OFFICE OF SURFACE MINING

RECLAMATION AND ENFORCEMENT

Annual Evaluation Summary Report
For the
Regulatory Program
Administered by the State
Of

COLORADO

For
Evaluation Year 2010
(July 1, 2009, through June 30, 2010)

(September 2010)

TABLE OF CONTENTS

Attachments

Table 1	Coal Produced for Sale, Transfer, or Use
Table 2	Inspectable Units
Table 3	State Permitting Activity
Table 4	Offsite Impacts
Table 5	Annual State Mining and Reclamation Results
Table 6	State Bond Forfeiture Activity
Table 7	State Staffing
Table 8	Funds Granted to State by OSM
Table 9	State Inspection Activity
Table 10	State Enforcement Activity
Table 11	Lands Unsuitable Activity
Appendix A	EY 2010 Reclamation Status Table of all Areas Disturbed Under the Colorado Permanent Regulatory Program

I. Introduction

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) created the Office of Surface Mining Reclamation and Enforcement (OSM) in the United States Department of the Interior. SMCRA provides authority to OSM to oversee the administration of and provide federal funding for State regulatory programs that have been approved by OSM as meeting the minimum standards of SMCRA. This report contains summary information regarding the Colorado Program and the effectiveness of the Colorado Program in meeting the applicable purposes of SMCRA as specified in Section 102. This report covers the period of July 1, 2009, through June 30, 2010. Detailed background information and comprehensive reports for the program elements evaluated during the period are available for review and copying at OSM's Denver Office, located at 1999 Broadway Avenue, Suite 3320.

The following is a list of acronyms that appear in this report:

AOC	Approximate Original Contour
AML	Abandoned Mine Land
BLM	Bureau of Land Management
CIRCES	Colorado Integrated Reclamation Cost Estimation System
CMA	Colorado Mining Association
CY	Calendar Year
DAM	Disturbed Area Markers
DEQ	Department of Environmental Quality (Montana)
DFD	Denver Field Division
DRMS	Division of Reclamation, Mining, and Safety
EY	Evaluation Year
GIS	Geographic Information System
IMCC	Interstate Mining Compact Commission
NOI	Notice of Intent
NTTP	National Technical Training Program
OSM	Office of Surface Mining
SMCRA	Surface Mining Control and Reclamation Act of 1977
TDN	Ten Day Notice
TIPS	Technical Innovation and Professional Services Program
USDA	United States Department of Agriculture
USFS	United States Forest Service
WIEB	Western Interstate Energy Board
WR	Western Region
WRTT	Western Region Technology Transfer

II. Overview of the Colorado Coal Mining Industry

Coal underlies 30,000 square miles or 28 percent of the state. Colorado ranks eighth in the United States in the demonstrated reserve base of coal (16.96 billion tons). The CMA estimates that at current production rates, there is enough coal in Colorado to power the state for 250 years. The coal reserves are three-quarters bituminous and nearly one-quarter sub bituminous. There are also small amounts of lignite and anthracite, but these are not currently being developed commercially.

Since the commencement of mining in 1861, mines in Colorado have produced over 1 billion tons of coal. Coal production in calendar year 2009 was 27.059 million short tons (Table 1) (OSM-1 quarterly coal production reporting), ranking Colorado 10th among coal producing states. For the third consecutive year, Routt County was the top coal-producing county in 2009 with 7.83 million short tons (CMA). Annual coal production in Colorado has decreased during the last five years. After reaching a high of 39.8 million short tons in 2004, Colorado's annual production fell to 27.1 million short tons in 2009. Three-fourths of Colorado's production comes from productive longwall underground mining operations. In June, 1997, the Twentymile Mine (now owned by RAG American Coal Company) broke the world record for single month production, becoming the first operator to produce more than 1 million tons (1,001,401) from a single longwall system (CMA).

Coal-fired power plants produce 65% of Colorado's electricity. Most of the coal used by these plants is mined in Colorado. Colorado coal is low in sulfur, ash, mercury, and trace elements. In 2009, 63% of Colorado's coal was shipped by rail and truck to 27 other U.S. states, including Kentucky, Alabama, Tennessee, Utah, and Arizona. Additionally, Mexico imported 2.6% of the coal that Colorado produced (CMA). As of June 30, 2010, there were 39 inspectable units (Table 2). For these operations, permitted acreage totaled 160,227 acres (Table 2) and bonded acreage approved for disturbance totaled 19,468 acres (Table 5). Of the 10 operations that were actively producing coal as of June 30, 2010, 7 were underground mines, and 3 were surface mines. Five of the seven underground mines use the longwall mining method, and two employ the room and pillar mining method.

The coal mining industry has a significant impact on local and state economies. The mines employ about 2,392 staff. In 2009, they paid $70.7 million in federal and state royalties, $3.5 million into the abandoned mined land (AML) reclamation fund (funding mandated by SMCRA for the reclamation and restoration of land and water resources adversely affected by past coal mining), $14.3 million in property taxes, and $11.8 million in severance and sales taxes. Much of this funding is used to support local and state governments and projects (CMA, Coal Production and Employment).

Differences in elevation throughout the State create many climatic zones in Colorado coal country. Annual precipitation averages less than 8 inches in some areas in extreme western Colorado, to 30 inches in certain mountainous areas. The growing season can be up to 169 days long at some sites, but is usually much less, particularly in the mountainous regions of the Yampa River Basin where many of the mines have historically operated.

III. Overview of the Public Participation in the Colorado Program

Evaluation Process

OSM's Denver Field Division (DFD), located in the Western Region (WR), and the Colorado Division of Reclamation, Mining, and Safety (DRMS) formed an Evaluation Team (the Team) to conduct annual evaluations of Colorado's Coal Regulatory Program. The Team evaluates how effective DRMS is in ensuring that coal mine reclamation is successful, preventing offsite impacts, and providing service to its customers. The Team makes recommendations for improving the administration, implementation, and maintenance of the Program. This evaluation method fosters a shared commitment to the implementation of SMCRA.

During each evaluation year, the Team solicits input from coal mining stakeholders on OSM and DRMS evaluation topics through an annual mailing. The Team requests comments on the oversight evaluation process and past OSM evaluation reports.

On May 6, 2009, the Team mailed outreach letters to coal mining stakeholders (state, federal, and local governmental agencies, coal mine permittees, environmental groups, consulting firms, and coal mining trade groups) soliciting input for topics to evaluate during Evaluation Year 2010 (EY10), and soliciting any questions or comments on previous oversight reports or the OSM / DRMS oversight process. The Team received a response from the Colorado Department of Public Health and Environment recommending an evaluation of greenhouse gas impacts from mining, notably methane. DRMS does not have the authority to regulate the emission of methane gas. The Team did, however, choose to evaluate DRMS's regulation of methane drainage wells this evaluation year (see the topic evaluations for Offsite Impacts and Reclamation Success in Part VII of this report).

Colorado Program

1. Mined Land Reclamation Board Meeting

The Colorado Mined Land Reclamation Board is a multi-interest citizen board which establishes the regulations, standards, and policies that guide the DRMS. The Board was created in 1976 by the Colorado General Assembly. Members are appointed by the Governor and confirmed by the legislature, serving terms of 4 years. The composition of the Board is established by the Colorado Mined Land Reclamation Act. The Colorado Coal Program acts independently of the Board on nearly all decisions.

The Board is responsible for promulgating rules, revoking permits and forfeiting bonds, and adjudicating violations and permit decisions after all administrative appeals at the Program level have been exhausted. The Mined Land Reclamation Board held one of its monthly meetings in Grand Junction, away from its regular Denver meeting site. Holding meetings in the vicinity of the mining operations encourages public participation by making DRMS and the Board more available to the public, and helps DRMS and the Board to establish a presence outside of Denver.

2. Education and Community Outreach

DRMS made presentations to school classes, professional organizations, Scout troops, and adult education classes. Presentations focused on the regulatory program and associated reclamation issues. All DRMS staff had an opportunity to work a booth at *The Taste of Colorado* and help educate visitors about mining and reclamation.

3. Information and Technology Exchanges

DRMS participates on the steering committees for the OSM National Technical Training Program (NTTP) and the Technical Innovation and Professional Services Program (TIPS) and is a member of the Western Region Technology Transfer (WRTT) and OSM Geospatial Teams.

DRMS exchanged information with other states through participation in the Interstate Mining Compact Commission (IMCC) annual meetings, and as a representative of the Reclamation Committee for the Western Interstate Energy Board (WIEB).

DRMS and the Montana Department of Environmental Quality (DEQ) entered into a technology transfer agreement during Evaluation Year 2009, and continued this collaboration through EY10. DRMS provided DEQ access to the computer code for the DRMS Electronic Permit System. In a mutually beneficial technology transfer sharing agreement between Colorado and Montana, the additional data attributes developed for the DEQ, including environmental resources definitions, mining and reclamation requirements, and mining and reclamation plan annual reporting, will be used to enhance Colorado's existing Electronic Permit System.

DRMS also demonstrated their "Brass Cap" AML electronic inventory system to DEQ. DRMS partnered with TIPS to implement the use of mobile computing tablet Personal Computers in the field for on-site monitoring and electronic data input at AML project sites. During EY10, Montana continued to collaborate with DRMS to eventually develop and utilize a similar AML electronic inventory system database for DEQ.

This technology transfer resulted from the two states' participation in the Atlanta Geospatial Meeting organized by OSM in the fall of 2008, followed by discussions during WRTT meetings facilitated by OSM. WRTT organized travel to DRMS's Denver Office so that DEQ and DRMS staff members could meet and share their successes during the "Montana-Colorado Summit/Cross-State Collaborative Application Development". The presentation was attended by managers from OSM's Western Region in addition to state agency database managers.

IV. Accomplishments, Issues, and Innovations

Accomplishments

1. Final Bond Releases

DRMS fully releases a reclamation performance bond (Phase III bond releases) when a permittee meets or exceeds all DRMS program requirements for the disturbed land. During EY10, DRMS granted Phase III bond release for 276.3 acres which included portions of four mines and final bond release (Termination of Jurisdiction) at a fifth mine. Colorado has approved full and final Phase III bond release under its permanent regulatory program on 19 mine sites.

2. DRMS and Colorado Mining Association Reclamation Awards

DRMS participated in the award process for the DRMS and Colorado Mining Association's Annual Reclamation Awards, which encourage innovative reclamation techniques and recognize mining companies that have exceeded the regulatory requirements for environmental protection and reclamation success. Seneca Coal Company, Bowie Resources LLC, Mountain Coal Company, and Colowyo Coal Company were all recognized for excellence in reclamation.

3. Evaluation of Permit Revocation / Bond Forfeiture Sites

DRMS continues to evaluate the reclamation status of permit revocation sites in an effort to terminate jurisdiction. Several of these sites have been seeded for ten years (which serves as the liability time period) or longer. In EY10, DRMS continued revegetation sampling at revoked mine sites to demonstrate revegetation success. The Division terminated jurisdiction on two more of these sites during EY10. Based on past DRMS sampling efforts, the Division has now terminated jurisdiction on seven revoked permit sites. The number of remaining permit revocation sites for EY10 is seven.

4. Training

DRMS continues to ensure that its staff is professionally and technically competent. Employees from Colorado were provided the opportunity to attend instructor-led training sessions held by OSM's TIPS division throughout the evaluation year. DRMS staff participated in six training instances with the TIPS Training Program, covering Introduction to EarthVision – 2D and 3D Modeling, Introduction to ArcGIS for Mining and

Reclamation, Trimble GeoXT – Terrasync and PF Office: Mobile Computing for Reclamation, and lastly CAD200: AutoCAD Map 3D for Permitting and Reclamation. Three Colorado state employees taught TIPS classes this evaluation year.

Staff members attended OSM National Technical Training Program (NTTP) classes for Passive Treatment, Coalfield Communications, Surface and Groundwater Hydrology, Soils and Revegetation, NEPA Procedures, Enforcement Procedures, Bonding: Administrative and Legal, Historic and Archeological Resources, Effective Writing, AML Workshop: Drilling and Grouting, AML: Reclamation Projects, Acid Forming Materials: Fundamentals, and lastly, the Master Instructor Forum.

5. Review of Coal Exploration Cost Estimates

In the fall of 2006, the Division began a project to conduct reviews of the reclamation cost estimates of its coal exploration Notices of Intent (NOIs). In Evaluation Year 2008, the Division developed a baseline of 178 coal exploration files, with a baseline performance bond amount for all Colorado coal exploration sites of $3,625,864.56. The Division subsequently terminated several files for administrative reasons. This project continued through EY09 and EY10.

During EY10, DRMS approved 7 partial and 7 full coal exploration bond release requests, releasing a total of $416,834.00. DRMS administratively terminated 2 additional coal exploration site files, bringing the total number to 9 coal exploration NOI files in EY10. Of the baseline 178 sites, 59 NOIs have either received full bond release or have been terminated for administrative reasons. Additionally, DRMS approved 2 new NOIs during EY10. As of June 30, 2010, there were 115 NOIs on file with the Division. The total amount of exploration bond monies held by the DRMS is $3,412,930.00.

6. NTTP Applied Science Projects - Aspen Reestablishment

Wildlife habitat is an important pre mining and post mining land use in Colorado. Coal mining regions are located within important habitat for deer, elk, sage grouse, and Columbian sharptail grouse, among other species. The important wildlife habitat includes mixed mountain shrub communities and aspen stands. Efforts to reclaim these habitat types have been a challenge. To help reestablish these important communities after mining occurs, the DRMS has supported several applied science projects, including Aspen Reestablishment on surface mined lands.

A mature aspen grove covering over 100 acres was disturbed by operations at the Seneca II-West Mine. Seneca Coal Company, the United States Department of Agriculture (USDA), and the U.S. Forest Service-Rocky Mountain Research Station (RMRS) undertook a study to investigate whether drip irrigation, in association with fencing, deep soil placement, and control of herbaceous competition - could be employed to establish aspen saplings on the regraded area. The NTTP Applied Sciences Program provided additional funding in Fiscal Year 2009.

The results of this experiment have been encouraging. Although assessment over an extended time period will be necessary to document long-term survival and regeneration, the results suggest that successful aspen reestablishment may be achieved by using fencing to exclude large ungulates, combined with suppression of vegetative competition. During EY09, the effectiveness of commercial weed block fabric (in addition to the effect of supplemental high quality irrigation water) was assessed. The researchers discovered that the weed block fabric is a practical and effective method for suppression of vegetative competition in large-scale plantings.

This study concluded that the planting techniques tested on this site can be used for reclamation throughout the U.S. where competition from herbaceous vegetation limits the reproduction of woody perennials on revegetated surface coal mine lands. A paper discussing this study, entitled "The Use of Landscape Fabric and Supplemental Irrigation to Enhance Survival and Growth of Woody Perennials Planted on Reclaimed Surface Mine Lands" was finalized in October, 2009, and can be found on OSM's WRTT website at http://www.techtransfer.osmre.gov/NTTMainSite/appliedscience/AScompleted.shtm.

Issues

Western Fuels-Colorado - New Horizon Mine Ten-Day Notice

On March 23, 2010, the DFD received a citizen's complaint alleging problems with a negative prime farmland determination by DRMS including on-the-ground concerns regarding soil salvage and redistribution, and claiming that procedural regulations for permit revisions and the permitting process were not followed. In response, the DFD issued a Ten-Day Notice (TDN) to the DRMS on April 1, 2010 that included a violation alleging that reclamation of the property in question does not meet the requirements of the Colorado Regulatory Program.

DRMS responded to the TDN on April 23, 2010, and maintained that the Division has taken appropriate action under its regulatory program to ensure that Western Fuels-Colorado (WFC) is in compliance with both its permit and the requirements of the State program. DRMS also claimed that it had good cause for the actions taken with regard to the permit based on an extensive review of the current permit file, which addresses prime farmlands, ensures protection of soils, and evaluates pre mining and post mining land uses.

The property in question was permitted in 2000 and was declared not to be prime farmland. Soil salvage and replacement requirements were less than for prime farmland. In 2008, the Division discovered the property should have been declared prime farmland. However, one half of the property had been mined. The Division incorporated into the permit the soil salvage and replacement requirements for prime farmland. The Division did not go through all the permitting requirements for prime farmland. These requirements could result in more stringent soil salvage and replacements, and revegetation requirements.

By letter dated May 5, 2010, the DFD informed the DRMS that it had shown good cause for not taking action to cause the possible violation to be corrected because the possible violation does not exist in accordance with 30 CFR §842.11(b) (4) (i). Specifically, the DFD found that WFC's permit for the property in question incorporated the minimum requirements for prime farmland and that mining and reclamation of the property located within the permit boundary has been conducted in accordance with the approved permit. Therefore, DFD found there was no violation. DFD did begin discussions with the Division on the permitting issues.

On May 7, 2010, OSM-WR's Regional Director received a request from the citizen to conduct an informal review of the DFD's May 5, 2010 decision. Specifically, the citizen disagreed with the DFD's decision, alleged that the DRMS did not show good cause for not taking action, and reiterated their concerns regarding the prime farmland determination, soil salvage and redistribution, and permit revision procedures including pending Permit Revision No. 6 (PR-6). PR-6 was submitted on November 12, 2009, proposing clarifications associated with post mining land uses, sediment control issues, final post mining contours, and prime farmland vegetation standards. PR-6 was deemed complete on November 23, 2009 and is currently under review by the DRMS.

On May 18, 2010, during OSM's informal review process, DRMS sent letters to both WFC and the citizen acknowledging serious permitting defects for the New Horizon Mine and directed the mining company to work with the property landowners to address unresolved issues that involve both regulatory compliance and landowner coordination. DRMS also advised that it may be required to pursue enforcement procedures if the

permitting defects have resulted in performance standard-related noncompliance and/or if the pending permit matters are not resolved via PR-6.

Consequently, OSM-WR's Regional Director provided an interim response to the citizen on June 9, 2010, proposing to delay his final response to the request for informal review of OSM/DFD's May 5, 2010 decision pending the outcome of DRMS's review of PR-6. The review is ongoing.

Innovations

The Division uses a computer program to calculate all of its reclamation cost estimates. The program, Colorado Integrated Reclamation Cost Estimating System (CIRCES), was developed in-house over ten years ago. It has simplified the task of calculating reclamation cost estimates, as they are no longer completed by hand. CIRCES is a combination of 33 separate modules that help the user estimate costs for all areas of a reclamation project, including earthmoving tasks, demolition, revegetation, mine and borehole sealing, blasting, and other miscellaneous reclamation tasks. Each fall, the Division updates CIRCES with new costs and, if necessary, new equipment models and performance data. Aside from the annual updates, the structure of CIRCES has not changed since its inception. The programming language used for CIRCES is "Visual Baler", an outdated platform that is no longer supported.

In 2008, through the use of an outside contractor, the Division began reprogramming CIRCES in Vb.Net. The new estimating software will be contained within the Division's Electronic Permit System. The interface with the Electronic Permit System will simplify the estimating and data storage process. In addition to linking CIRCES to the Electronic Permit System, the program is being made more user-friendly, with the addition of drop-down menus, fill in the blank forms, and other data entry changes. The majority of the modules have been reprogrammed and Staff is testing each module as it is completed. The anticipated completion date for the reprogramming of CIRCES is December, 2010.

V. Success in Achieving the Purposes of SMCRA

The Team evaluates the number and extent of observed off-site impacts, the number and percentage of inspectable units free of off-site impacts, the number of acres that have been mined and reclaimed and which meet the bond release requirements and have been released for the various phases of reclamation, and the effectiveness of customer service provided by the State. Individual topic reports are available in the WR-DFD Office and provide additional details on how the following evaluations and measurements were conducted.

In order to validate the credibility of State Regulatory programs and enhance Federal oversight improvement efforts, OSM announced in November of 2009 that it would immediately increase the number of oversight inspections in EY10. OSM also began conducting independent unannounced oversight inspections. OSM scheduled and conducted these inspections at independently selected mine sites. Independent inspections provide observations and insight into the effectiveness of State regulatory programs by evaluating the current compliance status of mines in each state.

The DFD conducted four joint complete and three joint partial inspections of coal mining operations in Colorado during EY10, in addition to one partial and one complete independent inspection. This was a significant increase in the number of inspections conducted by the DFD over the previous evaluation year. During EY09, DRMS issued seven notices of violation (NOVs), while the DFD did not issue any enforcement actions or Ten-Day Notices (TDNs). During EY10, DRMS issued two NOVs. One TDN was issued to the State by the DFD as a result of a citizen's complaint. No enforcement actions were taken by DFD as a result of the independent inspections that were conducted, and site conditions indicate that DRMS is effectively implementing and enforcing its program.

Offsite Impacts

An "offsite impact" results from a surface coal mining and reclamation activity or operation that causes a negative effect on resources (people, land, water, or structures) outside the area authorized by the permit for conducting mining and reclamation activities. The applicable State program must regulate or control the mining or reclamation activity, or the result of the activity, causing an offsite impact. In addition, the impact on the resource must be substantiated as being related to a mining and reclamation activity, and must be outside the area authorized by the permit for conducting mining and reclamation activities (OSM Directive, REG-8).

Table 4 shows the number and type of offsite impacts that were observed and documented as having occurred during EY10, for both permitted sites and bond forfeiture sites. The Team identified no offsite impacts on permitted sites and 2 offsite impacts on bond forfeiture sites during EY10 (Table 4).

Permitted Mine Sites Where Reclamation Performance Bonds Have Not Been Forfeited

The Team assessed whether offsite impacts had occurred on each of the 31 permitted coal mining operations that existed at some time during the evaluation period. The Team did so by evaluating the following on-the-ground observations on permitted sites: 148 DRMS complete inspections; 238 DRMS partial inspections (Table 9); 10 oversight bond release inspections; 4 OSM/DRMS joint complete oversight inspections; and 3 OSM / DRMS partial inspections/special focus evaluations. These inspections are included in the DRMS complete and partial inspection totals reported. Additionally, OSM conducted one complete and one partial independent inspection. Based on the above numbers and DFD's monthly review of all DRMS inspection reports and enforcement actions, the Team finds that DRMS has met or exceeded the required inspection frequency on all inspectable units. For EY10, the Team documented zero offsite impacts that occurred on permitted mine sites.

Bond Forfeitures and Revoked Permit Sites

During EY10, DRMS conducted 20 complete and 7 partial inspections on 9 bond forfeiture sites. At the start of EY10, there were nine bond forfeiture sites in Colorado. DRMS terminated jurisdiction on two of those sites during the evaluation year, resulting in 7 bond forfeiture sites by the evaluation year's end. DRMS documented 2 minor hydrological offsite impacts to a land resource on 2 bond forfeiture sites. Eighty-two percent of the bond forfeiture and permit revocation sites (7of 9) were free of offsite impacts for EY10 (Table 4).

Joint, Complete, Oversight Inspections

Each year the Team evaluates offsite impacts during joint, complete oversight inspections selected by the Team to reflect current Colorado coal mining conditions and coal mining regions. The report detailing the complete inspections conducted during EY10 is available for review at the DFD Office. No unresolved problems with offsite impacts were identified as a result of these inspections.

Reclamation Success

Permitted Mine Sites Where Reclamation Performance Bonds Have Not Been Forfeited

Each evaluation year the Team compiles reclamation information for all operations that DRMS has permitted under the Colorado Regulatory Program since its approval in December, 1980. This reclamation information is derived from annual reclamation reports submitted to DRMS by all permitted coal mine operations and evaluation year bond release data contained in DRMS's permitting database.

The annual reclamation reports show mining and reclamation data based on the calendar year, and is reflected in the attached Optional Table named "Reclamation Status of all Areas Disturbed Under the Colorado Permanent Regulatory Program" (see Appendix A). Using the data from this table, the Team can accurately determine acreage in the following categories: disturbed acreage; acreage backfilled and graded; acreage topsoiled and seeded; acreage seeded for 10 years or longer; and Phase I, II, and III bond release acreage. During EY10, DRMS granted Phase I bond releases on 907.5 acres, Phase II bond releases on 50 acres, and Phase III bond releases on 276 acres (Table 5).

Review of data in the EY10 Colorado Reclamation Status Table indicates that 62% (13,784 of 22,221 acres) of the total disturbed acreage on active, temporarily inactive, and inactive operations has been backfilled and graded.

Of the 22,221 total disturbed acres, 7,979 acres consist of long-term facilities and active mining areas that are not subject to contemporaneous reclamation requirements during any given evaluation year, and thus not eligible for any phase of bond release. Several operations have not submitted bond release applications for lands that have been reclaimed 10 years or longer.

Since the Colorado Permanent Regulatory Program was approved in December, 1980, DRMS has granted Phase III bond release on a total of 8,623 acres. This successfully reclaimed acreage is 32 percent of the total disturbed acreage under the Colorado permanent regulatory program (8,623 of 26,703 acres that includes all permitted mining operations, and full Phase III bond release mines, but not including bond forfeiture sites).

OSM concludes that reclamation of mined land in Colorado is successful based on the Team's review of the coal permittee's annual reclamation reports, DRMS's permitting database, the EY10 Colorado Reclamation Status Table and DRMS routine monthly inspections that include reclamation success evaluations of the reclaimed lands.

Bond Forfeitures and Revoked Permit Sites

During EY10, DRMS continued to evaluate bond forfeiture sites for reclamation success that will lead to the termination of jurisdiction. The Division issued Proposed Decisions in EY10 to terminate jurisdiction at two forfeiture sites. These Proposed Decisions became final in EY10. DRMS continues to monitor revegetation success as necessary at the bond forfeiture and permit revocation sites.

Joint, Complete, Oversight Inspections

Each year the Team evaluates reclamation success during joint, complete oversight inspections selected by the Team to reflect current Colorado coal mining conditions and coal mining regions. The report detailing the complete inspections conducted during EY10 is available for review in the DFD office. No unresolved problems with reclamation success were identified as a result of these inspections.

Customer Service

To evaluate the effectiveness of customer service provided by DRMS, the Team selects a program area to monitor the States' responses to complaints, requests for assistance, and services. During EY10, the Team evaluated whether the DRMS is effectively implementing its program by requiring proper signs and markers to be posted and maintained in dangerous and sensitive areas on mine sites. For a discussion of this evaluation, refer to Section VII, "Customer Service - Signs and Markers".

VI. OSM Assistance

Grants

For the one-year grant period starting January 1, 2009 and ending December 31, 2009, OSM funded an Administrative and Enforcement Grant to the Colorado program in the amount of $2,301,561.00 (Table 8). Through a Federal lands cooperative agreement, OSM reimburses DRMS for permitting, inspection, and other activities that it performs for mines on Federal lands. Because most of the acreage mined for coal in Colorado is on Federal lands (Table 2), 79 percent of DRMS total program costs are funded by OSM.

OSM funded a grant to the Colorado Abandoned Mine Land (AML) Program in the amount of $7,383,764.00 (Table 8) for a three year period which will end June 30, 2012. This grant applies to both administrative and construction expenses. This amount represents 100 percent funding for the AML Program.

Education/Outreach

WRTT gave a presentation to students attending "*A Total Concept of the Mining Industry*", part of the 42nd Annual Summer Field Course at the Colorado School of Mines in Golden, Colorado. This accredited summer field course for science educators is jointly sponsored by the Colorado School of Mines and the Colorado Mining Association.

Colorado DRMS staff participated in six training instances with the TIPS Training Program, and provided three instructors for TIPS classes. DRMS staff also attended 13 National Technical Training Program classes.

OSM's Technical Librarian filled three reference requests from Colorado State Regulatory Association staff members. OSM's Technical Library web site can be accessed at http://www.techtransfer.osmre.gov/NTTMainSite/osmlibrary.shtm.

Technology Support

DRMS reported continued success using a downhole camera (www.GeoVision.com) provided by WRTT. DRMS used the downhole camera throughout the summer and fall of 2009 to monitor AML drilling and grouting projects being completed in Erie and Colorado Springs, CO. A sand and structural foam grout mixture was used, and the downhole camera allowed operators to view where and how the grout was filling the abandoned mine voids.

VII. Evaluation Topics

Each year the Team selects specific evaluation topics to determine whether DRMS is effective in preventing or minimizing offsite impacts, ensuring reclamation success, and providing customer service. Following are the descriptions and findings of the evaluations conducted during EY10. More detailed evaluation reports for these topics are maintained at the DFD.

Prevention of Offsite Impacts – Methane Drainage Wells

OSM's Directive REG-8 requires that it annually evaluate the effectiveness of State Programs in protecting the

environment and the public from offsite impacts resulting from surface coal mining and reclamation operations. The focus of this evaluation was to determine whether DRMS is effectively implementing its program by ensuring that offsite impacts from mining activities associated with methane drainage wells are being prevented. An offsite impact from mining activities associated with methane drainage wells would be a condition that affects people, land, water, or structures beyond the disturbed areas defined in the DRMS mine permits for these mining activities. Two underground mine sites (50% of the underground mines in Colorado that currently utilize methane drainage wells) were evaluated.

Mining activities associated with methane drainage wells may include:

1. Construction and maintenance of drill roads
2. Construction and maintenance of drill pads and mud pits
3. Drilling and completion of methane drainage wells
4. Operation and maintenance of wells and pads (post-completion), and
5. Installation and maintenance of erosion control/run-off treatment systems.

Findings and Results

Drill pad areas and associated roads were evaluated in various stages of activity, operation / maintenance, and reclamation. Drill pad areas are all "small area exemptions" (SAEs), meaning runoff from the drill pad disturbances need not report to a sedimentation pond (Rule 4.05.2(3)). Instead, the best technologies currently available are used to prevent sediment loss and offsite impacts. Beyond being constructed on level ground, sediment control measures included earthen berms, surface roughening, straw wattles, straw bales, and coconut fiber mats. Many of these sediment control devices inherently require maintenance. Indeed, necessary maintenance was observed and operators were notified. In all cases, operators were aware of and prepared to conduct the repair work. Repair work included replacement of straw wattles and re-staking or replacement of coconut fiber mats.

Despite routine necessary maintenance, sediment was not observed to have left any of the 38 pad areas evaluated.

Conclusions and Recommendations

The Team evaluated this topic under the primary objective of OSM Directive REG-8 for determining whether DRMS is successfully preventing offsite impacts from occurring. The Team concluded that the DRMS is fully successful in preventing offsite impacts from methane drainage well pad areas. The Team recommends continued regular inspections of pad areas to ensure sediment control devices are properly maintained.

Ensuring Reclamation Success - Methane Drainage Wells

The Office of Surface Mining, Reclamation, and Enforcement (OSM) and the Colorado Division of Reclamation, Mining, and Safety (DRMS) jointly selected this oversight topic. The Team evaluated whether the DRMS is effectively implementing its program by ensuring that reclamation of disturbances associated with methane drainage wells is being conducted. The requirements of Rule 4.07.3(2) pertain to the permanent sealing of drilled holes and underground openings. Two underground mine sites (50% of the underground mines in Colorado that currently utilize methane drainage wells) were evaluated.

To determine if reclamation was successful the Team verified that:

1. Boreholes have been sealed as required

2. Drill pads and mud pits have been backfilled, graded, topsoiled and seeded as required
3. Roads have been backfilled, graded, topsoiled and seeded as required, and
4. Required erosion control practices and weed control practices are succeeding.

Findings and Results

All reclaimed boreholes the Team evaluated have been sealed as required under Rule 4.07.3(2). Monuments varied from mine to mine, but each individual site was marked as required.

The Team evaluated eight drill pads in intermediate stages of reclamation at one site, five of which had not been backfilled, graded, topsoiled, or seeded in a contemporaneous manner. Rule 4.13 requires reclamation to occur as contemporaneously as practicable with mining operations. The operator claimed that the delay was due to the possibility of reopening the sealed boreholes to develop the methane gas as a fuel source in an electricity-generating project. This operator appeared to wait approximately four years in between sealing a borehole and completely reclaiming the associated pad / road while the methane-generating project is being evaluated. Pad areas and sediment control measures were maintained during this time.

Pad areas that had been completely reclaimed were found to be successful. Pad and associated road areas had been backfilled, graded, and vegetation was well-established. No erosion was noted on reclaimed pad or road areas. Some weed species were observed and are being dealt with under approved weed control practices.

Conclusions and Recommendations

The Team evaluated this topic under the primary objective of OSM Directive REG-8 for determining whether DRMS is successfully ensuring reclamation success. Pad areas are being maintained to prevent sediment from leaving the area when the pads are retained for potential methane development. The Team recommends continued inspections of reclaimed pad areas to ensure weed control measures are employed. The Team concluded that the DRMS program has resulted in fully successful completed reclamation.

Customer Service - Signs and Markers

During EY10, the Oversight Team evaluated whether the DRMS is effectively implementing its program by requiring proper signs and markers to be posted and maintained in dangerous and sensitive areas. The requirements of Rules 4.02.2 (Mine and Permit Identification Signs), 4.02.3 (Perimeter Markers), and 4.02.6 (Blasting Signs) were selected for this evaluation. One surface and three underground mine sites were evaluated.

Findings and Results

Mine and Permit Identification Signs (4.02.2): Each mine evaluated had well-maintained identification (ID) signs at the entrances to their sites from public roads. All ID signs displayed the name, address and phone number of the operator and the DRMS permit number for the current permit authorizing mining activities. An ID sign was observed on the reclaimed mine site, indicating that these signs are maintained until final bond release as required. The requirements of Rule 4.02.2 were met for all evaluated sites.

Perimeter Markers (4.02.3): The surface mine evaluated fenced off the entire permit area. Underground mines varied in the extent to which disturbed area markers (DAM's) were utilized. One underground mine had a partial perimeter fence and DAM's along areas that were not fenced excluding an unstable slope. The slope has been moving to such an extent that it was not advisable for people to enter this potentially dangerous area to install markers. One underground mine evaluated had some DAM's but could have placed more markers to

more clearly delineate the boundaries of areas approved for disturbance. DAM's were present and readily identifiable on the main facilities areas, but drill pad areas did not have them. These pad areas are staked with lathe and flagging before construction activity begins (one borehole location under construction was observed). Drill pad areas did not appear excessively large, or to have encroached on additional land beyond what was necessary for the drilling operations. One mine evaluated did not have any DAM's.

Blasting Signs (4.02.6): All mines evaluated that had explosives on site displayed a sign at their entrance reading: "Warning! Explosives in Use!" and clearly explaining all blast warning signal patterns as required under Rule 4.02.6(3). The reclaimed site did not have or need such signage because no explosives are currently stored or used within the permit area. One mine evaluated conducted regular surface blasting. One active blast area was observed from a distance. Flagging was seen in the vicinity of the charged holes. Yellow cones marked "blasting area" were placed across all roads leading toward the active area. All requirements of Rule 4.02.6 were met for all activities observed under this evaluation.

Conclusions and Recommendations

The Team evaluated this topic under the primary objective of OSM Directive REG-8 for determining whether DRMS is ensuring that mine site customer service is successful. The Team concluded that the DRMS is fully successful in enforcing the requirements of Rules 4.02.2, Mine and Permit Identification Signs, and 4.02.6, Blasting Signs. However, the DRMS is inconsistent in the implementation of Rule 4.02.3, Perimeter Markers.

Perimeter markers were present to varying degrees from complete permit area fencing (surface mine) to no disturbed area markers at all (underground mine). It is recommended that the DRMS enforce a straight interpretation of Rules 4.02.3, Perimeter Markers, and 4.02.4, Duration and Maintenance, by requiring disturbed area markers on underground mine sites to be placed before surface lands are disturbed and maintained during all activities to which they pertain. DRMS may also want to consider the benefit of enforcing this provision as it was intended by the original OSM authors to mean that such markers should remain in place until final bond release. It is also recommended that the DRMS adopt an official policy regarding disturbed area markers on underground mine sites and enforce it consistently throughout the state. This may require several minor permit revisions and field verification during regularly scheduled site inspections.

VIII. OSM National Priority Review Topics

Approximate Original Contour Evaluation

Introduction

The Office of Surface Mining (OSM) selected implementation by States of approximate original contour (AOC) and backfilling and grading provisions as a national priority oversight topic. The OSM Western Regional Office (WR) evaluated the state programs in Alaska, Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming. WR evaluated 20 percent of the mines up to a maximum of five mines in each State. The evaluation included active and reclaimed mines that were determined to be representative of typical conditions in the State. The evaluations were based on the State's regulations. The evaluations focused on: 1) AOC interpretation and permitting documentation; 2) processes for on-the-ground AOC verification; and 3) field verification that backfilling and grading are following the approved mine/operations plan.

Evaluation Methodology Used by the Western Regional Office Team

The National Priorities Review AOC group provided the WR evaluation team with baseline questions to standardize the evaluations nationwide. The answers to the baseline questions provide information on how the

State interprets its AOC provisions. Additionally, the baseline questions provide a framework to enable the field evaluator to measure AOC conditions at each specific mine site.

Summary - Approximate Original Contour Evaluation

Prior to each AOC oversight inspection, the WR Team met with the permit coordinator for the mine to discuss policies relating to the implementation of AOC. During these discussions, the Team asked the baseline questions. The Team attempted to understand the systematic measures the State employs to incorporate AOC in the permit and to approve and verify AOC in the field. The Team also asked whether there has been public commentary or complaints relating to AOC and post mining land use and the outcome of public involvement.

The Team reviewed provisions pertinent to AOC within each permit. The review focused on backfill and grading practices, stream channel reconstruction, hydrology, special conditions such as retention of bluff features, valley fills, and prime farmlands or alluvial valley floors (AVF). The Team examined data that compared pre and post mining conditions for terrain figures, slope and aspect comparisons, and watershed densities. The Team also considered AOC determinations in context of the post mining land uses. Finally, the Team reviewed documentation and justification for variances from AOC including approvals for excess spoil.

Field Evaluation

A WR Team member met with the State permit coordinator to identify areas on the mine site that have been reclaimed to AOC requirements. They also identified representative areas, including drainages, slopes with multiple aspects, and planar surfaces, to be included in the field evaluation. The OSM representative then verified elevations by walking transects. Reconstructed channels and the overall topography were observed. Relevant locations and elevations were recorded using GPS equipment (Trimble GeoXT).

Summary of State Oversight Evaluation Findings for Colorado

The OSM WR Team reviewed the State of Colorado Division of Reclamation, Mining & Safety (DRMS) program for implementation of AOC at five mine sites at the State office in Denver, Colorado. The permits reviewed included: 1) Colowyo Mine – Active surface mine; 2) Trapper Mine – Active surface mine; 3) Seneca II Mine – Reclaimed surface mine; 4) Yoast Mine – Reclaimed surface mine; and 5) West Elk Mine – Active underground mine. A team member field verified AOC at the Colowyo, Trapper and Yoast Mines.

AOC Findings

There is an agreement between OSM and the State that reclamation to AOC means to Phase I bond release criteria. DRMS provided its guideline for applying AOC to Phase 1 Bond Release. The State has not received any comments or citizen complaints relating to AOC or post-mining land use. There are no outstanding required amendments or 30 CFR 732 letters related to AOC or post mining land uses associated with AOC waivers.

The State has a reproducible process for applying its interpretation of AOC to the evaluation, permitting and enforcement of backfilling and grading plans. The State has an outstanding electronic process for permit review which is demonstrated by a clear, systematic history of review of permits, revisions and their associated letters of correspondence for all regulatory actions. Post-mining terrain is approved and subsequent revisions are addressed as Minor, Technical or Permit Revisions. Most revisions related to changes in post-mining terrain are processed as Technical Revisions.

Backfill and grading sections within permit reclamation plans demonstrated soil swell factors resulting from various types of mining operations, which were used to determine if the mine had thin or thick overburden

conditions that could lead to the need for out-of-pit spoils disposal or a variance from AOC. All the permits reviewed reflected the State's interpretation of AOC. In one permit where a variance was granted from AOC, the approved post-mining terrain did approximate the pre-mine area and reclaimed drainage patterns and locations approximated the pre-mine locations. The approved post-mining terrain also supported the post-mine land use as well as or better than the pre-mine conditions. The AOC variances granted were in accordance with OSM's June 22, 2000 Post Mining Land Use Policy. Permits reviewed contained support that proposed backfilling and grading met AOC. Support included contour maps, cross-sections and aerial photography that depicted the pre-mine and post-mine topography. Additionally, permits supported channel reconstruction designs with SEDCAD data sheets. Of the permits reviewed, only the Colowyo Mine has been granted a variance from AOC requirements. Colowyo's variance from AOC was due to the fact that the steep-sloped terrain existing prior to mining would not be reconstructed after mining. The post-mining topography would approximate the pre-mine drainage patterns and locations but would have flatter slopes. The post-mine topography supported the post-mine land use of agricultural and rangeland by providing an increase in forage and a decrease in erosion rates.

The State conducts frequent inspections and reviews annual reports to verify backfill and grading is achieving AOC at the mines that it regulates. OSM conducts regular inspections that verify compliance with the State-approved permit reclamation plan.

After conducting a detailed review, OSM found that the State of Colorado's process for evaluation of mining permits is adequate to ensure that backfilled and graded areas will be reclaimed to AOC and that further follow-up action is not needed.

Field Evaluation Findings

The OSM Team conducted a field verification of lands reclaimed to AOC at the Trapper Mine on February 25th 2010, Colowyo Mine on February 10th 2010 and Yoast Mine on February 11th 2010. The field conditions included cloudy skies with occasional snowfall at the Colowyo, Trapper and Yoast Mines. All three mines had received significant snowfall prior to their respective field verification event and the ground surface was covered with snow of up to two feet in depth.

The Team walked point-to-point transects at the Yoast and Colowyo Mines, with the Yoast transect attempting to capture important features at the mine and the Colowyo transect taking a zigzag path. The Team walked a closed transect at the Trapper mine in a pattern that closely resembled a square. In general, the as-built topography resembled the approved post-mine topography for each of the mines that were field verified by the Team. There were subtle variations between the approved terrain and the as-built terrain at each mine. As-built slopes tended to be slightly gentler than the approved slopes and there was minor variation in the placement of reclaimed stream channels on slopes in some areas. However, these variations were not significant and the overall as-built terrain closely resembled the approved post-mining terrain. The as-built terrain is consistent with the post-mining land use. Based upon the results of field verification at the three mines, it does not appear that the State has a systematic problem with its process of field inspection and verification of AOC.

Bond Adequacy Oversight Evaluation

Introduction – Bond Adequacy Oversight Evaluation

OSM selected state implementation of bond adequacy as a national priority oversight evaluation topic. The purpose for conducting the evaluation was to review the effectiveness of state regulatory authorities in implementing and enforcing their state rules, regulations, policy and guidance documents related to bonding and

to determine the adequacy of the state's bond amount calculations, which set the amount of the bond held by the state. OSM's National Priority Work Plan for conducting the evaluation recommended that OSM Western Region (WR) staff evaluate 20 percent of all coal mines, up to a maximum of five mines per state regulatory program to include reviewing bond adequacy for new and renewed permits, revisions to permits, phased bond releases and bond forfeitures. The WR conducted an evaluation of Colorado's state regulatory program by reviewing five permits.

The evaluation included permits which utilize full-cost conventional bonds for one or more phases of reclamation. In states that have alternate bonding systems, the evaluation was to focus on field reviews of proper reclamation of bond forfeiture sites to assure the sites were reclaimed in accordance with the approved plans.

The bond adequacy work plan entailed three aspects for evaluating bond adequacy. The first aspect was to determine how each state calculated bond amounts for non-forfeited bonds associated with specific permits. The second aspect was to review permit revisions to determine whether the states are properly evaluating bond adequacy as part of the permit revision application process required by 30 CFR 800.15(d). The third aspect was to evaluate recently-forfeited sites if the state has experienced any bond forfeitures since OSM last conducted an in-depth study of bond forfeitures or the adequacy of bond calculations in each state.

Summary – Bond Adequacy Oversight Evaluation

OSM Directive TSR-1, "Handbook for Calculation of Reclamation Bond Amounts" (OSM Bonding Handbook) was the standard by which a state bond calculation was determined adequate for identifying the costs to be considered and included in each calculation. The WR review focused on a pre-determined, randomly selected (by FOD or State) new permits, renewed permits, permit revisions or phased bond releases. As used in the OSM Work Plan, the term "bond adequacy" means the amount of bond posted for a permitted operation is at least equal to the calculated bond amount by the state for it to complete reclamation should forfeiture occur. In the western region, all states use some form of the OSM Bonding Handbook calculation method to determine full-cost conventional bond amounts.

There are no alternate bonding systems in any of the WR states. There have been no recent bond forfeitures, with the last bond forfeiture having occurred in 2000. Since the last bonding oversight reviews in about 1995, none of the states has undergone procedural changes in the way they calculate bond amounts. There are no recent bond forfeitures to evaluate in the Western Region.

This oversight evaluation did not include a review of actual bonding instruments to determine if the amount of bond held by a state was equal to or greater than the amount determined by their bond cost calculation.

Evaluation Methodology Used by the Western Region Bonding Oversight Team

WR staff began each state bonding program evaluation by reviewing (1) the state guidance documents or policies, (2) each mine's operation plan to determine the mining method and planned progression of mining over both the permit term and the life of mine, the types of equipment being used, and the extent of facilities and other mining-related disturbance, (3) the reclamation plan to determine the reclamation process and identify structures approved to remain in place or to be removed after mining, and finally, (4) the permittee's

reclamation cost estimate and the state's bond amount calculation to determine the bond amount posted, if it was made available.

WR staff reviewed the types and volumes of material to be moved (although these were not verified), the type and amount of demolition, the types of equipment proposed for use, the costs (labor, equipment, demolition, etc.), and generally looked to see that the costs were reflective of the requirements detailed in the approved reclamation plan. OSM determined the state bond cost calculations were reasonable for each permit reviewed, with wage rates comparable to the Davis Bacon wage rates or the state's rates. The amount of each bond amount calculation was evaluated either by an independent calculation by WR staff or by the spot checking of costs including hourly costs, wage rates, and demolition costs, as well as the volumes, items or counts associated with each unit cost. The reclamation plan dictated the extent of what costs were included in the overall bond amount calculation, including but not limited to backfilling, grading, topsoiling, type and amount of vegetation, failure rate of vegetation, retention fees associated with a phased bond release, removals or downsizing of structures, long- or short-term monitoring, and other requirements to restore the land to its approved reclamation status once mining has been completed.

For the purpose of this state oversight evaluation, OSM assumed, but did not verify, that the volumes of material to be moved in each state's bond amount calculation were correct. This was also true for the acres to be covered with topsoil or substitute material, and those which will have various types of vegetation.

WR staff was provided with a number of pre-written questions in the Bonding Oversight Work Plan which guided each engineer through a fairly standardized evaluation process of each state regulatory program methodology and to determine the adequacy of each state's bond cost calculation for each permit reviewed. The Bonding Work Plan included specific questions which directed the WR staff to collect information on how each state determines its bond amounts compared to how OSM would evaluate the adequacy of each state's bond cost calculations, when using their regulations and guidance documents, and finally, how the public is involved with the state's reclamation cost estimating process.

Bond Amount Calculation Adequacy Oversight Evaluation

During DRMS' bond adequacy oversight office visit, the WR Bonding Team engineers met with the state permit coordinators, supervisory staff, and engineers to discuss programmatic policies relating to the state's interpretation and implementation of their bond calculation procedures, as well as the specifics of each permittee's reclamation cost estimate. OSM reviewed the procedures employed by each state to approve and verify bond amounts, and determine if there has been any public commentary or complaints relating to the adequacy of bond amounts. The WR engineers reviewed language within each permit as it relates to the state program regulations, rules and guidance for calculating bond amounts. This review focused on several aspects of each permit including information found in the operations plan, the reclamation plan and in the reclamation cost estimates to determine what had been considered for and included in each state's bond amount calculation, and whether the amount of the bond reflected what was approved in the reclamation plan of each permit.

The sources of cost factors used in the reclamation cost estimates and bond amount calculations were evaluated for reasonableness, as were the raw hourly costs for equipment and labor, demolition and materials. The types and amounts of indirect, administrative, or other add-on costs calculated by a state were, for the most part,

similar to the types and purposes of costs suggested in the OSM Bonding Handbook. The amount of any notable difference between OSM's costs and each state's costs are included in the state summaries.

Colorado simply defers to the procedures and reference materials stated in the OSM Bonding Handbook, and they do not have their own specific state guidance documents. Colorado indicated that permittee reclamation cost estimates are reviewed for adequacy at least as frequently as the OSM requirements, which occur during renewal and mid-term reviews (at least every 2.5 years).

All bonds reviewed by WR engineers seemed reasonable and similar to the independently-determined OSM estimates. Even with the differences in what DRMS considered as "Indirect", administrative or other add-on costs, the estimates had differences of no more than about 10% of what WR engineers calculated independently.

There are no outstanding required program amendments or 30 CFR 732 Notifications related to bond adequacy. Neither OSM Denver Field Division Office nor DRMS have received any citizen complaints related to bond adequacy in recent years. Colorado has not changed their reclamation bond cost estimation methodology since the last comprehensive OSM review.

Comments made to the state staff were minor considerations about specific line items that might potentially affect their bond estimate amounts, and should be evaluated in their next upcoming review of the bond amount. During the office visit, the WR staff interacted with the state staff involved with or performing permit reviews and calculation of bond amounts. Region-wide, the WR staff found that in nearly half the evaluated states, there is limited technical staff to do permit review and calculation of bond amounts. A number of the WR states are actively undergoing furloughs and layoffs. In a couple of states, the staff is relatively new and asked basic questions about OSM's procedure to calculate bond amounts, the types of things considered and why that information was included. Specific questions from state staff were answered about calculating the amount of bond that can be released in a phased bond release, or, more specifically, the amount to be retained following a release, and what type of information must be included in each operation and reclamation plan used to determine a reclamation cost estimate.

Not all "Indirect" costs are calculated by the WR states in the same manner as that suggested by the OSM Bonding Handbook. However, in all cases, the same types of costs are included as Indirect, administrative or other add-on costs, or simply as part of the direct cost calculation. In some cases, the state determines an actual cost, rather than percentage for a specific type of add-on cost, such as mobilization/demobilization. In other cases, costs including profit, overhead and labor benefit costs are included in the hourly direct costs, thus these are not added later as an Indirect-type cost.

OSM found that Colorado has procedures in place to ensure the thorough and comprehensive calculation of bond amounts for all phases of reclamation, and bond amounts are re-evaluated by state staff as part of each Annual Report, revision, renewal, midterm or request to release review. In most cases, the bond amount calculations were substantiated by detailed information explained in operation and reclamation plans, including things such as mining projections, mining methods, pit dimensions, facilities maps, and details such as equipment haul distances, equipment productivity factors, and sources of costs including seed and labor rates. Following evaluation of the documentation, WR engineers asked Bonding Work Plan pre-written questions aimed at evaluating the state's procedures for determining adequate reclamation bond amounts used in support of each posted bond (or other bonding instrument) amount.

In the WR states, the amount of bond held may exceed the amount of the state's bond amount calculation. In some cases, permittees post a bond (or other bonding instrument) in an amount higher than the actual calculated amount of the bond to allow for any increases in the calculated bond amount due to future permit revisions that might occur. This practice of "over-bonding" allows permittees to re-evaluate the reclamation cost estimate, and states to recalculate the bond amount without the permittees having to resubmit their bonding contractual agreements to their corporate offices for approval each time there is an incidental increase in the bond amount. This practice remains at the discretion of the permittee.

Summary of State Oversight Evaluation Findings for Colorado

The OSM Team reviewed the state of Colorado Division of Reclamation, Mining and Safety (DRMS) program for implementation of bond adequacy at 5 mine sites. The permits (one permit per mine) reviewed included Bowie No. 2, Foidel Creek Mine; Elk Creek Mine, Yoast Mine, and West Elk Mine.

Bond Adequacy Findings

The state of Colorado uses the OSM's Bonding Handbook procedure to calculate bond amounts state-wide, and through their use of their automated "CIRCES" software program which calculates the costs, their bond calculation estimates are based on a mine's operation and reclamation plan for each permitting action. The software provides for use of assumptions and efficiencies, as suggested by OSM's Bonding Handbook when calculating hourly costs for equipment. Wages are set by the Colorado Department of Transportation each year and all costs, including proprietary reference materials used in the software, are updated annually in the fall. Demolition costs are determined using the Means Site Work & Landscape Cost Data Guide. For lands fully reclaimed but not yet released, each bond calculation includes a total of 150% of the full cost of topsoiling, scarification and seed for the area not yet released from Phase III bond.

The OSM Team reviewed the state's equipment productivity and the equipment, labor and demolition costs, and found these to be essentially the same costs as those used by OSM. Full bond evaluations are performed by the state at mid-term and renewal (year 2.5 and 5 of the 5-year permit term).

The OSM reviews included a mid-term review, a significant technical revision, a minor revision, and Phase 1 bond release. After conducting a detailed review, OSM determined that the state of Colorado's process for evaluation of mining permit bond amounts is adequate to ensure bonded areas can be reclaimed as required in the approved reclamation plans.

There are no outstanding required program amendments or 30 CFR 732 notifications related to bonding, nor are there any post mining pollution discharges. There have been no public inquiries regarding bond adequacy. Colorado is in compliance with their bond adequacy regulations.

Review of State Documents

The state of Colorado uses the OSM's Bonding Handbook calculation procedure to determine bond calculations, and through their use of their automated "CIRCES" software program, Colorado's Division of Reclamation Mining and Safety (DRMS) staff determine all bond amounts based on their calculated cost of reclamation. The bond amounts are based on a mine's operation and reclamation plan for each permitting action. For demolition costs, the most recently published Means Site Work & Landscape Cost Data Guide was used to determine unit costs. The CIRCES software provides for assumptions and efficiencies, as suggested by the OSM Bonding Handbook, when calculating hourly costs for equipment. Wages are set by the Colorado

Department of Transportation each year and all costs (including proprietary reference materials) used in the software are updated annually.

The OSM staff reviewed the equipment productivity, and the equipment, labor and demolition costs. These Colorado specific costs were determined from the same reference sources suggested by the OSM Handbook. The same thorough evaluation of the bond adequacy is performed by the state for all permit actions that may affect the reclamation costs. Full bond evaluations are normally performed at mid-term and renewal (year 2.5 and 5 of each 5-year permit term), or if a major revision affects the cost of reclamation. For lands fully reclaimed but not yet released, each bond estimate includes a total of 150% of the full cost of topsoiling, scarification and seeding the area not yet released from Phase III bond.

The reviews included a mid-term review, a significant technical revision, a minor revision, and Phase 1 bond release. Colorado is in compliance with their bond adequacy regulations.

EY10 Colorado Evaluation Team Members

Sandy Brown and Daniel Hernandez, DRMS

Christine Belka, Elizabeth Shaeffer, Christy Hulsman, and Howard Strand, DFD

David Berry, DRMS, and James Fulton, DFD, Team Coaches

Cover Photo: Reclamation at the Bowie No. 1 Mine, who received an award from The Colorado Mined Land Reclamation Board for "Excellence in Steep Slope Reclamation"

Colorado
EY 2010, ending June 30, 2010

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:			
Calendar Year			
CY 2007	8.505	27.044	35.549
CY 2008	7.637	25.798	33.435
CY 2009	5.988	21.071	27.059

A Coal production as shown in this table is the gross tonnage and includes coal produced during the calendar year (CY) for sale, transfer or use. The coal produced in each CY quarter is reported to OSM during the following quarter by each mining company on line 8 (a) of form OSM-1, 'Coal Reclamation Fee Report.' 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 calendar years to include the last full calendar year for which data is available.

TABLE 2

Inspectable Units
As of June 30, 2010

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	12	0	0	0	1	0	13	13	0.0	374.0	0.0	65.0	439.0
Underground mines	0	14	0	3	0	7	0	24	24	0.0	1,083.0	0.0	78.0	1,161.0
Other facilities	0	1	0	1	0	0	0	2	2	0.0	0.0	0.0	2.0	2.0
Total	0	27	0	4	0	8	0	39	39	0.0	1,457.0	0.0	145.0	1,602.0

Total number of permits:			39
Average number of permits per inspectable unit (excluding exploration sites):			1.00
Average number of acres per inspectable unit (excluding exploration sites):			4,107.69
Number of exploration permits on State and private lands:	0	On Federal lands[C]:	115
Number of exploration notices on State and private lands:	0	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, 2010

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	0	0	0	0	0	0	0	0	0	0	0	0
Renewals	2	2		0	1		0	0		2	3	
Transfers, sales, and assignments of permit rights	0	0		0	0		0	0		0	0	
Small operator assistance	0	0		0	0		0	0		0	0	
Exploration permits										4	2	
Exploration notices [B]											0	
Revisions (exclusive of incidential boundary revisions)		0			0			2			2	
Revisions (adding acreage but are not incidental boundary revisions)	0	0	0	0	0	0	0	0	0	0	0	0
Incidental boundary revisions	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	2	0	0	1	0	0	2	0	6	7	0

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	0	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	0
	Hydrology	0	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	0
	Other	0	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	0

Total number of inspectable units (excluding bond forfeiture sites): 31
Inspectable units free of off-site impacts: 31
Inspectable units with off-site impacts: 0

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	0
	Land Stability	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hydrology	0	0	0	0	2	0	0	0	0	0	0	0	0
	Encroachment	0	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	0
	Total	0	0	0	0	2	0	0	0	0	0	0	0	0

Total number of inspectable units (only bond forfeiture sites): 8
Inspectable units free of off-site impacts: 6
Inspectable units with off-site impacts: 2

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	908		
Phase II	- Surface stability - Establishment of vegetation	50	50	
Phase III	- Post-mining land use/productivity restored - Successful permanent vegetation - Groundwater recharge, quality and quantity restored - Surface water quality and quantity restored	276	50	50

Bonded Acreage [A]	Acres during this evaluation year
Total number of new acres bonded during this evaluation year	513
Number of acres bonded during this evaluation year that are considered remining, if available	0
Number of acres where bond was forfeited during this evaluation year	0

Bonded Acreage Status	Cumulative Acres
Total number of acres bonded as of the end of last review period (June 30, 2009) [B]	18,955
Total number of acres bonded as of the end of this review period (June 30, 2010) [B]	19,468
Sum of acres bonded that are between Phase I bond release and Phase II bond release as of June 30, 2010 [B]	4,019
Sum of acres bonded that are between Phase II bond release and Phase III bond release as of June 30, 2010 [B]	3,349

Disturbed Acreage	Acres
Number of Acres Disturbed during this evaluation year	459
Number of Acres Disturbed at the end of the evaluation year (cumulative)	18,080

[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, 2009 (end of previous evaluation year) [A]	0		0
Sites with bonds forfeited and collected during Evaluation Year 2010 current evaluation year)	0	$ 0	0
Sites with bonds forfeited and collected that were re-permitted during Evaluation Year 2010 (current evaluation year)	0		0
Sites with bonds forfeited and collected that were reclaimed during Evaluation Year 2010 (current evaluation year)	0		0
Sites with bonds forfeited and collected that were unreclaimed as of June 30, 2010 (end of current evaluation year)[A]	0		0
Sites with bonds forfeited but uncollected as of June 30, 2010 (end of current evaluation year)	0		0
Surety/Other Reclamation (In Lieu of Forfeiture)			
Sites being reclaimed by surety/other party as of June 30, 2009 (end of previous evauation year) [B]	0		0
Sites where surety/other party agreed to do reclamation during Evaluation Year 2010 (current evaluation year)	0		0
Sites being reclaimed by surety/other party that were re-permitted during Evaluation Year 2010 (current evaluation year)	0		0
Sites with reclamation completed by surety/other party during Evaluation Year 2010 (current evaluation year) [C]	0		0
Sites being reclaimed by surety/other party as of June 30, 2010 (current evaluation year) [B]	0		0

[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

Colorado

EY 2010, ending June 30, 2010

TABLE 7

State Staffing

(Full-time equivalents at end of evaluation year)

Function	EY 2010
Regulatory Program	
Permit Review	17.00
Inspection	0.00
Other (administrative, fiscal, personnel, etc.)	7.00
Regulatory Program Total	24.00
AML Program Total	20.50
Total	44.50

TABLE 8

Funds Granted To Colorado
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	$ 2,301,561	79.00 %
Other Regulatory Funding, if applicable	$ 0	0.00 %
Subtotal	$ 2,301,561	
Small Operator Assistance Program	$ 0	100 %
Abandoned Mine Land Reclamation Funding [A]	$ 7,383,764	100 %
Totals	$ **9,685,325**	

[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]	112	231
Inactive [A]	16	0
Abandoned [A]	20	0
Total	148	231
Exploration	10	0

[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	2	2
Failure-to-Abate Cessation Order	0	0
Imminent Harm Cessation Order	0	0

[A] Do not include those violations that were vacated.

TABLE 11

Lands Unsuitable Activity

During Current Evaluation Year

	Number	Acreage
Number Petitions Received	0	
Number Petitions Accepted	0	
Number Petitions Rejected	0	
Number Decisions Declaring Lands Unsuitable	0	0
Number Decisions Denying Lands Unsuitable	0	0

Appendix A

EY 2010 Reclamation Status Table of all Areas Disturbed Under the Colorado Permanent Regulatory Program

EVALUATION YEAR 2010

RECLAMATION STATUS OF ALL AREAS DISTURBED UNDER THE COLORADO PERMANENT REGULATORY PROGRAM

Acres Disturbed As of the End of Calendar Year 2009 (CY08, January 1, 2009 - December 31, 2009)

Bond Release based on Evaluation Year (EY 09 July 1, 2009-June 30, 2010)

		Mine type		Disturbed Areas				Areas B/G		Phase I Bond Release		Phase II Bond Release		Seed > 10 Years		Phase III Bond Release	
				1	2	3	4	5	6		7		9		10		11
						Long-term	Active										
Mine Name	Permit	Surface	UG	CY 2009	Total	facilities	Mine Areas	CY 09	Total	EY10	Total	EY10	Total	CY 09	Total	EY10	Total
Active, temporarily inactive, and inactive sites.																	
Edna Mine	C-80-001	X		0.0	1193.4	56.4	0.0		1137	13.3	1305.3	13.3	107.7		1042.4	13.3	107.7
McClane Canyon Mine	C-80-004		X		12.9	9.6	0.0		3.3		0.0		0		0		0
Seneca II Mine	C-80-005	X		0.0	2295.3	38.9	0.0		2256.4	135.3	2054.5		1470.8		1114.5		257.7
Marr Strip Mine	C-80-006	X		0.0	401.4	36.4			365.0		401.2		401.2		299.7		372.7
West Elk Mine	C-80-007		x		404.3	340.9			63.4		20.5		0		0		0
New Horizon Mine	C-80-008	X			706.3	89.2	107.3		509.8		580.4		519.6		144.8		215.6
Trapper Mine	C-81-010	X			6122.3	1091.6	1099.6		3931.1		3811.2		3584.4		2441.2		2925.5
New Elk Mine	C-81-012		X		136.4	91.0	0.0		45.4		35.1				8.7		0.0
Golden Eagle Mine	C-81-013		X		66.2	0.0			66.2		66.2		65.0		6.7		65.0
Southfield Mine	C-81-014		X	0.0	105.8	23.7			82.1		82.1		0.0		21.9		0.0
Deserado Mine	C-81-018		X		445.3	320.9			124.3		0.0		0.0		105.7		0.0
Colowyo Coal Mine	C-81-019	X			4588.7	456.9	2457.3		1674.4		934.4		934.4		1158.9		0.0
Munger Canyon Mine	C-81-020		X	0.0	20.8	2.3	0.0		18.5		17.2		0.0		0.0		0.0
Elk Creek/Sanborn Creek Mir	C-81-022		X	18.6	177.1	98.5		4.0	62.6		0.0		0.0		5.6		0.0
N. Thompson Creek Mine	C-81-025		X	0.0	65.2	4.1			38.7	0.4	65.2	0.4	65.2		38.5	61.1	61.1
Keenesburg Mine	C-81-028	X			438.0	81.0	105.0		252.0		218.8		162.0		201.0	165.3	165.3
Bear Mine	C-81-033		X	0.0	27.2	1.9			25.3		18.0		18.0				18.0
King Coal Mine	C-81-035		X		30.9	29.4			1.5		0.0		0.0		0.0		0.0
Bowie Mine No. 1	C-81-038		X	0.0	155.1	59.4		6.6	95.7		13.8	0.0	0.0		42.0	0.0	0.0
Roadside Portals	C-81-041		X	0.0	241.7	93.7			148.0	2.1	153.1	2.1	2.1		47.0	2.1	2.1
Eagle No. 5 & 9	C-81-044		X	0.0	442.0	160.0			282.0		20.0		20.0		258.8		20.0
Blue Ribbon Mine	C-81-047		X	0.0	16.9	0.7			16.2	34.5	34.5	34.5	34.5			34.5	34.5
Foidel Creek Mine	C-82-056		X		498.1	456.9			41.2								0.0
Seneca II-W Mine	C-82-057	X		0.0	1381.9	182.9	0.0		1199.0	721.9	721.9		0.0		234.8		0.0
Terror Creek Loadout	C-83-059			0.0	13.0	13.0			0.0		0.0						0.0
Coal Ridge No. 1 Mine	C-84-065		X	0.0	45.2	6.8			38.4		38.4		38.4				0.0
Hamilton Mine	C-91-078	X		0.0	111.2	21.0			90.2		90.2						0.0
Carbon Junction Mine	C-92-080	X		0.0	110.7	11.9	0.0		37.6		61.2		61.2		0.0		61.2
HG Loadout	C-92-081			0.0	97.1	97.1			0.0								0.0
Yoast Mine	C-94-082	X		0.0	848.6	27.5	0.0		821.1		173.0				0.0		0.0
Bowie Mine No. 2	C-96-083		X	8.8	279.1	246.6			23.7								0.0
Lorencito Canyon Mine	C-96-084	X	X	0.0	155.2	33.1	0.0		122.1								0.0
SUBTOTAL (AC, TC, IN)				27.4	21,633.3	4183.3	3769.2	10.5	13,572.2	907.5	10,916.2	50.3	7,484.5	0.0	7,172.2	276.3	4,306.4

		Mine type		Disturbed Areas				Areas B/G		Phase I Bond Release		Phase II Bond Release		Seed > 10 Years		Phase III Bond Release	
				1	2	3	4	5	6		7		9		10		11
						Long-term	Active										
Mine Name	Permit	Surface	UG	CY 2009	Total	facilities	Mine Areas	CY 09	Total	EY10	Total	EY10	Total	CY 09	Total	EY10	Total
Sites receiving full release of reclamation performance bonds. (Terminated Permits)																	
Carpenter Pit, 10/91	C-87-073				4.0	4.0					4.0		4.0				4.0
Meadows No. 1 Mine 11/96	C-81-029	X			131.0				131.0		131.0		131.0				131.0
Meeker Area Mines 01/98	C-81-032		X		25.0	5.0			20.0		25.0		25.0				25.0
Canadian Strip Mine 11/98	C-81-026	X			81.0	6.0			75.0		81.0		81.0				81.0
Red Canyon Mines 6/99	C-81-034		X		26.4	2.4			24.0		26.4		26.4				26.4
Energy Mine No. 3 7/99	C-81-062	X			368.0	40.0			328.0		368.0		368.0				368.0
Colorado Coal Mine 12/99	C-81-024	X			74.0				74.0		74.0		74.0				74.0
Bourg Strip Mine-1/00	C-81-021	X			122.7	3.5			119.2		122.7		122.7				122.7
Newlin Creek Mine 8/01	C-81-045		X		17.0	2.0			15.0		17.0		17.0				17.0
Bacon Mine 9/01	C-81-030	X			29.0				29.0		29.0		29.0				29.0
Tomahawk Strip Mine 10/01	C-81-009		X		105.0				105.0		105.0		105.0				105.0
Eckman Park Mine 1/3/02	C-81-071	X			2961.0	21.0			2940.0		2961.0		2961.0				2961.0
Apex No. 2 Mine 1/ 24/03	C-81-011		X		4.5	1.4			3.1		4.5		4.5				4.5
Rimrock Strip Mine 7/26/05	C-89-074	X			19.6	13.2			6.4		19.6		19.6				19.6
Chim. Rock Mine 9/27/05	C-81-023	X			110.0	0.0			110.0		110.0		110.0				110.0
Raton Creek Mines 12/9/05	C-82-055		X		30.0	0.0			30.0		30.0		30.0				30.0
Hayden Gulch Mine 9/06	C-80-003	X			368.0	4.0			364.0		368.0		368				368
Eastside Mine 1/08	C-84-063		X		6.0	0.0			6.0		6.0	2.0	6.0			6.0	6.0
Blue Ribbon 9/09	C-81-047		X														
SUBTOTAL (TR)					4482.2	102.5	0.0	0.0	4379.7	0.0	4482.2	2.0	4482.2	0.0	0.0	6.0	4482.2
					26115.5												
Bond Forfeiture Sites																Release of Liability	
OC Mine	C-80-002		X		3.2				3.2								
Fruita No. 1 & 2 Mines	C-81-015		X		11.6				11.6								
Hawk's Nest Mine	C-81-016		X		29.4				29.4								
Coal Basin Mines	C-81-017		X		333.0												
~~New Pryor Strip 1/3/06~~	~~C-81-031~~	~~X~~			~~26.0~~				~~26.0~~							~~22.0~~	~~22.0~~
GEC Strip Mine	C-81-037	X			185.0				185.0								
~~Grasey Gap Mine 7/15/09~~	~~C-81-039~~	~~X~~			~~337.0~~				~~337.0~~		~~337.0~~						
~~Arness-McGriffin deleted 6/08~~	~~77-3 ug; C-81-040 INCompl~~		~~X~~		~~5.0~~				~~5.0~~								
Sunlight Mine	C-81-046		X		5.2				5.2								
~~Trinidad Basin Mine 3/2/10~~	~~C-81-048~~	~~X~~			~~250.0~~				~~250.0~~		~~250.0~~						
~~Blue Flame Mine 3/5/2008~~	~~C-81-053~~		~~X~~		~~3.0~~				~~3.0~~								
~~Twin Pines Mine No. 2 1/6/10~~	~~C-83-058~~		~~X~~		~~9.5~~				~~9.5~~		~~9.5~~						
Coal Gulch	C-84-067		X		16.5				16.5								
~~La Plata Mine~~	~~C-87-072~~		~~X~~		~~10.0~~				~~7.0~~		~~7.0~~		~~7.0~~			~~7.0~~	~~7.0~~
SUBTOTAL					1224.4				888.4		603.5					29.0	29.0
GRAND TOTAL				**27.4**	**27,339.9**	**4,285.8**	**3,769.2**		**18,840.3**	**907.5**	**16,001.9**	**52.3**	**11,966.7**	**0.0**	**7,172.2**	**311.3**	**8,817.6**