions. PADEP also submitted, as part of this package, a change to remove the reclamation fee at 25 PA Code 86.17(e). The Final Rule; approval of 30 CFR 938.16 (mm), (nn), (oo), (pp), and (qq) of the amendment was published in the Federal Register / Vol. 72, No. 73 / Tuesday, April 17, 2007 / Rules and Regulations. Approval of 25 PA Code 86.17(e) – Reclamations Fees, was deferred based on the outcome of the disposition of *Pennsylvania Federation of Sportsmen's Club v. Norton* which might affect whether OSM may approve the proposed change.

On June 8, 2006, PADEP submitted a proposed amendment to the approved State program regarding blasting regulations at 25 Pa. Code Chapters 87, 88, 89 and 210 (PA-148-FOR). This proposed amendment was initiated based on the need to clarify the requirements for shaft and slope development on mine sites, and also to address a number of other issues relating to blasting. The Proposed Rule; extension of comment period and notice of hearing was published in the Federal Register / Vol. 71, No. 175 / Monday, September 11, 2006. Based on public comments received, PADEP revised this amendment and is currently waiting to present the changes to the Environmental Quality Board for approval. OSM will be reviewing this amendment package and its changes in the next evaluation year.

On December, 18, 2006, PADEP submitted a proposed amendment to the approved State program regarding Government Financed Construction Contracts. The amendment relates to program changes addressing incidental coal removal under construction contracts and specifically adds 25 PA Code Chapter 86.6 to the State program. The proposed amendment, PA-149-FOR, was published in the Federal Register / Vol. 72, No. 24 / Tuesday, February 6, 2007 / Proposed Rules. OSM will be reviewing this amendment in the next evaluation year.

OSM and PADEP are working collaboratively to address the program discrepancies of the twenty-six remaining required program amendments. PADEP is currently developing an amendment package to address 938.16 (ccc) permitting for exploration on lands unsuitable for mining, (iii) seismic safety factor for impoundments, (jjj) six hour precipitation event for impoundments, (nnn) two officer's signatures for indemnity agreements, (ppp) notification of decision not to revoke an exception for extraction of coal incidental to non-coal mining, and (ttt) disposal of non-coal waste on refuse area or impoundment.

E. Abandoned Underground Mine Pools

In 2002, LTV's and Beth Energy's looming bankruptcies presented PADEP with the reality that about 15 significant underground mine drainage treatment plants may cease operations unless they were taken over by the Commonwealth. Unprepared to handle a crisis of this magnitude, then PADEP Secretary David Hess wrote a letter to the Mining Reclamation Advisory Board (MRAB) asking for their input and advice on how to deal with this underground mine pool issue. Although the LTV and Beth Energy situations were successfully resolved, the question of how to handle the many discharging abandoned underground mines still remained. The MRAB formed a task force in April 2003. In July 2003, the task force presented the full MRAB with 19 resolutions which were unanimously adopted and presented to the Secretary of PADEP. In summary the resolutions covered activities including evaluating technologies for in-situ and ex-situ treatment of the mine water; reduction of infiltration of surface water; economical metals recovery; using airborne geo-technology to map mine pools; developing and consolidating data bases of mine pools and discharges; developing trust funds to address the long-term treatment of discharges; and developing outreach to and partnerships with potentially interested parties. In December 2003, an action plan was developed and implemented to address the 19 resolutions. The action plan lays out the steps, responsible parties and timetable for fulfilling the resolutions.

The most innovative resolutions involve the potential marketing of mine pools to industries and other public and private water users to promote economic development. PADEP recognizes that flooded deep mines contain vast quantities of stored, but polluted water and that many industries need water to conduct their businesses. PADEP is encouraging such industries to consider recycling and reusing the mine pool water and large volume discharges as an option to satisfy their needs. The reuse and recycling of mine pool water offers the potential of several important benefits. First, industry would have additional flexibility in making siting decisions for their facilities. Second, the use of mine water could provide cost advantages compared to the options that rely on traditional sources of water. Third, a facility that is sited at a location to take advantage of the availability of mine water and possibly the reclamation of abandoned mine lands for facility construction would bring economic development to an area that might not previously have been considered.

In October 2006, PADEP's Bureau of Abandoned Mine Reclamation (BAMR) issued a Request for Proposals (RFP) (No. OSM PA(AMD-06)) for the demonstration or implementation of new or innovative in-situ or ex-situ treatment or abatement technologies or enhanced metals recovery for acid mine drainage. In June 2007, BAMR entered into Agreements with four applicants under this RFP. The total amount awarded for these projects is \$559,471.70, which will be funded entirely from the 2006 Environmental Stewardship Fund. The following four proposals have been awarded:

- Pennsylvania State University/Burgos, Senko, Bruns - *Aeration Terraces for Biological Low pH Iron (Fe²) Oxidation.*
- Stream Restoration, Inc/BioMost, Inc. - *(ELF) Inter Mine Pool Transfer, Abatement, Treatment or Reuse.*

- WPCAMR/Iron Oxide Technologies, LLC - *Enhanced Iron Removal for Recovery from Aerobic Ponds using Retrofit LASAIRE Aeration.*
- Broad Top Township/Skelly & Loy, Inc. - *Ex-Situ Treatment Technology Evaluation of an Existing Steel Slag Resource in the Six Mile Run Watershed for use as AMD treatment.*

These four projects represent a second round of innovative technologies RFP's. The first round of RFP's was issued in January 2005, as an initiative to promote the implementation of new technologies, and to promote economic development or industrial application of mine pools and abandoned mine lands. BAMR awarded eight contracts under the first round; seven from the 2005 Environmental Stewardship Fund and one from Growing Greener 2. The total amount of the awards is \$4,075,009 including \$95,729 from the Title IV ACSP Grant. All of the contracts awarded under the RFP's are currently active.

F. Growing Greener

Growing Greener is the largest single investment of state funds in Pennsylvania's history to address Pennsylvania's critical environmental concerns of the 21st century.

The original Growing Greener legislation was signed into law by Governor Tom Ridge on December 15, 1999. Called the Environmental Stewardship and Protection Act, funds were allocated for farmland preservation, state park and local recreation projects, waste and drinking water improvements, and watershed restoration programs.

In June 2002, Governor Mark Schweiker signed legislation that increased the funding for Growing Greener, extending it until 2012. Though authorized funding levels were established, revenue shortfalls affected actual spending, and the program was in danger of running out of funds.

In 2004, Governor Rendell proposed the Growing Greener II initiative and a bond issue resolution was placed on the statewide voting ballot. In May 2005 Pennsylvania residents approved the resolution with 61% of the vote. This authorized the Commonwealth to borrow up to \$625,000,000 for the maintenance, and protection of the environment, open space and farmland preservation, watershed protection, abandoned mine reclamation, acid mine drainage remediation and other environmental initiatives.

Funds are allocated to a variety of government agencies for award to selected projects. BAMR is authorized to allocate its share of Growing Greener funds for the following mining related activities:

- Watershed restoration and protection; and
- Abandoned mine reclamation

AML land and water reclamation projects funded by Growing Greener can be designed, contracted and administered through BAMR, or administered through grants to municipalities and watershed groups awarded by PADEP with oversight and technical assistance provided by BAMR and DMO staff. Since 1999, BAMR has received about 27.7 million dollars from the

original Growing Greener program. Under the Growing Greener II program BAMR has awarded 32 contracts totaling 45.5 million dollars that includes 31.2 million dollars from Growing Greener II and 14.3 million dollars from the Title IV grant.

G. Appalachian Regional Reforestation Initiative (ARRI)

The Appalachian Region Reforestation Initiative (ARRI) is a joint effort of Appalachian States, and the OSM Regional Office. The initiative also includes partnerships with coal industry representatives, academia, landowners, environmental organizations and various governmental agencies. The goals include planting more high value hardwood trees, increased tree survival and increased tree growth and productivity. The initiative uses the Forestry Reclamation Approach (FRA). This involves the planting of higher quality trees, minimum compaction of the reclaimed ground, the use of native as well as non-competitive ground covers and proper tree planting techniques. OSM is working with PADEP in making presentations at appropriate meetings, and developing specific objectives for the District Mining and AML offices, and identifying individual permits and reclamation projects where the FRA can be applied.

In June 2007, The Council for the Reclamation of Disturbed Lands in Pennsylvania had its annual meeting. The Council is made up of the PADEP mining programs, The Pennsylvania Game Commission, the Pennsylvania Bureau of Forestry, people from colleges, graduate students and others. This year, the Council heard a presentation from OSM's Forester on the ARRI program and then visited an Amerikohl Mining Company permit where the FRA was used on a portion of the total permit. Red Oak, Black Cherry and Silky Dogwood seedlings were planted on the FRA portion of the permit. This site is the first known application of the FRA on a mining permit in Pennsylvania.



The Amerikohl permit reclaimed using the FRA. Note the “humpy” unconsolidated spoil. The small water filled depressions are evidence that this method of reclamation will contain runoff from rain events. The section in the background was reclaimed using typical grading and compaction methods.



Red Oak seedling planted on Amerikohl permit among non-competitive grasses.

H. Other Initiatives and Accomplishments

Unsuitable For Mining Petitions. PADEP is currently reviewing three Areas Unsuitable for Mining (UFM) petitions as follows.

Big Run, Graham Township, Clearfield County. Department staff is in the final stages of completing a technical study of the Big Run area. This review is being completed in response to a petition submitted by the Graham Township Supervisors, which requests a 2,800 acre tract within the Big Run and Willholm Run watersheds be designated as unsuitable for surface mining operations. The petition alleges that surface mining within the area would adversely affect renewable land resources.

Muddy Run, Reade Township, Cambria County. A technical study was completed in response to a petition submitted by the Reade Township Water Authority to have 3,690 acres designated as UFM. The petition alleges that surface mining activities could result in degradation of surface and groundwater resources used by local public water supply wells. The study documentation is currently under review by PADEP senior management.

Silver and Big Creek, Blythe Township, Schuylkill County. An Application has been received from Blythe Township, petitioning 336 acres of land, to date the PADEP has not officially accepted the application.

AMD Treatment System Design Consultants. PADEP has awarded Professional Services Contracts to five consultants for the design of AMD passive treatment systems. Consultants were chosen based on the ranking of proposals submitted during the Request for Proposals process. The goal is to retain a group of consultants specialized in AMD treatment, which can quickly provide system designs on an “as needed” basis. The targeted sites will

primarily be primacy mine sites with forfeited bonds. The first design project using the new Professional Service Contract is planned for a Power Operating bond forfeiture site in the Moshannon District.

Underground Mine Mapping Projects: PADEP and OSM are jointly funding projects with the University of Pittsburgh (Pitt) and with the Indiana University of Pennsylvania (IUP) which will support the scanning of old underground mine maps. These maps are important for the safe development of future underground mines in order to prevent mining accidents such as the one that occurred at the Quecreek Mine. The projects are being coordinated by the California District Mining Office as part of the Underground Mine Map Initiative to inventory all known maps of underground coal mines in Pennsylvania.

An agreement was signed with Pitt in Feb 2007 that will provide for a restoration and preservation program to stabilize and prepare historical abandoned underground coal mine maps (donated to Pitt by Consol Energy, Inc.) and which will be provided to the California DMO for digital scanning.

An agreement with IUP is currently in development which will enable IUP to scan large-format maps from the Rochester & Pittsburgh Coal Company map collection located at IUP, develop a secure and redundant data base of scanned mine map images, and produce a complete database of all known mine maps for Armstrong County. This effort is in support of the Pennsylvania Coal and Clay Mine Subsidence Insurance program (MSI). This will enable PADEP and the public to identify if a building is situated over an abandoned underground mine and determine the need to purchase MSI Insurance.

Replacement Water Supplies. PADEP has finalized a systematic approach for addressing replacement water supplies where there is an increase in operation and maintenance costs. Payment for the increased costs of a replacement water supply was the focus in, *Lang et al. vs. DEP and Maple Creek Mining Company*. The new procedures were finalized in November 2006 with the publication of the guidance document, "Increased Operation and Maintenance Costs of Replacement Water Supplies." In support of the guidance, bond forms have also been developed.

Protection of Bens Creek.

In August 2001 Pennsylvania State Representative Robert Bastian, the Ferndale Sportsmen's Club (FSC) and the Stonycreek-Conemaugh River Watershed Group (SCRIP) expressed concerns about mine drainage pollution (iron-staining) appearing in South Fork Bens Creek, a High Quality trout stocked stream. After an intensive hydrologic investigation, PADEP determined that Lion Mining Company was responsible for this pollution which had impaired more than three miles of High Quality stream. In June 2002, PADEP ordered the company to lower the deep mine pool elevation from 1835' to 1700' to stop the infiltration of the mine drainage into the stream bottom.

Lion Mining Company took actions to comply with this order until December 31, 2005, when they abandoned their down-dip gravity drain borehole treatment facility, ceasing dewatering and treatment activities. Lion Mining Company's permit bond was forfeited and collected.

To avoid a significant public health, safety and environmental catastrophe, PADEP utilized emergency contracting procedures to hire a treatment contractor on January 3, 2006, to continue mine pool dewatering, treatment and desludging activities at the Lion Treatment Facility. Initially, treatment costs exceeded \$20,000/month using liquid caustic soda and vacuum truck desludging. Unexpected treatment facility problems and deficiencies have caused PADEP to expend more than \$567,750 to date to operate and maintain this system. This is well beyond the \$388,000 of forfeited bond monies. PADEP has committed funding in the amount of \$366,000 to continue operating this system thru May 2008 while pursuing legal remedies that would force Lion Mining Company officials to pay for expenditures to date and long-term operation and maintenance.

PADEP has upgraded the treatment system to include a venturi aeration device, moving the location of the caustic soda feed, and enlargement of existing settling basins. These upgrades have decreased treatment costs to less than \$10,000/month. OSM's evaluation of the present system's performance reveals the need for an additional settling basin which would allow for nearly total iron oxidation and retention without using any chemicals. Treatment costs would be reduced to less than \$5,000/month. Recent developments in the stability of the treatment ponds continue to provide challenges to PADEP, and options for rebuilding or relocating the system are being explored.



Venturi Aeration Device. Note the immediate iron oxidation.

Other Accomplishments.

The development of a leaching test method has been completed. Funding was provided by OSM and EPA, with additional contributions from PADEP and the USGS. Eight labs participated in the 14-week study. The purpose of the test is to provide insights for rocks that by acid-base accounting (ABA) standards are difficult to predict whether they will produce alkaline or acidic water. Additionally, the leaching test provides insights into metals production, an aspect of mine drainage that can't be predicted, using ABA. Interpretation of the results is being performed by a team of DEP, OSM, Penn State and USGS scientists.

Pennsylvania issued a general permit for use of fluidized gas desulfurization (FGD) products for mine reclamation. The FGD material is required to meet performance standards for permeability and compressive strength. The FGD material by itself does not meet these performance standards, but the standards are achieved by mixing the FGD with coal ash and an alkaline fixative. The permit also requires extensive monitoring of the chemistry of the groundwater and the FGD material. A mine site in the Anthracite Region has recently been selected as the first area for placement.

PADEP's DMO issued 28 new remining permits with the potential of reclaiming 841 acres of abandoned mine land. This activity results in a significant reduction in the number of abandoned mine acres in need of reclamation, at no cost to the Commonwealth and the Title IV AML fund.

I. Title IV of SMRCA AML Reclamation

The Pennsylvania Title IV AML Program was approved in July 1982. Even as early as 1982, Pennsylvania had already put forth years of committed effort to reclaim abandoned mine lands throughout the Commonwealth with a special state funded reclamation program. In the first decade of the approved program, Pennsylvania primarily addressed priority one and two health and safety hazards through traditional reclamation contracts. Starting in the early 1990's and culminating with changes to the approved program for a special OSM rule that expanded the scope of government financed reclamation opportunities, the Pennsylvania AML program has diversified and incorporated other agencies and organizations into productive partnerships.

This year, Pennsylvania continued to address a wide range of environmental, health and safety problems. The Bureau of Abandoned Mine Reclamation (BAMR) reclaimed AML features through traditional construction contracts, entered into partnerships with property owners to reclaim safety hazards on sites that will provide opportunities for community development, and worked with other government agencies, private organizations and watershed groups to leverage additional funding for abatement of pollution from mine drainage. Finally, Pennsylvania committed substantial sums of funds from both Growing Greener programs to partner with the Title IV program and to independently address sites that would not normally fall under the approved AML program. Pennsylvania has a diverse and effective AML program.

In December 2006, Congress reauthorized AML fee collections through 2021 and made a number of changes to fund distribution and programmatic operations of the AML program. OSM is currently going through the rulemaking process to determine the scope of the changes; however, it appears that a substantial amount of AML funding will be available to Pennsylvania over the next 14 years.

To prepare for the future AML fee collections and increased funding, PADEP, in conjunction with the Pennsylvania Citizens Advisory Council, the Pennsylvania Mining and Reclamation Advisory Board, the Western Pennsylvania Coalition for Abandoned Mine Reclamation (WPCAMR) and the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR) scheduled and held eight public town hall-style meetings to present information and solicit public comments on the recent re-authorization of the AML program. At each meeting,

the WPCAMR and/or EPCAMR showed a brief video on AML reauthorization. PADEP provided information on the extent of AML problems within the region where the meeting was being conducted and then provided at least two hours for the public to express their thoughts and opinions on how future funding should be spent. Staff from the Citizens Advisory Council facilitated the public discussions.

Prominent themes of discussion were the opportunities to set aside up to 30% of the funding for mine drainage problems, the need for property owners to allow entry for hazard reclamation, and the increased funding opportunities for citizen groups. Two additional meetings are planned for September 2007. After those meetings, PADEP plans to respond to the comments and use the information gained from the meetings to structure both short and long-term approaches to the new funding.

Traditional Title IV Reclamation Abatement of Health and Safety Impacts

Pennsylvania's AML program continued to make progress in traditional areas of abandoned mine land reclamation such as dangerous highwall removal, subsidence control, and sealing shafts and portals. Specific accomplishments include completion of 14 major projects for a total of 422 acres of land reclamation. The total construction cost for these projects exceeded \$12.4 million and included \$465,628 of non-Title IV matching funds. Reclamation included 29,000 linear feet of dangerous highwalls, numerous deep mine shafts and entries, and hazardous equipment and structures. The AML program also completed two water line extension projects to address impacted drinking water supplies and stabilized residential and commercial properties by deep mine flushing to minimize potential subsidence.

During the year, contracts were awarded on 25 new projects at a cost of \$26.6 million, which includes \$7.1 million from the Title IV grant and \$19.5 million from matching state sources. At the end of the evaluation period BAMR had a total of 59 projects under construction at a total cost exceeding \$82.1 million. Upon completion, these projects will address approximately 2600 acres of abandoned mine land. Preparing for future reclamation, BAMR has over 100 projects in some stage of design and approximately 60 under development.

Pennsylvania addressed many smaller AML problems this year with two special state employee work crews; located in the Wilkes-Barre and Cambria offices (Anthracite Division & Bituminous Division, respectively). These small state workforces conduct maintenance activities and address small AML problems that are not suited for the more complicated and expensive contractual bidding approach used for traditional site reclamation.

This year, the Bituminous District (BD) located in the Cambria Office worked on 93 separate sites in 16 counties for a total cost of approximately \$403,800. The majority of the sites they worked on involved acid mine drainage problems around homes. In addition, the BD crew backfilled small subsidence holes and three small highwall areas; the largest of which was 12 acres and revegetated these sites utilizing switch grass, a renewable energy source. The BD crew has responsibility for assisting in the maintenance over 100 AMD passive treatment systems. This year, the 8 person BD crew installed approximately 5200 linear feet of piping for

mine drainage and reclaimed 28 acres. The BD crew also completely revamped a failed AMD treatment system using in-house designs. The crew successfully reworked the existing treatment cells and restored the site to a functioning AMD treatment system.

The Anthracite District (AD) crew, located in the Wilkes-Barre Office, consists of three people; a foreman, an operator and a maintenance repairman. Though small, the AD Crew is available to address a variety of abandoned mine land related problems. This year's projects ranged in complexity and scope from a one day project to backfill a previously filled vertical shaft that had settled, to a three month long project to fill abandoned strip pits and reclaim a 5-acre site adjacent to a community baseball field. The work can be dangerous at times. One recent project involved backfilling a subsidence that occurred in a previously reclaimed area located on State Game Lands 229 near Tremont Borough, Schuylkill County. The subsidence extended into the abandoned underground mine workings. At this site, a hunter's dog fell into the subsidence and had to be rescued by the local fire company. The photo below gives an idea of how dangerous the opening was prior to being backfilled by the AD crew. It took several winter months to backfill the opening, as weather would allow, and eventually cost \$12,866.79.



State Game Lands 229 subsidence

Government Financed Construction Contracts (GFCC)

Pennsylvania leads the nation in achieving reclamation under the AML Enhancement Rule promulgated by OSM on February 12, 1999. The 1999 “AML Enhancement Rule” was an amendment to the Federal Regulations to allow incidental coal removal on Title IV AML reclamation projects in the cases where there is less than 50 percent government financing. Prior to this rule change, SMCRA Title IV AML reclamation projects that involved incidental coal removal were required to have at least 50 percent of the cost of reclamation provided by a governing agency's budget. The purpose of this regulatory change was to encourage reclamation

of Title IV eligible sites that are unlikely to be reclaimed under an AML grant-funded reclamation project or a Title V surface mining permit. Many low-rated health/safety and environmental problems would otherwise go unreclaimed because scarce grant funds would be expended on higher-priority projects and remining operations would avoid the area because of the potential risks posed by marginal coal reserves and/or long-term liabilities associated with pre-existing polluttional discharges or other environmental concerns. Removing the minimum 50 percent government funding threshold in projects involving coal removal incidental to an AML reclamation contract, encourages reclamation of additional AML at little cost to the public. According to information provided by BAMR, 256 GFCC project applications have been submitted since the program's inception.

During the evaluation year, 10 GFCC projects reclaiming 113 acres were completed. PADEP received and approved 24 complete applications. During the evaluation year, PADEP accepted 40 new pre-applications and held 47 pre-application meetings with contractors and OSM. The GFCC projects that received authorizations to proceed (approval as a Title IV AML project) during the period represent AML benefits of approximately 313 reclaimed acres and approximately \$2.25million in reclamation savings to the AML program. PADEP has a rigorous site review and application process. PADEP includes OSM in the initial pre-application site review and the public in the review of the application. During the period, PADEP rejected 9 GFCC proposals prior to the formal submission of an application. Reasons that applications are rejected are because of site eligibility problems, incomplete documentation, and potential water-related problems. Occasionally, applications are withdrawn by the applicant or are simply not pursued to contract.

To date, all GFCC projects have been in the bituminous coal region of the state. To promote AML reclamation under the AML enhancement rule in the eastern anthracite region, representatives from the PADEP DMO office in Pottsville, BAMR AML office in Wilkes-Barre, and from OSM formed a joint review approach and met on four potential projects during the evaluation period. PADEP's extra efforts appear to be effective in that by the end of the review period, a complete application was anticipated to remove a refuse pile on a site in central Lackawanna County.

Pennsylvania 10% AMD Set-Aside Program

Pennsylvania currently has a balance of \$18,093,564.63 in the 10% Set-Aside fund. The total accumulated revenue with interest that has been placed into the fund since inception is \$40,394,041.84. Since there are other AMD funding sources available in PA (ACSP and Growing Greener programs), the 10% Set-Aside Program will be used primarily for larger, more expensive construction projects. Future plans for the 10% Set-Aside fund include watershed-wide abatement projects to keep surface streams from entering deep mine pools, and the construction of active treatment facilities where the AMD problem is too large to address with passive facilities.

During the evaluation period, PADEP continued development of Hydrologic Unit Plans for two areas; Bennett Branch Sinnemahoning Creek and headwaters of the West Branch Susquehanna River. Both unit plans are part of a larger effort by the Commonwealth to improve the

opportunities for tourism and economic development in north central Pennsylvania by improving water quality in the West Branch Susquehanna River. Both plans will include construction of active (chemical) treatment facilities capable of treating approximately 10 million gallons per day of mine drainage each. The facility in the headwaters of the West Branch will be operated with state funding and will help to mitigate for the impacts of agricultural consumptive use within the Susquehanna basin. Long term plans for Set-Aside projects include additional active treatment facilities in the West Branch, as well as Blacklick Creek watersheds.

The following are some examples of interesting and diverse AML projects undertaken by Pennsylvania during the review period.

**Bituminous Division Project 2798
Mine Drainage
Robinson Township
Washington County**

This year, the Pennsylvania Bituminous Division state workforce addressed a mine drainage problem that was affecting a private residence and a small community park. Apparently the result of a mine subsidence event, acid mine drainage began appearing in a residential yard and in a public park. The drainage threatened a Little League field and was getting progressively worse. The BD crew installed 408 feet of 8-inch pipe, leveled the site, and seeded the affected areas. In the spring, two additional areas were addressed with pipe extensions while the borough cut the tall grass, cleaned their playground equipment, and reopened the park. The project cost just under \$11,000.



Mine Drainage Before Construction

Crew Finished - Park Clean and Dry

**Fishing Run Reclamation Project
South Fayette Township
Allegheny County, Pennsylvania**

BAMR is nearing completion on the Fishing Run Reclamation project; a very unique

reclamation project that will address health and safety problems, reroute a stream back to its historical location and significantly reduce the flow from the Gladden mine discharge; a major source of mine drainage. Located just west of Pittsburgh, Fishing Run has a drainage area of approximately 1600 acres and is located in the lower section of the Chartiers Creek Watershed. The watershed has a drainage area of approximately 276 square miles that discharges into the Ohio River approximately 10 miles west of the City of Pittsburgh. The project is the result of a partnership between the South Fayette Conservation Group and Pennsylvania BAMR.



Confluence - Fishing Run and Gladden Discharge

Reclamation accomplishments will consist of a number of priority 2 AML features including an open portal, 300 lineal feet of dangerous highwall and several abandoned and dilapidated coal preparation plant structures. The open mine portal receives all of the flow from the upper portion of Fishing Run. This flow exceeds 2000 gpm during the spring of the year and this clean water enters the abandoned mine complex and emerges several miles downstream as part of the large Gladden polluttional discharge. By restoring the tributary and preventing this clean water source from entering the mine complex, this project will assist in the restoration of the Chartiers Creek Watershed. The project is approximately 80% complete. The mine opening has been sealed, the structures have been removed, the highwall is rough backfilled, and the stream channel is currently being constructed.

**Spring Mountain Reclamation Project
Packer Township
Carbon County, Pennsylvania**

One of the projects completed this past year by the Wilkes-Barre District Office involved backfilling what appeared to be a rather innocuous water-filled strip pit immediately adjacent to SR 4006, Spring Mountain Road, Packer Township, Carbon County. While the south edge of the pit did have a steep slope, the north side was relatively flat where it led into the water; almost beach-like in appearance. The water was clear but unbeknownst to those who used it for swimming, up to 35 feet in depth. Unfortunately, this seemingly benign strip pit claimed a life in 2003. The reclamation involved dewatering the strip pit and backfilling it using 106,000 cubic yards of on-site material. The 14.5 acre site was revegetated, and while the finished project may

not appear much different than before work started, the water body left is now less than 3 feet in depth. Constructed at a cost of \$260,536.89, this project is relatively small in relation to most of the abandoned mine land projects addressed by the Wilkes-Barre District Office, but is significant in that this abandoned site will not be able to claim any more lives.



Spring Mountain Pit During Dewatering



Spring Mountain Pit After Reclamation

**Long Reclamation Project
AML Enhancement Rule Project
Government Financed Construction
Clearfield County**

The Pennsylvania AML program completed the Long Reclamation project under the AML enhancement rule promulgated by OSM in 1999. Under the special AML program provision, the Long project reclaimed 14 acres of barren spoils, 2400-feet of highwall, and 3 impoundments at a reduced cost to the program because coal encountered during the reclamation could be used to offset construction costs. The site was frequented by the general public for hunting and hiking and to ride ATV's on spoil piles. In addition, impoundments had become a local swimming spot for the area youth. In order to reduce the potential for acidity, alkaline material (in the form of waste lime) was applied at appropriate rates and the site was regraded promote positive drainage. The entire site was planted while using treated wastewater biosolids as a soil amendment. The site was completed in the winter of 2006. The completed reclamation removed AML problems and improved the water quality of Moshannon Creek. The Long Project is an excellent example of the innovative reclamation being accomplished by PADEP under the OSM AML enhancement rule.



Long Project Area Before Reclamation

Long Project Area After Reclamation

Mercury Monitoring at Abandoned Coal Mine Fires

In 2004 BAMR initiated an effort to understand the risk to public health and safety posed by the release of mercury from abandoned coal mine fires. If mine fires are significant emitters of mercury, this risk analysis would provide the BAMR with a means to prioritize fires for extinguishment utilizing the limited federal funds available to the State through the Federal Surface Mine Control and Reclamation Act, P.L. 95-87. As recently as last year, forty uncontrolled mine fires were known to be burning in the State.

The project was implemented through an agreement with the Pennsylvania Bureau of Air Quality to pool limited resource to collect information on mercury emissions from sample sites identified in the area of the historic Centralia mine fire. In 2005 three air-monitoring stations were installed. Each station monitored three species of mercury (vapor, particulate and reactive gaseous), carbon monoxide, carbon dioxide, hydrogen sulfide, sulfur dioxide and particulates.

One suite of meteorological equipment also sampled weather conditions.

The sampling and data collection phase of the project concluded during the evaluation year and the monitoring stations were decommissioned in June 2006. The Bureau of Air Quality will analyze the data and issue a report of the findings.



Centralia air-monitoring station

V. Success in Achieving the Purposes of SMCRA

OSM's national regulatory program oversight guidelines known as REG-8 requires an evaluation of off-site impacts, reclamation success, and a component of customer service in its annual oversight work plan with PADEP. Summaries of those areas of evaluation are discussed below.

A. Off-Site Impacts

OSM Directive REG-8, Oversight of State Regulatory Programs, requires an annual evaluation of the success of mining and reclamation as determined by the number and severity of impacts outside of the mining permit boundary. This information is one of OSM's Government Performance Results Act (GPRA) program performance measures. Off-site impact information is presented in Table 4 of the Pennsylvania Annual Report. The information presented in Table 4 comes from PADEP's data management system, e-FACTS. Off-Site Impacts are grouped as impacts on people, land, water, and structures, and includes blasting, land stability, hydrology, encroachment, and other impacts. Severity is determined as minor, moderate and major.

In 2004, the Department of the Interior's Office of Inspector General (OIG) submitted an audit report with specific recommendations to OSM regarding the collection of off-site impacts. The OIG required OSM to include, in each state regulatory authority's performance agreement, the methodology to be used for the collection of off site impacts, and also recommended that these impacts be identified through state inspections. Previously, in Pennsylvania, OSM collected and evaluated off-site impact data through a yearly review of mine permit compliance orders and

civil penalty assessments. As a result of the audit OSM met with PADEP to discuss options for transferring the data collection function. Subsequently PADEP modified eFACTS to include a separate off-site impacts screen, and began collecting off-site data through its mine permit inspection program. This information is then uploaded to eFACTS at the District Office, and compiled in a report provided to OSM on a quarterly and yearly basis.

The 2007 evaluation year is the first full year that PADEP independently gathered and reported all the off-site impact data which was utilized for this report. OSM field staff conducts oversight inspections of active mining permits to provide a check on the overall percentage of permits with off-site impacts.

An off-site impact is defined as anything resulting from a surface coal mining and reclamation activity or operation that causes a negative effect on resources (people, land, water, and structures.) To count as an off-site impact, Pennsylvania must regulate or control the mining or reclamation activity causing an off-site impact. In addition, the impact must be outside the area authorized by the permit for conducting mining and reclamation activities.

The impacts are classified by degree as minor, moderate, and major. A minor impact would not affect the public, only disturb a small area or have negligible effect on the receiving stream. A moderate impact would be any impact not fitting the criteria for minor or major. A major impact would be defined as having a significant impact to the public, affect a large area; have a major impact to the receiving stream, and would include mining without a permit.

Collection of off site impact data is an integral part of permit monitoring and begins with the state inspector. PADEP inspection staff record off-site impacts as part of the permit inspection process. Off-site impacts result in compliance orders, which can initiate the assessment of civil penalties. If a compliance order is written, the inspection report includes a civil penalty work sheet that is provided to the compliance officer for assessment of a civil penalty. The inspector's report determining off-site impacts is reviewed by the supervisor and verified for correctness. The compliance officer reviews the information provided in the inspection report and the district compliance officer or legal assistant determines the impact and severity of the impact, and enters the data in eFACTS.

During the evaluation year, OSM staff met with BMR and DMO staff on several occasions to discuss the data collection and recording process. These meetings were held to improve the consistency of off-site impact reporting among the District Offices and to address how specific off-site impact situations should be evaluated and recorded. During the year, BMR completed enhancements of the eFACTS data screens to better capture the type of data that is required for OSM's reporting requirements.

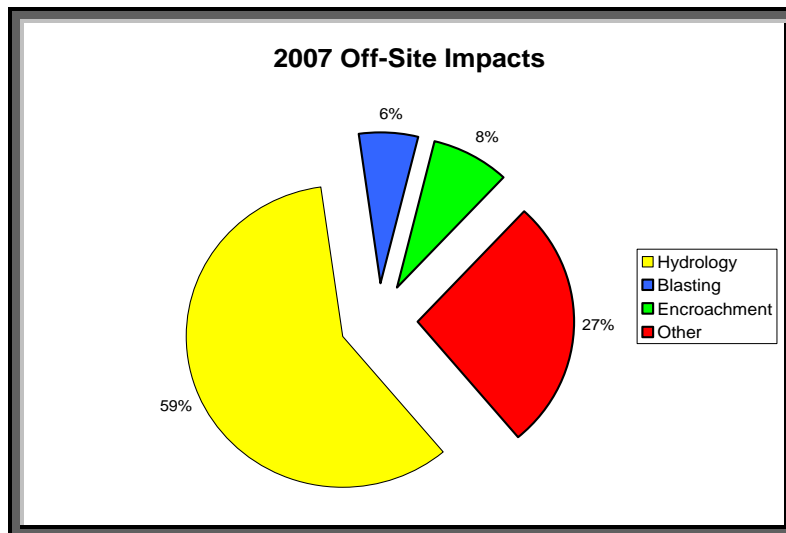
OSM staff attended a state wide meeting with BMR program staff and DMO compliance specialists. During the meetings, classification codes and impact definitions were discussed as were completeness of the data in the spreadsheet, and timeliness of the reporting.

The meeting provided OSM with a forum in which to discuss off-site impact definitions and applications, and to address consistency issues among the DMOs. Several areas of off-site impact assessment were discussed. Mining without a permit, or off-permit was discussed. The REG 8 definitions list mining without a permit as an automatic major impact, and PADEP was

advised that mining off permit would also constitute a major impact. It was also agreed that every compliance order written for off the permit impacts would constitute an off-site impact. There was also a discussion regarding the impact severity of the discharge of non-compliant water when the receiving stream was also impacted by mine drainage. Several DO staff were inclined to show no impacts when the receiving stream was already severely degraded. The definitions in REG 8, for non-compliant water leaving the permit, would assign at least a minor impact if the discharge had a negligible impact on the receiving stream. There was agreement that a discharge of non-compliant water would automatically receive at least a minor off-site impact.

During the evaluation year PADEP inspectors conducted partial and complete inspections on 1691 surface, underground, refuse, and preparation plant permits and reported 147 off-site impacts. Out of the 147 impacts reported, 29 were determined to be administrative, with no on the ground impacts, and were eliminated from the discussion. Five impacts were identified by PADEP but were not assigned a degree of impact or resources affected, and were eliminated from this evaluation. The remaining 113 impacts were recorded on 99 unique permits. Therefore, in statistical terms, 94% of the permits were free of off-site impacts. The 2006 annual report showed 97% of the permits were free of off-site impacts with the sixty off-site impacts recorded on 44 permits. This increase in the number of off-site impacts recorded can be largely attributed to PADEP's efforts in the last two years to develop and implement an effective system to identify and collect off-site impact information and an eFACTS based recording system. Pennsylvania continues to maintain a very high level of permits free of off-site impacts, and meets OSM's Government Performance Results Act (GPRA) goal of 93% of permits free of off-site impacts.

The off-site impacts collected this year are identified by PADEP as 14 major, 31 moderate and 68 minor. They are categorized as follows: 67 hydrology (59% of total), 30 other (27% of the total), 9 encroachment (8% of the total), 7 blasting (6% of the total). There were no land stability (0%) impacts.



Discussion of impacts

The majority of the impacts are hydrology related and result from the discharge of improperly treated or untreated water that exceed the numerical effluent limitation specified in the permit. These discharges result in impacts to nearby streams with the addition of acidity, iron, manganese, and sedimentation. Out of the 67 hydrology impacts (59% of the total), 6 were major, 11 moderate, and 57 were minor.

The second largest category of off-site impacts fell into the **other** category with 30 impacts (27% of the total). The minor and moderate impacts involved failure to design, construct or maintain erosion controls and failure to employ adequate air pollution controls. Some of the moderate impacts were for general safety violations for coal mining operations. Two of the major impacts were for mining without a permit.

The blasting impacts totaled 7 (6% of the total) with most of the minor and moderate impacts resulting from violations of general blasting requirements, fly rock leaving the permitted area., exceeding ground vibration limits, and failure to give audible signals or post warning signs prior to blasting. There were no violations with major impacts reported under the blasting category.

Encroachment onto protected or non-permitted areas resulted in 9 violations with off-site impacts which comprise 8% of the total. Six of the violations (3 minor and 3 moderate) were for conducting mining activities in a barrier area without first obtaining a variance. One moderate impact was for failure to maintain a 100 foot barrier from a pipeline or active oil or gas well. The one major impact was for failure to file a notice of intent to explore prior to conducting coal exploration.

There were no off-site impacts for land stability reported during the 2007 evaluation year.

As an independent check of the data collected by PADEP, OSM inspectors conducted 93 oversight complete inspections in the bituminous and anthracite areas. These inspections represent 93 individual permits. OSM observed 15 off-site impacts which are broken down to the categories of 6 hydrology and 9 encroachment. None were related to blasting or land stability. Thus, 84% of the permits inspected by OSM over the course of the evaluation period were free of off-site impacts. This percentage is improved over the 81% reported in 2006.

An issue was noted in the determination of impacts when 25 PA Code §86.11, §86.351, and §87.102, were cited. A violation of 86.11 would be conducting mining activities without a permit or mining outside the permit boundary. PADEP listed 3 violations of §86.11 as having major off-site impacts for mining without a permit. However, 1 violation of mining without a permit was listed as having a moderate off-site impact, and one violation was listed as having no off-site impact. A violation of §86.351 is mining without a license. PADEP noted 1 off-site impact for this violation, and listed 1 as no off-site impact. OSM's REG 8 defines mining without a permit as a major off site impact. In discussions with PADEP staff, there was agreement that mining without a permit and or license to mine would be classified as a major off-site impact.

Another issue noted this year is in regards to Chapter §87.102. A violation of these regulations would be discharging water that does not meet effluent standards. PADEP reported 3 major, 6 moderate, 40 minor and 5 as no off-site impacts. At a meeting with OSM, BMR and DMO staff it was agreed that all violations of §87.102 would be considered an off-site impact and reported as at least a minor violation.

B. Reclamation Success

OSM Directive REG-8, Oversight of State Regulatory Programs, requires a yearly evaluation of the success of reclamation as determined by the acres of bond release. In Pennsylvania, acres reclaimed to Stage I, II, and III standards is used instead of acres with bond release because this provides a more contemporary measure of the reclamation activity. This information is one of OSM's GPRA (Government Performance Results Act) program performance measures. Bond release information is presented in Table 5 of the Pennsylvania Annual Report. The information presented in Table 5 comes from PADEP's eFACTS data management system.

In Evaluation Year 2006, OSM was required to conduct an evaluation of the process that PADEP uses to collect, record and validate acres reclaimed to Stage I, II, and III standards. The purpose of this evaluation was to assure information submitted by OSM for GPRA is accurate. OSM conducted interviews with staff of the Bureaus of Mining and Reclamation and District Mining Office, gathering information regarding the collection of acres reclaimed information. The general evaluation criteria included; Validation that the program measurement (acres reclaimed) is appropriate, Standards and Procedures used to guide collection of the data, Data Entry and Transfer, Data Security and Integrity, Data Quality and Limitations, and Oversight and Certification of the accuracy of the data. OSM prepared a report, known as the Validation and Verification Assessment, which covered 26 program evaluation criteria. In summary, OSM found that PADEP's procedures provided adequate controls and checks to assure the collection of and accuracy of the acres reclaimed information collected for Table 5 of this report as well as OSM's GPRA report.

In Evaluation Year 2007, PFD inspection staff reviewed a sample of permits with reports of acres reclaimed during the evaluation year, using eFACTS information. A sample of 28 eFACTS entries from annual bond calculation and coal completion reports were selected representing all five District Mining Offices. One purpose of this review was to track acres reclaimed, as reported in the eFACTS system, back to the permit. This helps determine if operators are reporting the correct acreage and that the acreage is getting properly entered into eFACTS for the annual report. Another purpose of the review was to determine if reclamation was in accordance with Stage I, II and III requirements.

Based on field sampling, we found that the accuracy of the information entered into eFACTS was good, but that operator reporting and District Office verification of information in the Annual Bond Calculation Summary and Coal Completion Reports could be improved.

In Evaluation Year 2008, oversight of the accuracy of acres reclaimed information as reported in the Annual Bond Calculation and Coal Completion reports, and accumulated through eFACTS, will become a routine part of OSM's oversight complete inspections. This will provide a larger sample for program evaluation.

C. Customer Service

OSM Directive REG-8, Oversight of State Regulatory Programs, requires a yearly evaluation of a component of PADEP's program that addresses public involvement in the regulatory process. This year, OSM collected information about PADEP's Surface Subsidence Agent program.

Surface Subsidence Agents are assigned to specific mines or a specific mining area. There are nine active longwall underground mines in Pennsylvania. Currently, there are four Surface Subsidence Agents and one Compliance Manager dedicated to helping home owners who are affected by longwall mining operations.

The Surface Subsidence Agent monitors structures, wells, streams and other land features in areas that are subject to subsidence impacts from longwall mining. Every home owner affected by longwall mining is assigned a Surface Subsidence Agent. The Agent explains their rights to structural repairs, water supply replacement, and land damage restoration, as provided in Pennsylvania's mining law and regulations.

Some specific examples of the duties of a Surface Subsidence Agent are listed below:

- To provide property owners with information about PADEP's mining regulatory programs and to assist them with inquiries and concerns.
- To facilitate discussions and serve as a mediator between landowners and mine operators with the goal of resolving issues at the earliest possible stage.
- To assist with settlement of claims filed under the Bituminous Mine Subsidence and Land Conservation Act.
- To monitor the impacts of longwall mining on surface lands, streams, structures, and water supplies before, during, and upon completion of mining.
- To assist professionals and technical staff with formal investigations of claims of subsidence damage to homes and water supplies.

The Surface Subsidence Agent program is an effective means of assuring citizens affected by underground mining are informed of the mining process, and their rights for restoration of damaged property, and replacement of water supplies. It also helps citizens come to resolution of subsidence related damages to their property.

VI. OSM Assistance

A. Technical Assistance

During the evaluation year, OSM Harrisburg Office continued to provide technical assistance on the Lion Mining project and on an evaluation of the performance of passive treatment systems constructed by BAMR. In the 1990's, Lion Mining's Grove #1 underground mine ceased operations and the mine started to flood. In 2001, local residents noticed iron staining in Bens Creek and the appearance of several mine discharges. PADEP found the mining company

responsible for water pollution and required the installation of a treatment system. The company drilled a borehole to control the elevation of the mine pool and to treat mine drainage. In January 2006 Lion Mining abandoned the treatment facility and PADEP continued treatment to protect Bens Creek, a high quality trout stream. OSM provided technical assistance by characterizing the water quality, performing a treatability study, and writing a report in 2006. The OSM report recommended installing a venturi and changing the point of chemical addition to reduce treatment costs. In Spring 2006, PADEP implemented the recommendations, which resulted in a significant reduction in treatment costs. While annual treatment costs have been significantly reduced, the lack of bond money creates a situation that requires a further reduction or elimination of annual treatment costs. During the 2007 evaluation year, OSM focused on identifying and developing a treatment strategy that would eliminate treatment costs. In April 2007 OSM presented the findings of the study to PADEP. OSM identified three possible treatment alternatives to treat the Lion Mine discharge. The first alternative entailed drilling a borehole that hydrologically connected the Lion Mine to the underlying Bird Mine, which is being perpetually treated by Occidental Petroleum. The advantage to this strategy is that Occidental Petroleum already has the treatment infrastructure and employees to handle the Lion Mine discharge at their facility. The drawback to this strategy is the complexities associated with connecting two large mine pools containing significant hydrologic pressure. The second alternative would be to build additional ponds at the current treatment facility. Geochemical modeling performed by OSM showed that additional ponds would significantly reduce, if not eliminate, the need for chemical reagent. The advantage to this scenario is the low capital cost needed to enlarge the current treatment system. The drawback is that the location of the current treatment system is on a steep hillside, which makes pond stability and site access a continual issue. Another drawback is that sludge disposal would continue to be a large cost. The third alternative, which is OSM's recommended alternative, would be to relocate the treatment system to a nearby field. OSM used geochemical modeling to show that the relocation of the treatment system would result in the elimination of chemical addition and make sludge removal an infrequent event. OSM used geochemical modeling and proven sizing criteria to show that ~ 13 acres would provide the space needed to construct a series of oxidation ponds and settling wetlands that would completely treat the discharge without chemical addition. OSM is confident that relocating the treatment system is the most cost-effective long term treatment strategy. While the system would likely cost hundreds of thousands of dollars to build, the estimated payback would be less than 10 years.

In 2006, BAMR requested that OSM provide technical assistance in reviewing the performance and maintenance needs of their passive treatment systems. Since 1997, BAMR's Cambria and Harrisburg offices has constructed over 25 limestone-based passive treatment systems using a combination of bond forfeiture (> \$1.6 million), Title IV (> \$200K), Appalachian Clean Streams Initiative (> \$2.7 million), and 10% set aside (> \$3.9 million) monies. The Harrisburg Office OSM staff compiled water monitoring data and visited each site to evaluate the performance and identify the maintenance needs for each treatment system. In May 2006 OSM presented the findings on the 9 passive treatment systems constructed by the Harrisburg office of BAMR. The findings were reported in the last annual report. In January of 2007, OSM presented the findings on the performance of the passive treatment systems constructed by the Cambria office. The study showed that most of the systems were still removing acidity; however, many of the systems were not discharging net alkaline water as desired. The study showed that treatment

systems are able to continue to decline in performance since BAMR currently doesn't contain a dedicated organizational unit responsible for the performance and maintenance of passive treatment systems. The study also suggested that BAMR clearly identify the treatment goals of future projects. The treatment goals would serve as a metric to trigger maintenance, should the system performance decline below the desired level of treatment. The study also recommended that BAMR develop a set of criteria that could be used as a screening tool to determine whether a discharge is amenable to passive treatment. The combination of treatment criteria, maintenance criteria, and a responsible organizational unit would help to ensure successful long-term treatment.

B. AML/AMD Treatment Systems GIS and Information Data Base

The number of passive AMD treatment systems installed in Pennsylvania to remediate the effects of abandoned mine drainage in streams is rapidly growing. Treatment systems are being funded and/or installed by or under the supervision of PADEP's BAMR and DMO, County Conservation Districts, local governments and non-profit organizations. Pennsylvania's Growing Greener Program provides significant funding to PADEP and numerous local municipalities and watershed groups for the construction of AMD treatment facilities. OSM's WCAP also provides direct assistance to watershed groups for AMD remediation. There are numerous foundations, conservancies and other organizations providing funding for AMD treatment facilities. Because of the large numbers of entities involved in the funding, construction and operation/maintenance of these systems, no one agency or organization had compiled a complete list of basic GIS information on the projects. However, there is general consensus on the need to maintain one data base of all passive treatment projects.

In 2003, OSM and PADEP agreed to collaborate on developing a GIS data base of all AMD remediation projects for AML and bond forfeited projects statewide. The data base was completed in 2005 and announced to potential users. In 2006, the data base was upgraded to include additional treatment technologies, and funding contributed by the various agencies. Also, the data base has been expanded to include projects in Ohio, West Virginia and Maryland.

Through June 30, 2007, approximately 257 individual passive treatment project sites have been entered into the Pennsylvania GIS data base. These projects have a total capital investment of over 70 million dollars. It is noted that there are often multiple treatment systems at each project site, and the data base contains information on the type and number of treatment systems associated with each project. Information on projects is collected from a wide range of sources including consultants, State and Federal agencies, conservation districts, and non-profit watershed groups. In 2007, PADEP and the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR) made extensive use of the data base in preparation for the state wide meetings to solicit input for future use of Title IV AML funds anticipated under AML Reauthorization. PADEP has also used the data base in developing information and a policy regarding operation and maintenance of the treatment systems.

The data base will continue to be updated as new AMD treatment projects are constructed, or as existing treatment systems are modified or rehabilitated. OSM will continue to be responsible for maintaining the data base and at least once a year, will solicit information on new and existing projects.

C. AMD Inventory Maintenance (Primacy Permits)

PADEP and OSM continued their cooperative approach to the development and maintenance of a statewide inventory of long-term pollutorial discharges (AMD Inventory) from sites mined under the Pennsylvania primacy program (after July 30, 1982). The purpose of the inventory is to help determine the magnitude of the potential harm from AMD, to assess the potential for use of passive treatment technologies to address problem sites, to identify the amount of bond available to treat the discharges and to estimate the cost to abate the pollution.

The inventory is a dynamic tool that identifies permits with current water analysis and permits that do not have current water analysis and/or permit site information. Throughout the evaluation year OSM inspectors visit the permitted sites that have out of date information, inspect the site, and collect water samples. This information is then updated in the inventory. During this evaluation year OSM inspectors visited seven permitted sites, and collected water quality and quantity data on eight discharges. Through this process, it was discovered that one permit could be removed from the AMD inventory because the site was reclaimed, the bonds had been released, and the pond that remained on the site discharged water that met effluent standards.

PADEP and OSM strive to improve and update the information in the AMD inventory. Through the efforts of the Alternate Bonding System (ABS) Bond Forfeiture Discharge Abatement Team, 117 discharges were verified and rated during this evaluation year. The current AMD Inventory contains 291 permits and identifies 339 AMD discharges. Since evaluation year 2002, 236 permits and 321 AMD discharges have been inspected and evaluated by the PADEP or OSM and the hydrologic information has been updated in the AMD inventory.

D. Appalachian Clean Streams Program (ACSP)

In 1994, OSM determined that additional effort was needed to help focus Federal attention on pollution of the nation's rivers and streams by drainage from abandoned coal mines. There are 7,500 miles of streams known to be impacted by abandoned coal mine drainage in Appalachia, with Pennsylvania, West Virginia, Ohio, Maryland and Virginia having the majority. Pennsylvania alone has 3,500 miles of impacted streams from hundreds of abandoned surface and underground coal mine discharges. As watershed assessments are completed, the number of stream miles impacted by abandoned mine drainage in Pennsylvania is expected to rise.

To help address this significant problem, OSM created the ACSP and receives Congressional funding authority in appropriations from the AML Fund that are directed to participating states for mine drainage remediation projects. Selected projects emphasize Federal/State/local partnerships to treat coal mine drainage in watersheds. The allocation is budgeted against the Federal share of the AML Fund. The thirteen States participating in the program receive a share of the yearly clean streams allocation, based on their adjusted historical coal mined percentage, with a minimum of \$120,000.

Through the ACSP, OSM provides financial and program assistance to PADEP. Awards granted through fiscal year 2006 total \$16.3 million. In Fiscal Year 2007, PADEP received \$948,777 in

ACSP funds as a part of its Abandoned Mine Land Program Grant. Sixty-one AMD remediation projects have been identified by PADEP for funding using these ACSP funds and 35 projects have been completed, 18 are underway and 8 are in design. The total amount of ACSP funds dedicated to these projects is \$15,301,646. Fifty-one projects involve construction of treatment systems, and 10 involve land reclamation and stream reconstruction activities in association with reducing the impacts of mine drainage. OSM technical staff are often asked for input regarding which treatment technologies will have the greatest likelihood of success in treating individual AMD sites.

With reauthorization of the AML program in 2006, the ACSP was eliminated as a separate grant funding item. The rationale was that the increase in the AMD Set-Aside program from 10% to 30% eliminated the need to have another source of grant funds dedicated to mine drainage remediation. This program will conclude when all ACSP projects currently under development are completed.

E. Watershed Cooperative Agreement Program

There has been a significant growth of watershed protection and restoration groups in the Appalachian Region in the past decade, in large part responding to increasing financial and technical support provided by Federal and State agencies. Pennsylvania now has dozens of active watershed groups dedicated to the remediation of mine drainage problems, and PADEP is providing significant staff support, often funded by grants from the Abandoned Mine Fund, and project funding through the Growing Greener Program.

In 1999, OSM established the Watershed Cooperative Agreement Program (WCAP), funded under the Appalachian Clean Streams Program (ACSP). To date, 70 WCAP grants have been awarded to Pennsylvania non-profit watershed groups for a total of \$6.4 million. Total costs for these projects including all partner cash and in-kind donations of labor and services are \$28.2 million. In total, OSM's contribution to the projects averages about 23 percent. Sixty-five of the projects have been awarded to construct passive treatment systems with most projects involving more than one treatment system. Two projects are for land reclamation to reduce or eliminate a source of mine drainage. Three projects are for active treatment of mine water. Fifty-eight projects have been completed. In the evaluative year, there were 3 new project grants awarded for a total of \$159,803. PADEP is frequently involved as a primary partner in these direct assistance grants, either providing funding and or technical assistance, and OSM Harrisburg Office staff coordinates with PADEP to help assure the successful completion of the projects. Funds provided by OSM complete the remediation budget, and OSM receives a large number of financial assistance requests from Growing Greener program applicants. Other financial partners involved in WCAP projects include the NRCS, Environmental Protection Agency, the Eastern and Western Pennsylvania Coalitions for Abandoned Mine Reclamation, the U.S. Army Corps of Engineers (COE), and numerous foundations, conservancies, watershed groups, industries and coal mining companies, and individuals. Because of the partnership nature of the WCAP, the OSM Harrisburg Office is routinely involved in meetings and site visits with watershed groups, PADEP and other project partners, helping to coordinate the technical and programmatic aspects, and to resolve issues. The OSM has dedicated a significant amount of staff resources in

administering this program, and is providing an increasing amount of technical help to watershed groups seeking the best available technology to remediate their mine drainage problems.

Growing Greener requires a 15% match from other sources and the WCAP is often the anticipated source of those funds. This year OSM and PADEP worked out a process for Growing Greener to recognize OSM's acceptance of an application for WCAP funding and findings that the application is administratively and technically complete as evidence of a matching source of funds. This agreement recognizes that OSM cannot commit WCAP funds prior to a formal award, and cannot award WCAP funds prior to a Growing Greener commitment of funds. After Growing Greener commits funding to a project, OSM will proceed with its recommendation for funding. If and when OSM awards the requested funds, Growing Greener will execute its contract with the applicant.

Cessna Run AMD Treatment Project Dedication

On August 22, 2006, partners and friends gathered on Pennsylvania Game Commission lands in the Little Mahoning Creek watershed, northern Indiana County Pennsylvania, to dedicate the Cessna Run AMD treatment project. Cessna Run, a tributary of Little Mahoning Creek, was heavily impacted by mine drainage from abandoned coal mined lands. A high concentration of dissolved aluminum in the water was preventing colonization of the stream bed with macro-invertebrates, and re-population with fish from Little Mahoning Creek. Through the efforts of numerous funding and other supporting partners, two up-flow limestone beds and an open limestone channel were constructed. These facilities treat an average of 176gpm, with pH in the 3 range and aluminum of 3 to 5mg/l, and discharge water with a pH above 6.5 and no dissolved aluminum. The result has been dramatic and rapid. In April of 2006, electro shocking of Cessna Run downstream of the project resulted in collection of 114 fish including native and stocked Brook Trout and Mottled Sculpin. Both species are indicators of very good water quality. Downstream macro-invertebrate sampling also has show a dramatic return of mayflies, stoneflies and caddisflies, which provide a food source for the fish. This project has successfully restored the aquatic habitat of 1.5 miles of Cessna Run and also improved water quality in Little Mahoning Creek, a significant cold water fishery.



Cessna Run immediately downstream of treatment project

This project represents the best in partnerships. The Indiana County Conservation District, Little Mahoning Creek Watershed Association, and Ken Sink Chapter of Trout Unlimited provided the vision and project initiative; the Western Pennsylvania Coalition for Abandoned Mine Reclamation provided funding for a watershed assessment and will be assisting in post construction monitoring; the Pennsylvania Senior Environmental Corp helped collect water samples; The Penns Corner Conservancy was the grant applicant and provided administrative support; The Western Pennsylvania Conservancy provided funding for access road improvement and conducted post construction electro shocking; TJS Mining Company provided financial support; the Pennsylvania Game Commission provide the land and access; Pennsylvania's Growing Greener program and OSM's Watershed Cooperative Agreement Program provided primary financial support.

F. Dents Run Watershed Restoration Project

Over the past six years, the BAMR has, in partnership with the U.S. Army Corps of Engineers (COE), been working with the Bennett Branch Watershed Association, the Pennsylvania Game Commission, the PA Bureau of Forestry, the Rocky Mountain Elk Foundation, the Western Pennsylvania Conservancy, and a local mining company, P&N Coal Company to reclaim abandoned mine lands and address mine discharges in the Dents Run watershed in Elk County, Pennsylvania. In 2001, the COE completed their planning, issued a final environmental impact statement (EIS) and prepared to contribute up to \$5 million towards reclamation and water treatment. For their part, BAMR proposed contributing approximately \$2.7 million in funding.

Over the last several years, BAMR completed portions of the reclamation, however, the COE has experienced funding and design delays. To provide BAMR with the flexibility to take over responsibility for portions of the COE proposed work, OSM implemented a little used provision of the National Environmental Policy Act (NEPA) in early 2006 to adopt the environmental review and findings of COE. The adoption allowed OSM to accelerate the environmental review process and authorize BAMR reclamation on all Title IV portions of the project.

As of the end of this review period, several sites within the project are completed or very near completed. In addition, contracts were awarded to begin construction on two passive treatment systems funded by the COE as well as a 50 acre land reclamation parcel within Elk State Forest.

Finally, designs are near completed on a 38 acre site where BAMR will address acid forming spoils with alkaline addition and limestone channels. This project is part of a multi-project effort to restore water quality to Bennett Branch Sinnemahoning Creek; a tributary of the West Branch of the Susquehanna River.

VII. General Oversight Topic Reviews

Each year the OSM, in consultation with PADEP, develops an oversight work plan, as required by the OSM Directive REG-8, Oversight of State Regulatory Programs. This plan includes various aspects of Pennsylvania's approved coal regulatory and Title IV AML programs that OSM will evaluate for effectiveness, innovation, and compliance. OSM's oversight is not process driven. It focuses on the on-the-ground/end result success of Pennsylvania's program in achieving the purposes of SMCRA. A review team is established for each topic and a team leader is designated. PADEP is invited to appoint team members, and in some cases joint OSM/PADEP team leaders are designated. At the conclusion of the evaluation, a report is written and provided to PADEP for comment prior to finalization. Copies of the reports are maintained in the public evaluation file located in the OSM Harrisburg Office.

Several evaluation studies have been discussed earlier in this report and are not repeated here. A short summary and results of each remaining study follows.

A. Oversight Inspections

The oversight inspection study is conducted to fulfill responsibilities as specified in OSM's Oversight policy REG-8, regarding review of PADEP's permitting and inspection program for surface coal mining operations. This study includes reviews of applicable mine permit files and on-site inspections focused on identification of off site impacts resulting from various mining activities. Inspections are documented using OSM's Mine Site Evaluation and addendum forms. Inspection data is entered into a national data base. Specifically, this study provides monitoring capability for the entire spectrum of State program operations and gives an up-to-date perspective of the on-the-ground successes of Pennsylvania's mining program. In addition, data was collected in support of other studies identified in the 2007 Work Plan.

OSM conducted a total of 208 inspections during the evaluation year. Of those inspections, 93 were oversight complete inspections (OC) of mine sites. The other 115 inspections were in support of other oversight work plan evaluations, initial Government Financed Construction Contract (GFCC) inspections, and responses to citizen complaints, Ten-Day Notices, and follow-up inspections. The data was used to determine the number of sites in full compliance. Of the total 93 oversight complete permit inspections conducted for this study, 71 (76%) of the sites were found in full compliance and 22 (24%) had violations. There were a total of 36 violations noted on the 22 permits with violations. Fifteen of the violations involved off-site impacts. One

permit had 4 violations noted and two permits had 3 violations noted. 34 of the violations were deferred to the PADEP inspector for action, and two had been previously cited by PADEP.

There were 35 permits inspected that had provisions for re-mining and 19 with Subchapter F conditions. OSM observed positive impacts on the 35 operations. In most cases, the reclamation of abandoned high walls and associated disturbed acreage was observed. Additional benefits are anticipated as mining operations advance.

Each OC inspection provided a focused evaluation in regard to the bond and bond calculations for the permit. All except 3 evaluations found the permits to have sufficient bond available to reclaim the operation. In all three cases involving insufficient bond, AMD discharges were identified that required recalculation of the bond amount for the site and, or negotiation to establish a treatment trust fund.

There were a total of 5 sites where, at the time of the OSM inspection, conditions were identified where it was possible for the operation to result in a long term AMD problem.

There were 9 Ten-Day Notices (TDN) with 11 alleged violations issued to PADEP during the evaluation period. Seven TDNs were in the Bituminous Region and 2 were in the Anthracite Region. Both of the TDN's in the Anthracite Region were as a result of citizen complaints. In the Bituminous Region 6 TDN's were the result of citizen complaints. One TDN was the result of a Federal inspection. Appropriate action was taken by PADEP in response to 5 of the 7 TDN's in the Bituminous Region with final action pending for the other 2 TDN's. Both TDN's in the Anthracite Region are still open pending final responses by PADEP.

B. Bond Forfeiture Program Transfer

On July 1, 2004, responsibility for reclamation of primacy bond forfeited permits was transferred from BAMR, to DMO. The primary reason for the transfer of the program was to realize efficiencies and reclamation cost savings by having the program in the same office responsible for issuance of the permit and permit inspection prior to forfeiture. DMO staff, with a familiarity of the permit and its condition at forfeiture, would be in an advantageous position when determining what activities are needed to complete the mine reclamation plan. Essentially, the inspector with responsibility to monitor the active permit will also be responsible for assuring reclamation of the site should the permit be forfeited. This knowledge of the permit and cradle to grave approach is expected to result in more timely reclamation of bond forfeited sites. Also, reclamation is expected to be less costly, again because of the familiarity of the DMO staff with the site and reclamation plan at forfeiture. Another anticipated benefit of the cradle to grave approach is that the inspector should become more diligent in assuring contemporaneous reclamation if she/he knows that they will also be responsible for any bond forfeiture reclamation required.

When the program was transferred, DMO received a list of 93 un-reclaimed primacy forfeitures from BAMR. That list was assessed and the permits were placed in six priorities. DMO advised OSM that it selected 42 of the top three priorities for resolution. The top three priorities include permits needing land reclamation (priority 1); discharges with increased pollution (priority 2);

and water supply replacement permits (priority 3). The DMO's original goal was to have these 42 identified bond forfeited permits resolved within three years. Thus, with the writing of this report, the three year period has expired.

DMO maintains a data base of all forfeited permits transferred from BAMR. The District Offices were asked to update the data base through June 30, 2007, and that information was the basis of all statistical findings. Also, in this year of the review, Harrisburg Office staff visited 8 forfeited permits on the transfer data base, where either reclamation had been completed, or no additional reclamation was needed. Two permits were visited in Knox, Greensburg, and Moshannon Districts, and one permit was visited in Cambria and Pottsville Districts. In summary; three sites were evaluated by DMO and determined to need no further reclamation; one site was partially addressed through re-mining, and no further reclamation was needed on the remaining portion; two sites were addressed through Act 181 contracts with coal companies; one site was reclaimed through a BAMR contract; and one site was addressed with an Act 181 contract with a land owner through the Jefferson County Conservation District.

Of the 42 high priority primacy bond forfeited selected by DMO for resolution within the first 3 years, 13 (31%) have been resolved either through reclamation contracts, re-permitting, or determinations that no further reclamation is needed. Four of these sites have discharges that need to be addressed. Seven of the permits (17%) are forfeited refuse disposal areas with potential for removal through coal waste re-processing permits. Reclamation of these permits will be deferred. Eight of the permits (19%) have actions underway that will resolve the reclamation status, and reclamation of the remaining 14 permits (33%) still needs to be determined. Therefore, 21 (50%) of the permits identified for resolution within 3 years have land reclamation issues addressed. If the refuse disposal permits with reclamation deferred, are added to this number, 28 (67%) of the original 42 high priority sites transferred from BAMR, were resolved in the initial 3 year target time period.

In addition to the 42 high priority bond forfeited permits targeted for reclamation within the initial 3 year period, an additional 51 forfeited permits were transferred from BAMR. Land reclamation has been completed on all these sites, with discharges remaining to be addressed on 12 permits.

Therefore, of the 93 forfeited permits transferred from BAMR to DMO on July 1, 2004, 72 (77%) have had land reclamation issues addressed, with 16 of those permits having post mining pollutional discharges remaining. Seven of the refuse disposal permits have reclamation deferred.

DMO reports that reclamation has also been completed on 42 primacy bond forfeiture sites, which were forfeited since the program was transferred from BAMR. These sites were reclaimed through a variety of contracts, surety reclamation, reclamation by Consent Order and Adjudication (CO&A), and re-permitting actions. In total, DMO has resolved land reclamation issues on 114 bond forfeited permits in the 3 years it has been responsible for the program. This is a noteworthy accomplishment.

C. Abandoned Mine Lands Project Reviews

OSM conducts site reviews of AML projects to understand how PADEP controls the reclamation process and to determine whether the program is meeting stated goals and objectives. During the evaluation year, the Harrisburg office conducted 30 site visits to approved AML projects during various phases of completion. When possible, site visits were coordinated with BAMR which is offered the opportunity to accompany OSM during the review. OSM gathered information on site status, BAMR monitoring, overall project success, and the existence of actual or potential problems. The site visits conducted by OSM included 19 construction phase reviews, 7 final inspection phase reviews, and 4 post-completion phase reviews. Overall, OSM construction, final, and post-final reviews confirm that BAMR successfully manages the AML project reclamation process. BAMR develops effective designs and monitors contractor performance to ensure that the projects meet the goals and objectives of the AML program. During EY2006, two site reviews by OSM raised questions concerning the accuracy of environmental assessment documents developed by BAMR in support of the authorization to proceed. OSM is continuing to review these sites.

D. Abandoned Mine Lands Inventory Review

This review was conducted to confirm the existence of support information in BAMR project files that verify the units and costs entered into the OSM Abandoned Mine Lands Information System (AMLIS). This review is performed annually, and is conducted to address findings by the U.S. Department of the Interior Office of Inspector General (OIG) that the OSM AMLIS system contained errors. The first OSM review, conducted in evaluation year 2004, concluded that Pennsylvania has a system in place that should provide for the entry of accurate information into AMLIS. To determine whether the existing system is being implemented successfully, this annual study reviewed inventory sites where changes to the AMLIS database were made during the last year.

In EY2007, reviews were conducted in PADEP district mining offices to verify that information exists for the data entered into AMLIS for projects conducted under the OSM AML enhancement rule. This study reviewed project files for written documentation of feature numbers and costs. Written documentation is considered to be copies of PAD forms, project completion reports, engineer estimates or other PADEP documents that included discussions or costs that specifically confirmed the AMLIS entries.

E. Use of Conventional Bonds and Treatment Trust Funds for long term treatment

PADEP continued to negotiate and implement Trust Funds and Conventional Bonds for the perpetual treatment of primacy permits with post mining discharges. PADEP uses AMDTreat, and/or actual water treatment cost data the coal company or a third party provides, as instruments to aid in the establishment of the bond or treatment trust funds amount. There are other factors such as the trust's life span, market rate, and administration costs that are also taken into consideration for establishing trust fund accounts.

PADEP has developed a database to track operators with discharges that require pollutional discharge bonding or the implementation of trust funds. This database contains the status of trust or bond agreements. Agreements are classified in the following categories: data collection in progress, initial calculations are completed, negotiations are ongoing, agreement has been reached, and Trust/Bond is finalized. Included in the database are pre-primacy and non-coal permits along with primacy coal mining permits.

Within the database there are 99 agreements associated with primacy, coal mining related discharges. The 99 primacy discharge agreements address 172 discharges. Agreements are in various stages of execution. They are:

- Data collection in progress – 8
- Initial calculations are completed – 7
- Negotiations are ongoing – 20
- Agreement has been reached – 10
- Trust/Bond is finalized – 54

Of the 54 finalized agreements, 32 are conventionally bonded and 22 are treatment trusts accounts. Nine of the treatment trusts accounts are partially funded.

Funding is being tracked through eFACTS. A quarterly report is generated by the district offices.

F. Haul Road Construction and Maintenance

OSM inspection staff conducted a haul road evaluation of 41 permits as a part of the routine oversight complete inspections and found, with only two exceptions, that the roads were designed and maintained in accordance with permit and program requirements. It is our conclusion, based on the results of this evaluation that Pennsylvania operators and PADEP are meeting the requirements of the coal regulatory program for haul roads.

Conclusion

This evaluation year, the OSM Harrisburg Office conducted a comprehensive review of the Pennsylvania approved coal regulatory and abandoned mine reclamation programs, including 14 topical areas of evaluation, technical assistance, or study. Oversight data and studies indicate that the Pennsylvania Program continues to be effective in meeting the regulatory and reclamation goals of SMCRA. In support of this finding, OSM conducted 208 permit inspections including 93 oversight complete inspections, and 30 abandoned mine reclamation project inspections. PADEP is conducting a program where active mining sites are, with very few exceptions, in compliance with the approved regulatory program. Very few off site impacts were noted. Reclamation proceeds in a successful and contemporaneous fashion. Abandoned mine reclamation projects result in successful hazard elimination and environmental stabilization and enhancement. Of particular note this year is AML reauthorization and the anticipated dramatic increase in the amount of AML grant funds awarded to PADEP, and the increasing size and scope of the reclamation program. OSM recognizes PADEP's efforts this year in conducting

a series of public meetings to discuss implications of AML reauthorization and gather public comment in how to allocate the anticipated increased grant funds.

PADEP recognizes the impact mine drainage from abandoned and bond forfeited sources has on Commonwealth streams, and continues to dedicate significant staff and financial resources to developing long-term treatment options through trust agreements, and bonding, constructing mine drainage treatment systems, supporting watershed groups in their clean-up efforts, and advancing treatment technologies to help maximize their effectiveness. In addition, Pennsylvania's regulatory programs are designed to minimize impacts to surface and ground water, and water supplies.

BAMR issued a Request for Proposals (RFP) for the demonstration or implementation of new or innovative in-situ or ex-situ treatment or abatement technologies or enhanced metals recovery for acid mine drainage. Subsequently, BAMR entered into agreements with four applicants under this RFP. The total amount awarded for these projects is \$559,471.70, which will be funded from the 2006 Environmental Stewardship Fund. Also, PADEP continues to move forward in addressing ABS bond forfeited permits with discharges. OSM fully supports PADEP in these initiatives, and provides significant staff resources dedicated to addressing AMD issues affecting Pennsylvania.

APPENDIX A

Acronyms used in this Report

ABS	Alternative Bonding System
ACSP	Appalachian Clean Streams Program
AMD	Acid Mine Drainage (Relates to all mining related pollutional discharges)
AML	Abandoned Mine Lands
AMLIS	Abandoned Mine Land Inventory System
BAMR	Bureau of Abandoned Mine Reclamation
BMR	Bureau of Mining and Reclamation
CAC	Citizens Advisory Council
CBS	Conventional Bonding System
CO&A	Consent Order and Agreement
COE	U.S. Army Corps of Engineers
DCED	Department of Community and Economic Development
DMO	Bureau of District Mining Operations
eFACTS	Environment Facility Application Compliance Tracking System
EHB	Environmental Hearing Board
EQB	Environmental Quality Board
GFCC	Government Financed Construction Contract
GPRA	Government Performance Results Act
HUP	Hydrologic Unit Plan
MRAB	Mining and Reclamation Advisory Board
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
OSM	Office of Surface Mining Reclamation and Enforcement
PADEP	Pennsylvania Department of Environmental Protection
PASMCRA	Pennsylvania Surface Mining Conservation and Reclamation Act
PFD	Pittsburgh Field Division
SMCRA	Surface Mining Control and Reclamation Act of 1977
TMDL	Total Maximum Daily Load
WCAP	Watershed Cooperative Assistance Program

APPENDIX B

Tabular Summaries of Data Pertaining to Mining, Reclamation and Program Administration

These tables present data pertinent to mining operations, State and Federal regulatory activities within Pennsylvania. They also summarize funding provided by OSM and Pennsylvania staffing. Unless otherwise specified, the reporting period for the data contained in all tables is the 2005 evaluation year (July 1, 2004 - June 30, 2005). Additional data used by OSM in its evaluation of Pennsylvania's performance is available for review in the evaluation files maintained by the Harrisburg Field Office.

When OSM's Directive REG-8, Oversight of State Programs, was revised in December 2006, the reporting period for coal production on Table 1 was changed from a calendar year basis to an evaluation year basis. The change was effective for the 2007 evaluation year. In addition to coal production figures for the current year, Table 1 also contains the coal production figures from annual evaluation reports for the two most recent prior years. Therefore, for the 2007 annual evaluation report, coal production figures are provided for 2005, 2006 and 2007. In order to ensure that coal production for these three years are directly comparable, the calendar year production figures from the 2005 and 2006 annual evaluation reports were recalculated on an evaluation year basis (July 1 – June 30). This should be noted when attempting to compare coal production figures from annual evaluation reports originating both before and after the December 2006 revision to the reporting period.

TABLE 1			
Coal Produced for Sale, Transfer, or Use (Millions of Short Tons)			
Period	Surface Mines	Underground Mines	Total
Coal production^A for entire State:			
Evaluation Year			
EY 2005	13.147	61.302	74.449
EY 2006	12.545	64.322	76.867
EY 2007	11.818	56.155	67.973
<p>^A Coal production as reported in this table is the gross tonnage which includes coal that is sold, used, or transferred as reported to OSM by each mining company on form OSM-1 line 8(a). Gross tonnage does not provide for a moisture reduction. OSM verifies tonnage reported through routine auditing of mining companies. This production may vary from that reported by States or other sources due to varying methods of determining and reporting coal production. Provide production information for the latest three full evaluation years to include the last full evaluation year for which data is available.</p>			

TABLE 2

**Inspectable Units
As of June 30, 2007**

Coal mines and related facilities	Number and Status of Permits								Nbr. of Insp. Units ^A	Permitted Acreage ^B (100's of acres)				
	Active or temporarily inactive		Inactive Phase II bond release		Abandoned		Totals			Federal Lands		State/Private Lands		All Lands
	IP	PP	IP	PP	IP	PP	IP	PP		IP	PP	IP	PP	Total

LANDS FOR WHICH THE STATE IS THE REGULATORY AUTHORITY

Surface mines	0	698	0	544	0	50	0	1,292	1,292	0.0	0.0	0.0	2,569.1	2,569.1
Underground mines	0	108	0	58	0	6	0	172	172	0.0	0.0	0.0	471.6	471.6
Other facilities	0	223	0	60	0	20	0	303	303	0.0	0.0	0.0	415.3	415.3
Total	0	1,029	0	662	0	76	0	1,767	1,767	0.0	0.0	0.0	3,456.0	3,456.0

Total number of permits:	1,767
Average number of permits per inspectable unit (excluding exploration sites):	1.00
Average number of acres per inspectable unit (excluding exploration sites):	195.59
Number of exploration permits on State and private lands:	2
On Federal lands ^C :	0
Number of exploration notices on State and private lands:	398
On Federal lands ^C :	0

IP: Initial regulatory program sites
PP: Permanent regulatory program sites

^A Inspectable units include multiple permits that have been grouped together as one unit for inspection frequency purposes by some State programs.

^B When a single inspectable unit contains both Federal lands and State/Private lands, enter the permitted acreage for each land type in the appropriate category.

^C Includes only exploration activities regulated by the State pursuant to a cooperative agreement with OSM or by OSM pursuant to a Federal lands program. Excludes exploration regulated by the Bureau of Land Management.

TABLE 3

**State Permitting Activity
As of June 30, 2007**

Type of Application	Surface mines			Underground mines			Other facilities			Totals		
	App. Rec.	Issued	Acres	App. Rec.	Issued	Acres ^A	App. Rec.	Issued	Acres	App. Rec.	Issued	Acres
New Permits	77	75	8,838	3	3	74	8	6	351	88	84	9,263
Renewals	167	197		22	17		43	60		232	274	
Transfers, sales, and assignments of permit rights	20	17		3	1		8	3		31	21	
Small operator assistance	12	17		0	0		0	0		12	17	
Exploration permits										2	2	
Exploration notices ^B											398	
Revisions (exclusive of incidental boundary revisions)		172			48			56			276	
Revisions (adding acreage but are not incidental boundary revisions)	51	42	0	30	28	0	3	6	0	84	76	0
Incidental boundary revisions	0	0	0	0	0	0	0	0	0	0	0	0
Totals	327	520	8,838	58	97	74	62	131	351	449	1,148	9,263

OPTIONAL - Number of midterm permit reviews completed that are not reported as revisions: 0

^A Includes only the number of acres of proposed surface disturbance.

^B State approval not required. Involves removal of less than 250 tons of coal and does not affect lands designated unsuitable for mining.

TABLE 4

OFF-SITE IMPACTS (excluding bond forfeiture sites)

RESOURCES AFFECTED		People			Land			Water			Structures			
DEGREE OF IMPACT		Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major	
TYPE OF IMPACT AND TOTAL NUMBER OF EACH TYPE	Blasting	7	2	0	0	2	1	0	0	0	0	2	0	0
	Land Stability	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hydrology	67	0	0	0	4	0	0	45	9	7	2	0	0
	Encroachment	9	0	0	0	2	1	1	1	0	0	1	3	0
	Other	30	0	0	0	4	13	5	3	3	1	0	1	0
	Total	113	2	0	0	12	15	6	49	12	8	5	4	0

Total number of inspectable units (excluding bond forfeiture sites): 1,691
 Inspectable units free of off-site impacts: 1,592
 Inspectable units with off-site impacts: 99

OFF-SITE IMPACTS ON BOND FORFEITURE SITES

RESOURCES AFFECTED		People			Land			Water			Structures		
DEGREE OF IMPACT		Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major
TYPE OF IMPACT AND TOTAL NUMBER OF EACH TYPE	Blasting	0	0	0	0	0	0	0	0	0	0	0	0
	Land Stability	0	0	0	0	0	0	0	0	0	0	0	0
	Hydrology	0	0	0	0	0	0	0	0	0	0	0	0
	Encroachment	0	0	0	0	0	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0

Total number of inspectable units (only bond forfeiture sites): 76
 Inspectable units free of off-site impacts: 76
 Inspectable units with off-site impacts: 0

TABLE 5

Annual State Mining and Reclamation Results

Bond release phase	Applicable performance standard	During this Evaluation Year		
		Total acreage released	Acreage also released under Phase I	Acreage also released under Phase II
A	B	C	D	E
Phase I	- Approximate original contour restored - Topsoil or approved alternative replaced	8,414		
Phase II	- Surface stability - Establishment of vegetation	7,177	0	
Phase III	- Post-mining land use/productivity restored - Successful permanent vegetation - Groundwater recharge, quality and quantity restored - Surface water quality and quantity restored	5,650	0	0
Bonded Acreage ^A		Acres during this evaluation year		
Total number of new acres bonded during this evaluation year		9,263		
Number of acres bonded during this evaluation year that are considered remining, if available		948		
Number of acres where bond was forfeited during this evaluation year		484		
Bonded Acreage Status		Cumulative Acres		
Total number of acres bonded as of the end of last review period (June 30, 2006) ^B		342,471		
Total number of acres bonded as of the end of this review period (June 30, 2007) ^B		345,600		
Sum of acres bonded that are between Phase I bond release and Phase II bond release as of June 30, 2007 ^B		0		
Sum of acres bonded that are between Phase II bond release and Phase III bond release as of June 30, 2007 ^B		0		
Disturbed Acreage		Acres		
Number of Acres Disturbed during this evaluation year		10,168		
Number of Acres Disturbed at the end of the evaluation year (cumulative)		0		
^A Bonded acreage is considered to approximate and represent the number of acres disturbed by surface coal mining and reclamation operations. ^B Bonded acres in this category are those that have not received a Phase III or other final bond release (State maintains jurisdiction).				

Brief explanation of columns D & E. The States will enter the total acreage under each of the three phases (column C). The additional columns (D & E & E) will "break-out" the acreage among Phase II and/or Phase III. Bond release under Phase II can be a combination of Phase I and II acreage, and Phase III acreage can be a combination of Phase I, II, and III. See "Instructions for Completion of Specific Tables," Table 5 for example.

TABLE 6

State Bond Forfeiture Activity
(Permanent Program Permits)

Bond Forfeiture Reclamation Activity by SRA	Number of Sites	Dollars	Acres
Sites with bonds forfeited and collected that were unreclaimed as of June 30, 2006 (end of previous evaluation year) ^A	136		4,978
Sites with bonds forfeited and collected during Evaluation Year 2007 current evaluation year)	4	\$ 299,265	484
Sites with bonds forfeited and collected that were re-permitted during Evaluation Year 2007 (current evaluation year)	4		332
Sites with bonds forfeited and collected that were reclaimed during Evaluation Year 2007 (current evaluation year)	60		1,384
Sites with bonds forfeited and collected that were unreclaimed as of June 30, 2007 (end of current evaluation year) ^A	76		3,594
Sites with bonds forfeited but uncollected as of June 30, 2007 (end of current evaluation year)	13		220
Surety/Other Reclamation (In Lieu of Forfeiture)			
Sites being reclaimed by surety/other party as of June 30, 2006 (end of previous evaluation year) ^B	40		3,279
Sites where surety/other party agreed to do reclamation during Evaluation Year 2007 (current evaluation year)	2		234
Sites being reclaimed by surety/other party that were re-permitted during Evaluation Year 2007 (current evaluation year)	1		14
Sites with reclamation completed by surety/other party during Evaluation Year 2007 (current evaluation year) ^C	4		489
Sites being reclaimed by surety/other party as of June 30, 2007 (current evaluation year) ^B	13		761

^A Includes data only for those forfeiture sites not fully reclaimed as of this date

^B Includes all sites where surety or other party has agreed to complete reclamation and site is not fully reclaimed as of this date

^C This number also is reported in Table 5 as Phase III bond release has been granted on these sites

TABLE 7	
State Staffing (Full-time equivalents at end of evaluation year)	
Function	EY 2007
Regulatory Program	
Permit Review	48.00
Inspection	77.00
Other (administrative, fiscal, personnel, etc.)	115.00
Regulatory Program Total	240.00
AML Program Total	127.00
Total	367.00

TABLE 8

**Funds Granted To Pennsylvania
 BY OSM**
 (During the Current Evaluation Year)
(Actual Dollars, Rounded to the Nearest Dollar)

Type of Funding	Federal Funds Awarded During Current Evaluation Year	Federal Funding as a Percentage of Total Program Costs
Regulatory Funding		
Administration and Enforcement Grant	\$ 10,387,573	50.00 %
Other Regulatory Funding, if applicable	\$ 0	0.00 %
Subtotal	\$ 10,387,573	
Small Operator Assistance Program	\$ 20,045	100 %
Abandoned Mine Land Reclamation Funding ^A	\$ 22,709,917	100 %
Totals	\$ 33,117,535	

^A Includes funding for AML Grants, the Clean Streams Initiative and the Watershed Cooperative Agreement Program.

TABLE 9		
State Inspection Activity During Current Evaluation Year		
Inspectable Unit Status	Number of Inspections Conducted	
	Complete	Partial
Active ^A	4,061	7,960
Inactive ^A	2,998	2,305
Abandoned ^A	531	326
Total	7,590	10,591
Exploration	117	162
^A Use terms as defined by the approved State program.		

TABLE 10

**State Enforcement Activity
During Current Evaluation Year**

Type of Enforcement Action	Number of Actions^A	Number of Violations^A
Notice of Violation	303	597
Failure-to-Abate Cessation Order	18	28
Imminent Harm Cessation Order	35	80

^A Do not include those violations that were vacated.

TABLE 11		
Lands Unsuitable Activity		
During Current Evaluation Year		
	Number	Acreage
Number Petitions Received	1	
Number Petitions Accepted	0	
Number Petitions Rejected	0	
Number Decisions Declaring Lands Unsuitable	0	0
Number Decisions Denying Lands Unsuitable	0	0