Office of Surface Mining
Reclamation and Enforcement

Pittsburgh Field Division

Evaluation Report

Determination of Required Bond Amounts

Maryland Regulatory Program

Evaluation Year 2010

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Objectives

As directed, and established in the Evaluation Year 2010 Performance Agreement between The Maryland Department of the Environment (MDE) and Office of Surface Mining Reclamation and Enforcement (OSM), and outlined by the National Bonding Study Team, the primary focus of this evaluation was an oversight review of the implementation of Maryland's program requirements to evaluate how they comply with the State program counterparts to 30 CFR 800.14 and 800.15(d), which govern the determination of required bond amounts. The review focused on three aspects of Maryland's program:

- How the state is calculating bond amounts for non-forfeited permits.
- Whether the state is properly evaluating bond adequacy as part of the permit revision application review process, as required by 30 CFR 800.15(d).
- An evaluation of recently forfeited sites, if the state has experienced any bond forfeitures since the last time that OSM conducted an in-depth study of bond forfeitures or the adequacy of bond calculations in that state.

Summary

OSM evaluated a sample of five permits in Maryland to determine the adequacy of bonding. This review focused on both initial permitting and permit renewals. Previous evaluation reports of Maryland's bonding system were also reviewed. OSM considered how forfeiture sites are being reclaimed in accordance with the approved reclamation plan. Because Maryland has an Alternative Bonding System, the review focused on a field evaluation of proper reclamation of forfeiture sites (i.e., has the site been reclaimed in accordance with the approved reclamation plan).

OSM used a series of questions, provided in the ***Findings*** section of the report, as part of this study. To the extent practicable, the sample population included a representative range of sizes and types of permits and permit revisions. OSM conducted appropriate reviews of documentation and verification on all of the permits reviewed. Field review was conducted as necessary to gather data on the adequacy of site reclamation for bond forfeiture sites. Once these reviews were completed, a draft report was prepared for review and comment according to normal oversight review procedures in Maryland. The OSM Appalachian Regional Director was responsible for guidance and quality control on the evaluation process and the final report. The National Bonding Study Team will prepare a summary report by combining the results from each Region into an agency report. The overarching questions to be answered by this effort are:

- **Is Maryland properly calculating bond amounts to ensure proper site reclamation?**
- **Is the Maryland bond pool sufficient to complete reclamation requirements?**

This evaluation found that Maryland is calculating bond amounts in accordance with its approved Program and the bond pool has enough funds to reclaim forfeited sites at today's estimated costs. Maryland uses a mix of instruments – some programmatic, some not – to keep its bond pool viable. The non-programmatic instruments include soliciting other coal operations to reclaim the forfeited site outside the bond pool to the greatest extent possible. The result is that reclamation of forfeited sites is delayed or slowed while the State seeks such agreements. The postponement results in higher costs for the State when search for an alternative is fruitless. It also places the State in conflict with its obligation to reclamation forfeited sites in a timely manner. This mixture of approaches and funding vehicles makes evaluating the financial health of the bond pool problematic because of the many paths to reclamation that might be taking place on a given forfeited site. Because of these complexities, OSM is recommending that the bond pool undergo an independent actuarial study. OSM will

undertake a complete review of all forfeited sites, the effectiveness of reclamation and a cost analysis of remaining reclamation during Evaluation Year 2011.

Methodology

OSM met with MDE February 10, 2010 to describe the methodology for this evaluation as well as discuss, in general, MDE's current bonding program. At this meeting and in the following weeks OSM interviewed Maryland program staff to determine if any complaints regarding bonding had been filed over the past three years, and the outcome of these complaints. The interview also identified Maryland's process for Calculating bond amounts during the application and permitting process. OSM interviewed Maryland's permit manager to determine if variances or exceptions to bond calculation occur. The interviews also determined whether permit applications include bond calculations based on current reclamation costs.

Previous OSM evaluations of Maryland's bonding system were reviewed in detail, and significant findings and recommendations from this work were noted and included in this report.

OSM selected a sample of five sites to review bonding information. Records verification occurred on all of the five sites selected. Verification of the sampled sites was conducted by an OSM Environmental Protection Specialist, and/or an OSM Reclamation Specialist. OSM notified Maryland's inspection staff of site visits and they were encouraged to participate in the field verification outings.

OSM consolidated and reviewed the data collected and drafted a report to provide to MDE staff for comment. OSM summarized the findings of the study in a draft report including answers to the questions in the national guidelines, recommendations, and the results of any discussions with Maryland. Maryland was provided with an opportunity to review and comment on the draft report. OSM considered each of Maryland's comments in the final report. The review was completed within the schedule provided by the national guidelines.

Background

Since inception, Maryland's Approved Program has operated with an Alternative Bonding System (ABS). Prior to 1996, Maryland required a minimum site-specific "bond on hand" of $1500/acre for phase I reclamation (backfilling, grading, re-soiling, seeding and mulching), $300/acre for phase II (vegetation success), and $300/acre for phase III, with a minimum total of $10,000 for each site.

A 1994 actuarial study recommended re-evaluation of rates in five years (1999). On May 28, 1996, Maryland increased bond rates so that support areas were bonded at $1500/acre, the rest of phase I acreage at $3000/acre for the first 40 acres, and $3500/acre for additional acreage beyond 40.

In addition to the site-specific bond on hand, Maryland maintains a **Bond Supplement Reserve Fund (BSR)** which is used to reclaim forfeited surface mining sites, where site-specific bond is insufficient for reclamation. There are two primary funding sources for the bond pool. A "Special Reclamation Fee" is assessed at the time a permit is approved for issuance, and a "Mine Reclamation Surcharge" is assessed whenever the pool falls below specific amount ($200,000 in 1996). OSM approved this ABS on May 13, 1998 based on the actuarial study that had been completed in 1994. The study concluded that Maryland's bonding system appeared to be solvent on a short-term basis. Short-term solvency was defined as "the ability to pay for all currently outstanding known reclamation plus one average cost reclamation project." The analysis also concluded, however, that the bonding system was not sufficient to cover a "catastrophic event," defined as: either one extremely costly forfeiture or several above average cost forfeitures.

In addition to the 1994 actuarial study, conducted by a private contractor, there were two other studies conducted by OSM between 1993 and 2002 that related to Maryland's ABS. These studies concluded that: Maryland's ABS was insufficient to reclaim all current forfeiture sites at the time. In both instances, re-permitting of the sites by another company avoided insolvency of the ABS during this period.

In April 2001 a review of forfeiture documents, maintained by MDE's Bureau of Mines (BOM), revealed that the BSR was insufficient to reclaim three existing forfeiture sites. A net unfunded liability of more than $500,000 was indicated, primarily because of the forfeiture of one permit, TD Mining SM-84-403. In response to inquiries by the OSM Oversight and Inspection Office (OIO), Maryland provided a reclamation schedule and status of their BSR via memo dated May 7, 2001. Maryland acknowledged in the memo that adjustments to the ABS could improve the system. In January 2002, Maryland provided further updates to the status of forfeiture sites and the BSR.

In 2004 a review was conducted as a follow-up to the study conducted during the 2002 evaluation year. By 2004 Maryland had made significant progress toward addressing the issues identified in the 2002 study, namely:

- The 2002 ABS deficit of $524,760 had been reduced to $143,098
- Maryland was on schedule to eliminate the ABS deficit by August, 2004
- Un-reclaimed forfeiture sites had been reduced by 50%, from four to two

At the end of 2004, however two significant issues remained:

- Maryland's ABS did not address catastrophic forfeitures, an issue identified in the original actuarial study in 1994.

- The time to begin reclamation of forfeiture sites remained protracted, diluting the buying power of forfeiture dollars through inflation.

As mentioned above, the 2002 analysis revealed that Maryland's ABS system carried an estimated $524,760 deficit for reclaiming existing bond forfeiture sites in the state.[1] This deficit was caused by four un-reclaimed forfeitures. These forfeitures included:

- Oliver 233 revoked 1/1988
- Jones 405 revoked 5/1993
- T.D. Mining 403 revoked 5/1998
- Kirby 373 revoked 3/2001

The deficit was based on a total estimated liability cost of $1,251,000 for reclamation and total assets of $726,240. ($1,251,000 - $726,240 = $524,760)

The 2002 study recommended that Maryland review the flat bond rate and income to the BSR to assure sufficient bond was available to cover costs for all current and anticipated forfeitures. The study also noted that there were increasing delays involved in the reclamation of forfeiture sites in Maryland, and recommended that Maryland should consider measures to expedite the reclamation of all forfeiture sites. The third recommendation was that Maryland should initiate a plan, within the overall bonding program, to address catastrophic events such as multiple bond forfeitures at one time.

Notable changes occurred in the financial status of the ABS and outstanding bond forfeitures between 2002 and 2004. The following narrative provides a description of the status of forfeiture projects at the time of the 2002 report versus 2004.

1. The Oliver 233 permit, the oldest of the four forfeitures, consisting of 20 acres, was reclaimed at a cost of $190,250, of which $47,750 was from the bond pool. Reclamation was done in conjunction with active permit SM-96-432.

2. Jones 405 – The final phase (Phase III) of this project was completed at a cost of $3,900, all of which was from the bond pool.

3. The T.D. Mining 403 permit was the largest and most expensive of the existing bond forfeitures. The estimated cost for reclaiming the site was $910,000. A portion of this site was re-permitted. Re-permitted mining and reclamation operations were to include 10 acres of the forfeiture area. The remaining 52 forfeited acres would be reclaimed under a sole-source contract with United Energy Coal Co., the new permittee, in accordance with a letter to the property owner's representative dated August 29, 2003. The 10 re-permitted forfeiture acres were expected to reduce the total cost of the project by $93,814.

4. The Kirby Energy permit 373 had a bond forfeited in the amount of $76,087, of which $70,200 was uncollected at the time of the 2002 OSM report due to the insolvency of the Surety Company. MDE successfully secured the entire bond amount. Total estimated cost of reclamation at the Kirby site was $144,000, Construction was planned for 2005. The site was shown to prospective operators for the purpose of re-mining the remaining coal reserves in conjunction with the forfeiture reclamation.

As part of the 2004 update, MDE Bureau of Mines Permitting, Administrative and AML personnel were interviewed. Budget projections and cost estimates were reviewed for the purpose of determining the solvency of the bond pool. The following figures were developed as part of the 2004 discussions:

[1] Maryland Alternative Bonding System Analysis, EY2002

2004 Estimated Costs: Existing Forfeitures

T.D. Mining 403	$816,186
Kirby Energy	$144,000
Total	$960,186

2004 Estimated Deficit: $817,088 (BSR account balance) - $960,186 (reclamation cost) = -$143,098 (deficit)

Based on Income projections of $16,876 per month[2], the Maryland ABS fund was to be solvent in approximately 8.5 months[3] (from 1/1/04). At the time, this projection supported the estimate in the 2002 report for solvency by August, 2004[4], indicating that replenishment of the fund was on schedule.

The improved financial status of Maryland's bonding system from 2002 - 2004 was based, primarily, on the following:

- Receipt of bond money from the Kirby Energy forfeiture.
- Increased balances in the $75.00/acre account from $69,020 in 2001 to $119,495.
- Increased BSR Funds from $120,672 to $261,507.93.
- Estimated savings in the overall cost of reclaiming the TD Mining permit.
- Completion of expenditures for the Oliver 233 and Jones 405 permits.

Actuarial studies conducted in 1994 and OSM studies on bonding in 1991 and 2001 have, repeatedly, pointed out the need for Maryland to develop and implement a plan to handle catastrophic events, such as one large forfeiture, or a series of forfeitures during the same time period. Continued low bonding rates, limits on the BSR, reduced production from deep mines, and reduced "new" acreage being permitted will result in having fewer funds available for catastrophic forfeiture events. Without increased bond pool money, Maryland's ability to handle catastrophic forfeiture events would be severely tested.

Regression analysis from the 2002 report also showed that the average expected time to begin reclamation was increasing by approximately 2 months per year. Forfeitures made in 1998 such as TD Mining were projected to take fifty months to begin reclamation, and for forfeitures made in 2001, such as Kirby, the projected time was fifty-six months.[5] Reclamation of the Kirby Site was just completed in May of this year. Because the Maryland Bond pool does not bear interest, inflationary factors associated with the time from forfeiture to beginning reclamation have an adverse affect on the pool. Any measures Maryland can introduce to lessen the time from forfeiture to beginning reclamation of a forfeited site will help the pool to remain solvent.

[2] Based on latest 6 months receipts (July – December '03) to the $75/acre Reclamation Fee account ($18,825) plus Bond Supplemental account ($82,432.35).

[3] $143,098 unfunded liability /$16,876 income/month = 8.5 months

[4] 30 months from 2/1/02

[5] Estimates are plus or minus 20.8 months standard deviation

Kirby Energy Forfeiture Site – April 7, 2010

The 2002 study produced two key recommendations:

1. The cap on the $300,000 BSR, along with the non-interest bearing nature of the account, should be changed to allow for additional funds to be accumulated. This fund increase would help ensure that Maryland could handle catastrophic forfeiture events.
2. Mine forfeiture reclamation should be carried out by Maryland in a more expeditious manner. The increased costs associated with inflation should be carefully weighed against the time it takes to find an operator to mine the site.

In 2006 further review was conducted by OSM of MDE's applicable laws, regulations, and procedures relating to bond release to define requirements under the approved Maryland Program and assure requirements were as effective as corresponding federal law and regulations. Specific requirements contained in the Annotated Code of Maryland 15-513b, Code of Maryland Regulations (COMAR) 26.20.14, Surface Mining Control and Reclamation Act (SMCRA) Section 509, and associated laws, rules, and regulations were used for reference.

In 2006 a review was also conducted of selected MDE bond release actions that had occurred within the last three evaluation years to verify whether approved processes were being followed. MDE supplied a list of bond releases for the period December 1, 2003, to January 23, 2006, (the review date). This list included a total of 17 bond releases - phase I (5), II (6) and III (6). To maintain a manageable sample, three releases were chosen for review for each of the three release phases. These releases reflected a range of acreages from eight to one hundred eighteen acres. Time periods for reviewed release actions ranged from December 10, 2003, to June 16, 2005.

At the time of the study, bond was established by law under the Annotated Code of Maryland §15-507 to be a minimum of $500 per acre general bond, plus a ***minimum*** of $1500 per acre for the open-acre limit. The open-acre limit is defined as the number of acres that may be disturbed (i.e., vegetation, topsoil, or overburden removed or land occupied) and not backfilled, graded, re-soiled, seeded and mulched at any point in time. COMAR Chapter 26.20.14, and a policy memo dated May 28, 1996, further define open-acre bond requirements to consist of a minimum of $1500 per acre for support areas, $3,000 per acre for the first 40 acres of non-support areas, and $3,500 per acre for additional acres. In addition, general bond is established at a minimum of $600 per acre of affected land. Maryland also maintains the BSR to be used if, in the case of bond forfeiture, bond funds are insufficient to reclaim the land.

Release of the open-acre bond liability is triggered by approval of a Backfilling/Planting Report per §15-513(b) (1) of Maryland Law.[6] This process, as interpreted by MDE, does not actually release bond but rather frees the open-acre limit to be applied to another portion of the permit.[7] The actual release of open-acre bond (also referred to as phase I bond) does not normally occur until all phase I reclamation work (as defined in COMAR 26.20.14.08E. (1)) has been completed on the entire permit, per COMAR 26.20.14.08[8], and a bond release application has been submitted and approved.

Release of the general bond is triggered by the expiration of the period of liability following approval of the Backfilling/Planting Report. Per §15.513(b) (3) and COMAR 26.20.14.08D. (2), 50 percent of the general bond (also called phase II) may be released after two years have passed from approval of the report, inspection and approval by the Maryland Land Reclamation Committee, and approval of a bond release application. After five years have passed following the last year of augmented seeding, the remaining 50 percent of general bond (also called phase III) may be released upon submission and approval of a bond release application.

Per COMAR 26.20.14.05A and 26.20.14.08B, performance bond covers the entire permit area, including reclaimed portions, until all Reclamation Phase III is completed on the entire permit and the permittee has been released from further liability.

Public participation in the release of bond is governed under Maryland law §15-507(h) and Maryland Regulations under COMAR 26.20.14.09. At the time a permittee files a bond release application, the permittee must also notify adjacent landowners, local government bodies, and utilities of his intent to have bond released. In addition, the permittee must advertise his intent in a newspaper of general circulation in the county once a week for four consecutive weeks. Any person may submit written comments or objections, or request an informal conference to the proposed bond release within 30 days following the last advertisement. Following a decision by MDE regarding release of bond, the public may also appeal the decision through the adjudicatory process allowed under COMAR 26.20.14.11 as described under COMAR 26.20.34.

A 2006 review was conducted of nine bond release actions that occurred within the previous three evaluation years to verify whether approved processes were being followed. The breakdown of releases was:

Phase I – 3 actions (SM-99-433, SM-84-365, DM-89-108)
Phase II – 3 actions (SM-84-365, SM-87-411, SM-84-264)
Phase III – 3 actions (SM-84-326, SM-84-365, SM-84-264)

The checklist developed and used to document State actions for compliance with the public participation provisions of Maryland's approved bond release program at the time was categorized into three main sections:

- Section A - used to verify that the backfilling/planting report which triggers all bond release actions.
- Section B - used to verify that the application for bond release was properly completed, submitted during the proper season for evaluation, contained notification and advertising required to allow for public participation in the decision-making process, reported any request for informal conference, and includes the date that the required inspection was conducted.
- Section C - used to verify that a decision was made on the bond release application, and determine whether

[6] The Backfilling/Planting Report is an annual form submitted by the permittee that indicates areas which have been backfilled, graded, re-soiled, and planted.

[7] The wording of §15-513(b) (1) created some concerns regarding the opportunity for public participation.

[8] Unless a reduction of the open-acre limit is requested per COMAR 26.20.14.05. Such a reduction is not considered a release of bond per parallel federal requirements under 30CFR 800.15.

the decision was appealed.

This 2006 review confirmed that Maryland had an appropriate process in place to evaluate changes in bond amounts at individual operations as reclamation progresses in accordance with the approved reclamation plan.

As described in the ***Summary***, this most recent evaluation (2010) of Maryland's bonding system involved the evaluation of the following 5 permits:

- United SM-414
  - Re-Mining Operation
  - Reclaimed Forfeiture Site
  - Total Release of Bond 01/14/10

- Kirby Energy SM-84-373
  - Forfeiture Site
  - 57 Acres
  - Performance Bond Amount $70,000.00
  - Bond Releases 05/04/1998 – 20 acres Phase II & III, 10 acres 05/08/1991 Phase III, 26 acres 10/19/1998
  - Site is currently being reclaimed

- Beechwood Coal Company SM-08-359
  - Notice of Bond Forfeiture 03/13/2007 (Former Buffalo Coal Co. SM-04-359)
  - Re-Instated and Re-Issued to Beechwood Coal Co. 01/16/2008
  - Re-Mining Operation
  - 36 Total acres
  - Total Bond Amount $96,600.00
  - No Bond Release to date

- Ritchie Trucking SM-08-40
  - Active Operation
  - 180 Acres
  - Partial Re-Instatement of former United Energy Forfeiture

- TriStar SM-429
  - Permit Issued 03/19/1997
  - 133 acres
  - Open Acre Limit 33 acres
  - Land use change from pasture to cropland 09/22/2008
  - Total bond release 09/23/2009

Considering the active sites above, with regard to ***whether the state is properly evaluating bond adequacy as part of the permit revision application review process:*** Maryland's ABS operates on the basis of fixed rates and therefore the evaluation of bond adequacy is defined by these limits. In each case, documents maintained in MDE files indicated that the required bond amounts for affected acreages were in place on the active sites. Regularly scheduled inspections were being completed by MDE.

With regard to the forfeited sites, in two cases re-instatement of the permit, in conjunction with re-mining and reclamation by another operator, has resulted in successful reclamation or continued mining, with minimum liability exposure to the bond system. In one forfeiture case (Kirby) reclamation is on-going at this time.

Similar to information presented in OSM's 2004 study, the table below summarizes funds that have been available to Maryland to complete reclamation on forfeited sites over the past 8 years (*The 2010 information is provided as of March 31, 2010). These fund totals have averaged $1,005,902.76 over the period. The ratio of funds directly from bond forfeiture, as compared to the total from the Reclamation Fee and the Bond Supplemental Reserve, averages 1.68 over the period.

Biennial Summary of Maryland Bond Pool Funds

Account	Balance				
	2002	2004	2006	2008	2010*
Reclamation Fee	$ 69,020.18	$ 119,495.18	$ 195,265.18	$ 243,565.19	$ 102,486.11
Bond Forfeiture	$ 536,548.52	$ 436,086.34	$ 238,864.73	$ 995,214.98	$ 719,552.12
Bond Supplemental	$ 120,672.60	$ 261,507.93	$ 280,494.20	$ 543,046.88	$ 167,693.67
Total	$ 726,241.30	$ 817,089.45	$ 714,624.11	$ 1,781,827.05	$ 989,731.90

The above table shows that the Maryland pool currently has nearly $989,800 for reclamation of forfeited sites, of which approximately 70 percent is from bond forfeitures.

How does this compare to current obligations of the pool? In response to a request by OSM to provide details of current reclamation liability facing the State, Maryland provided the table below and narrative descriptions of current forfeiture sites. The narratives are included with the State's other responses at the end of this report. This summary also includes the Maryland's estimated on funding demands that this reclamation would place on the existing bond pool.

MDE Estimate of Current Forfeiture Reclamation Costs
(OSM Calculations Attached)

Permit #	Revocation Date	Bond Amount	Disturbed acreage	Estimated Construction Cost	Resulting Cost/Acre	Resulting Average Cost/Acre
SC 110	7/26/2006	$86,400	13.7	$32,000	$2,335.77	$2,587.43
SM 326	7/26/2006	$115,200	20.5	$25,000	$1,219.51	
DM 110	7/9/2006	$225,754	0 (AMD)	$600/month		
SM 367	7/26/2006	$190,800	10	$42,070	$4,207.00	
			Total (less DM110)	$99,070		

The table below summarizes actual reclamation costs at sites completed by Maryland's AML Program, and discussed previously in this report. The average cost/acre using these actual costs is 3.65 times the average cost if using MDE's most recent estimates provide in the previous table.

Historic Reclamation Construction Costs

Site	Acres	Cost	Cost/Acre
Oliver	20	19,0250	9,512.5
TD Mining	52	81,6186	15,695.9
Kirby	24	501,650	20,902.1
		Average	15,370.2

Historically, Maryland has been able to achieve reclamation cost savings on some forfeiture sites by successfully negotiating re-mining agreements, re-instating permits or negotiating considerations with adjacent or nearby active operators for certain work. The actual reclamation construction costs noted in the table above are notable exceptions to this effect. As previously mentioned, reclamation of the Kirby site was completed this year. Final reclamation construction cost for Kirby has been calculated at $501,650.00. This actual cost alone is greater than 3 times the original estimate of $144,000.00. **This difference in actual construction costs and estimates provided by the State indicate that MDE may be significantly underestimating projected reclamation costs.** Maryland's estimated average per acre is $2,587 the average of recent actual costs is $15,370. This differential calls into question Maryland's estimate and points out the risks of planning based on cost sharing that isn't contractually guaranteed.

30 CRF 800.14(b) requires that the bond amount be sufficient to assure that the Regulatory Authority can complete the reclamation plan at any given time. Considering this requirement and the observations above regarding actual v. estimated reclamation construction costs:

- The total funds currently available in Maryland's bond pool ($ 989,731.90), when divided by average costs/acre from forfeitures that have been completed by Maryland, the capacity exists for the reclamation of roughly 64 forfeited acres.

- Using only the Kirby forfeiture as the basis for estimating cost/acre, a reclamation capacity of approximately 47 acres exists for the entirety of Maryland's bond pool.

- A third estimate based on the average estimated construction costs ($ 2587/acre) presented by Maryland for the existing forfeiture acreages (table above), yields a reclamation capacity of roughly 382 acres, considering the current funds available in the total bond pool.

Considering the most conservative of these projections, it would appear that Maryland's bond pool currently has sufficient funds available to complete the reclamation of the current acreage attributable to forfeitures. In short, Maryland's ABS is solvent. This does not, however, consider the previously noted risks, such as catastrophic or multiple forfeitures, nor does it clearly account for inflation or reduced buying power which has been observed from protracted reclamation timeframes at State administered forfeitures. These risks are significant, have been the repeated topic of discussions and considerations by MDE and OSM. Yet these risks remain.

Findings

1. Is there a clear understanding by the regulatory authority and OSM as to the methodology that the state is using to calculate required bond amounts?

   Yes, there is a clear understanding of the methodology, however, concerns persist over the adequacy of Maryland's current bonding system to address either a catastrophic failure or multiple, concurrent, failures of medium-to-large mine operating or surety companies.

   As discussed, several detailed studies of Maryland's Bonding program have been completed in the past 10 years by OSM, and Maryland's bonding program has been a topic of regular discussion between OSM and MDE. Maryland has made several changes to its bonding system over time to more

adequately secure the liability of forfeited and un-reclaimed surface mines. The current bonding system in Maryland currently involves:

- $1000/acre of permitted area
- $3000/acre (in addition to the $1000) for the disturbed area within a permit which Maryland identifies as "the open acre limit."
- The "Bond Supplement Reserve" is a State fund generated by the coal industry at a rate of $0.10 per ton of surface mined coal produced. The fund is capped at $750,000 by statute. If this amount is exceeded the amount paid into the fund is reduced to $0.04 per ton. Coal produced from underground mining does not pay into the Reserve.
- $75/acre special reclamation fee collected at the time of permit issuance

The State is currently calculating bonds in accordance with its OSM-approved program. It should be emphasized again, however, this and previous evaluations of Maryland's bonding system indicate that a significant risk exists for the bond pool to be swamped by either a catastrophic failure or by multiple failures of medium-to-large companies.

As noted in MDE's narrative response to the questions presented in preparation of this report, Maryland recognizes this risk and is currently considering changes to the system, including increased bonding rates.

2. Are there any outstanding required program amendments or 30 CFR Part 732 notifications related to bonding?

   No.

3. Has the Field Office or State received any citizen complaints related to bond adequacy in the past 3 years? If so, what was the ultimate outcome of those complaints?

   No.

4. Has the State revised its bond calculation methodology since the last comprehensive OSM review?

   No, however as noted in the response narrative provided by the State, MDE is currently in the process of revising Maryland's bond calculation methodology.

5. Has the bond calculation considered all features and structures in the approved plan, including whether roads and impoundments will be permanent?

   Maryland's bonding system has fixed rates which are a function of the affected acreage described above. Permanent structures are not directly considered.

6. Does the calculation include the costs of mobilization, demobilization, engineering redesign, and contractor profit and overhead?

No (as above).

7. Are the re-vegetation costs in the bond calculation consistent with the approved re-vegetation plan?

   No (as above).

8. What type of financial assurance is provided for any post mining pollutional discharges, and how is the amount of that assurance calculated?

   In a October 18, 1993 letter to OSM relating to bond pool actuarial study findings, Maryland stated that it would adjust individual bond amounts on active operations where pollutional discharge developed and that other bond pool funds would not be used to manage a discharge. This continues to be the State's policy. It should be noted that, at the time, Maryland also stated that they had no direct experience in calculating these amounts. The calculations tools currently available to Maryland are OSM's AMDTreat and other treatment cost methodologies available to the coal operation.

9. How does the bond amount compare with that calculated using the OSM Bonding Handbook?

   Due to the fixed rates used in Maryland, direct comparisons of Maryland's reclamation costs, and subsequent ABS liabilities, do not correlate to reclamation cost calculations presented in the OSM Bonding Handbook.

10. Is the reclamation of bond forfeiture sites being done in conformance with the approved reclamation plan for the site? Are differences due to the inadequacy of the bond or available resources from the alternative bonding system?

    Reclamation of forfeiture sites, managed by MDE, is being completed in accordance with approved reclamation plans insofar as appropriate reclamation techniques are being applied. As noted previously, however, in some instances this work has taken an inordinate amount of time to complete. In this respect, State managed forfeitures are not achieving contemporaneous reclamation as outlined in Maryland regulations at COMAR 26.20.28.01 and the Federal standard at §816.100

Conclusions

- Maryland is calculating bond amounts in accordance with its approved Program.

- Bond amounts in Maryland are fixed rates based on acreage, either permitted or disturbed. Additional funds for reclamation of forfeiture sites by the State are available from fees paid by operators based on permitted acres (Reclamation Fee) and coal produced (Supplemental Reserve).

- This assessment, as well as several past assessments, indicates that Maryland's bonding system and available funds are at risk from the failure of several small to medium sized mining operations, or one large operation.

- Maryland acknowledges the aforementioned risk and has made changes, since the inception of its Approved Program, to increase bond amounts. Still this study shows the risk level to still be high.

- Maryland has recently proposed additional changes to its bonding system.

- State managed reclamation of forfeiture sites is not occurring in a timely manner, thereby increasing the risk to the bonding system and reducing the State's buying power due to inflation.

- Maryland has successfully reduced the State's reclamation liability in the past by re-instating forfeited permits to new operators or negotiating other inexpensive or no-cost agreements for reclamation work, however, actual completed reclamation costs indicate that the State may be significantly underestimating costs on current forfeitures.

- Relying on the State's past ability to limit exposure of the bond pool, as noted above, is not consistent with the intent of 30 CFR 800.14(b).

- Using conservative cost estimates, based on reclamation work completed by the State, Maryland's combined bond pool currently has the capacity to reclaim approximately 47 forfeited acres. This is enough funds to reclaim the 44 currently identified forfeited acres but only leaves the pool with the capability to reclaim an additional 3 acres.

- Significant increases in reclamation costs, due to inflation over the extended time periods that have historical been required for the State to complete forfeiture reclamation projects, could substantially affect the solvency of Maryland's bond pool.

- There are obvious differences between estimated reclamation costs developed by MDE and the actual costs incurred to successfully complete reclamation of forfeited sites. These differences are significant enough to call into question the methodology used by MDE to project actual bonding requirements, bond pool solvency, and real reclamation liability faced by the State.

Recommendations

It is imperative that in Evaluation Year 2011 OSM, as part of its regular program oversight responsibilities, complete a comprehensive, independent, assessment of actual forfeiture liability in Maryland and the ABS funds available. This assessment should include actual field verification of acreages, audits of bond pool funds, and detailed analysis of reclamation costs as well as develop a sustainable solution to manage water pollution discharges from mine sites.

Maryland should complete reclamation of forfeitures much more quickly and reliance on the State's past ability to negotiate alternative methods for reclamation, such as re-permitting, should be considered in the context of 30 CFR 800.14(b).

Maryland should have an independent actuarial study performed to ensure the health of the bond pool, validate the current bond fees and help guide changes that Maryland has proposed to its bonding system.

MDE Comments and Responses to OSM Questions

The following was provided by MDE, in response to the questions presented in this report:

(E-mail J. Carey April 14, 2010)

This response will be addressed in narrative form attempting to address the questions listed in the FINDINGS section of this review.

Maryland has undergone changes in its bonding requirements several times during its primacy years. Typically, Maryland has used a flat rate per disturbed acre bonding approach. The current rate used is $1000 per acre of permitted area and $3000 per acre (in addition to the $1000) for disturbed area within a permit which Maryland identifies as "the open acre limit." The terms Open acre and Open acre limit are referenced in COMAR 26.20.01.02.(58) and (59). This results in a minimum bond of $4000 per acre of disturbed permitted land.

Maryland also uses a "Bond Supplement Reserve" as defined in §15-517 Annotated Code of Maryland which is a State fund generated by the coal industry at a rate of $0.10 per ton of surface mined coal produced. The Bond Supplement Reserve does not apply to the surface affects of deep mines which are bonded at the amount of an anticipated full cost of reclamation. For that reason, deep mined coal produced does not pay into the Reserve. The Reserve is capped at $750,000 by statute at which time the amount paid into the fund is reduced to $0.04 per ton.

To date, Maryland has had sufficient funds to reclaim all permit revocations and bond forfeitures using the bond and the Bond Supplement Reserve funds.

However, Maryland realizes that the increasing costs of reclamation could put the State in jeopardy of not having sufficient funds to reclaim in a timely matter. For that reason Maryland is in the process of developing a phased in approach to increase bond amounts on each surface mine to alleviate that potential. The documents being prepared to specifically describe the process are nearly completed and will be reviewed by MDE management for comments before full implementation begins. Maryland statute allows for an increase of bonds without the need for statutory or regulatory changes.

The process, in general, for increasing the bond amounts on surface mines is as follows:

Bond amounts are currently being reviewed on a company-wide basis. Each company will be required to increase their total bond required amount by 15% each year or reduce their open acre limit by the same percentage (thus reducing reclamation liability) until the bond reaches a total of $6000 per disturbed acre. Thus, a new flat rate bond amount will be established. This process should be completed within three years. Once the new flat rate is achieved, each permit will be evaluated to determine what the full cost of reclamation would be and the increase of 15% will be continued until full cost bonding is established on all surface mining permits. This step of the process should be completed in an additional two to three years.

The basis to determine the full cost bond required will be the total volume of overburden material that would need to be moved to achieve complete reclamation including a sufficient amount of bond to achieve re-vegetation of the site. Unit rates for earth moving and re-vegetation will be established by

using the Abandoned Mine Lands Division's bids for abandoned mine reclamation projects, of a similar nature, from the previous three years. In the event sufficient funds are shy of the total amount needed for complete reclamation of a forfeited mine site, the Bond Supplement Reserve will be used to fund any outstanding balance necessary.

Once the new flat rate bond is achieved on each permit and the full cost bond evaluation begins, all features and structures on the site will be considered in the full cost bond amount required. This method of calculating the full cost bond should be equally as accurate, if not more accurate, than OSM's Bonding Handbook because unit rates for earth moving and re-vegetation and structure reclamation will be based on real figures documented by the Abandoned Mine Lands Division and not an estimate of equipment productivity.

All bond forfeiture sites will continue to be reclaimed to the same standard as Maryland's past forfeiture reclamation practices to achieve all requirements of the approved permit and regulatory program. Treatment of post mining pollutional discharges are currently funded by excess bond not needed for the reclamation of previously forfeited sites. However, Maryland is currently reviewing this matter and in the process of establishing a pollutional discharge bond that will be required during the mining operation and based on the need and cost to treat water. This consideration is in its early stages of development but should be finalized by the end of this calendar year.

The following narrative was provided by MDE in response To OSM's request for additional information regarding current forfeitures:

Permit SC-83-110

The Tipple site is built on "pre-law" gob that was graded to construct a level surface. The pre-law gob and coal fines that accumulated during the coal processing operation have resource value. Ritchie Trucking has proposed to haul the material to their coal washing plant in Lonaconing in order to reclaim the site. The Mining Program has determined that the best method of reclamation would be to remove the gob from the site, which would restore the historic flood plain to Georges Creek and prevent long-term water quality concerns. Ritchie Trucking has also committed to providing soil sufficient to cover the site to a minimum of 6 inches. This work would decrease the overall cost of reclamation to the cost shown in the Summary Table.

Permit SC-84-326

The site is entirely reclaimed except for the refuse disposal pit and drainage control. As part of the forfeiture reclamation, the Mining Program has approved Ritchie Trucking to place alkaline coal ash and coal refuse into the disposal pit. The ash and refuse will be placed in lifts to a designed grade, topsoiled and stabilized. This work reduces the overall construction cost by eliminating the need for earthwork, limiting the disturbance and re-vegetation costs. The costs shown in the Cost Summary Table are for removal of the drainage controls after the site is stabilized.

DM 110

A small AMD discharge has been attributed to DM 110. The untreated discharge was having a very minor impact on the receiving stream. To address that impact, limestone sand is placed in the headwaters on a monthly basis to minimize the hydrologic impact.

SM-84-367

As part of the forfeiture reclamation, the Mining Program approved the disposal of excess spoil from Mettiki Coal Company's Permit 428 onto 17 acres of un-reclaimed area on Permit 367. The excess spoil was placed into a partially backfilled pit to achieve a designed grade. The surface was prepared using the Forestry Reclamation Approach and will be re-vegetated by Mettiki Coal Company using materials purchased by the Mining Program. This reclaimed all the disturbed area on Permit 367 except for drainage controls, which reduced the overall cost of reclamation.

The letter below was provided to OSM by MDE and includes comments on drafts of the two OSM 2010 National Priority Studies (AOC & Bonding). Following the letter are OSM's responses to individual comments, contained in the letter, as they pertain to this report:

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Land Management Administration
Mining Program – Bureau of Mines
160 South Water Street
Frostburg, Maryland 21532
301-689-1440

Shari T. Wilson
Secretary

Robert M. Summers, Ph.D.
Deputy Secretary

May 24, 2010

Mr. George J. Rieger
Office of Surface Mining
Appalachian Regional Coordinating Center
Three Parkway Center
Pittsburgh, PA 15220

Dear Mr. Rieger,

Thank you for the opportunity to review and comment on the two studies conducted by your staff titled "Approximate Original Contour" and "Determination of Required Bond Amounts." As indicated during the quarterly meeting between OSM and Bureau personnel regarding these important topics, there would be a very short turn-around time to provide comments so hopefully these comments will be received in time to be included in the study reports.

The Bureau of Mines has no comments on the "Approximate Original Contour" study. The report appears to be accurate in its assessment that Maryland is compliant with achieving approximate original contour on its regulated sites and therefore concurs with the conclusions of the study.

The Bureau of Mines has comments on the "Determination of Required bond Amounts" study. On page 4, the last paragraph under "Methodology" states that "Maryland was provided with an opportunity to review and comment on the draft report." This statement was included in the copy of the report that Maryland reviewed for the first time. If this statement is contained in the draft report and Maryland's comments are included in the report, Maryland has no concerns with this language. If the report received by Maryland for comments is the final report, which this statement would seem to indicate, then the statement is invalid.

The remaining comments will focus on the "Conclusions" section of the study. The third bullet included in the Conclusion portion of the study states: *"This assessment, as well as several past assessments, indicates that Maryland's bonding system and available funds are at risk from the failure of several small to medium sized mining operations, or one large operation."* The Bureau concurs that its current method of bonding needs to be updated and improved and is working in that direction however,

while assessments and evaluations are important and valuable, Maryland has actually had fairly recent multiple permit revocations and bond forfeitures of 13 permitted operations of two companies in 2006 and 2007. Of the 13 sites all but three sites have been reclaimed, transferred or reinstated to other viable, compliant mining companies. Also, of the three sites that remain to be reclaimed, agreements have been made on each of the sites to reclaim significant portions of the sites at little or no cost and the bond available on each site is more than adequate to complete the reclamation.

In addition, approximately ten years ago, Maryland was faced with a potential situation of multiple permit revocations and forfeitures from a single company that was in the process of filing bankruptcy. Maryland worked with other companies to acquire the permits held by the bankrupt company and averted the revocation and forfeiture process of, again, 13 permitted facilities in various stages of mining and reclamation.

Two situations occurring within the past decade, each equaling 20% of Maryland's permitted facilities, should at least approach the designation of a "catastrophic event" and were resolved timely without delays in reclamation. The earliest situation resulted in no expenditure of the Bond Supplement Reserve and the later resulted in a significant monetary gain to the Reserve.

Based on Maryland's record, to indicate that Maryland's bonding system is at risk from the failure of several small to medium sized mining operations or one large operation is an overstatement and possibly an oversight of the methods used and available to mitigate and avoid excessive liability from bond forfeitures.

The sixth bullet in the Conclusion portion states: *"State managed reclamation of forfeiture sites is not occurring in a timely manner, thereby increasing the risk to the bonding system and reducing the State's buying power due to inflation."* The Bureau agrees with the latter portion of the statement that delays may increase the cost of reclamation of forfeited sites and continues to promote an expedited reclamation process. However, the two forfeited sites which are suspected to be the basis for the statement were delayed due to other interested companies who showed a credible interest in the continued mining of each site. Delays would not have occurred had there been no interest to take over the sites by others.

The second part of the seventh bullet states: *"...however, actual completed reclamation costs indicate that the State may be significantly underestimating costs on current forfeitures."* This statement is further expressed in the last or 11th bullet of the conclusion as well and will be addressed in this comment. The only basis for this statement is found on page 12 of the report that compares four sites where the bond was forfeited, three that have a reclamation cost estimated by the State, with four different sites that were reclaimed after bond forfeiture. The comparison of both groups of sites relies on a cost per acre calculation showing a significant difference in the cost per acre between the first and second groups of forfeited sites. Maryland cautions anyone who uses an average cost per acre calculation from one site to project the cost of reclamation on another, as an inaccurate method that will be significantly different from site to site. To compare one group of sites with an average cost per acre estimate to a completely different group of site's average costs per acre is indeed and an "apples to oranges" comparison. Had the writer compared the sites of the second group's costs to the same site's estimated costs, the comparison would have been valid but that method was not accomplished. Further, the paragraph on page 12 directly after the Historic Reclamation Construction Costs Chart compares an old visual cost estimate with and

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In addition, approximately ten years ago, Maryland was faced with a potential situation of multiple permit revocations and forfeitures from a single company that was in the process of filing bankruptcy. Maryland worked with other companies to acquire the permits held by the bankrupt company and averted the revocation and forfeiture process of, again, 13 permitted facilities in various stages of mining and reclamation.

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BOM Comment:

The Bureau of Mines has comments on the "Determination of Required bond Amounts" study. On page 4, the last paragraph under "Methodology" states that "Maryland was provided with an opportunity to review and comment on the draft report." This statement was included in the copy of the report that Maryland reviewed for the first time. If this statement is contained in the draft report and Maryland's comments are included in the report, Maryland has no concerns with this language. If the report received by Maryland for comments is the final report, which this statement would seem to indicate, then the statement is invalid.

OSM Response:

The report provided to the BOM for review was clearly noted as a draft. OSM has clearly and repeatedly communicated to the BOM, via formal and informal meetings and communications that BOM comments are encouraged, welcomed, and would be included in the final report. OSM hopes that Maryland will continue to provide its input and insight.

BOM Comment:

The remaining comments will focus on the "Conclusions" section of the study. The third bullet included in the Conclusion portion of the study states: *"This assessment, as well as several past assessments, indicates that Maryland's bonding system and available funds are at risk from the failure of several small to medium sized mining operations, or one large operation."* The Bureau concurs that its current method of bonding needs to be updated and improved and is working in that direction however, while assessments and evaluations are important and valuable, Maryland has actually had fairly recent multiple permit revocations and bond forfeitures of 13 permitted operations of two companies in 2006 and 2007. Of the 13 sites all but three sites have been reclaimed, transferred or reinstated to other viable, compliant mining companies. Also, of the three sites that remain to be reclaimed, agreements have been made on each of the sites to reclaim significant portions of the sites at little or no cost and the bond available on each site is more than adequate to complete the reclamation.

In addition, approximately ten years ago, Maryland was faced with a potential situation of multiple permit revocations and forfeitures from a single company that was in the process of filing bankruptcy. Maryland worked with other companies to acquire the permits held by the bankrupt company and averted the revocation and forfeiture process of, again, 13 permitted facilities in various stages of mining and reclamation.

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Based on Maryland's record, to indicate that Maryland's bonding system is at risk from the failure of several small to medium sized mining operations or one large operation is an overstatement and possibly an oversight of the methods used and available to mitigate and avoid excessive liability from bond forfeitures.

OSM Response:

The Code of Federal Regulations describes the requirements for alternative bonding systems at §800.11 as follows:

> *(e) OSM may approve, as part of a State or Federal program, an alternative bonding system, if it will achieve the following objectives and purposes of the bonding program:*
> *(1) The alternative must assure that the regulatory authority will have available sufficient money to complete the reclamation plan for any areas which may be in default at any time; and*
> *(2) The alternative must provide a substantial economic incentive for the permittee to comply with all reclamation incentives.*

These requirements place the obligations of maintaining sufficient money and completing reclamation of

forfeited sites on the regulatory authority. Alternative assurances such as re-permitting of forfeited sites or no-cost reclamation agreements are not considered in the Federal Regulations and were, therefore, beyond the scope of this study. While OSM acknowledges that BOM has avoided or negotiated past catastrophic events by relying on these types of methods, it is exactly this need for such reliance which indicates that Maryland's bonding system at risk within the context of the need to maintain sufficient monetary resources for reclamation as prescribed by the regulatory requirements for an alternative bonding system.

BOM Comment:

The sixth bullet in the Conclusion portion states: *"State managed reclamation of forfeiture sites is not occurring in a timely manner, thereby increasing the risk to the bonding system and reducing the State's buying power due to inflation."* The Bureau agrees with the latter portion of the statement that delays may increase the cost of reclamation of forfeited sites and continues to promote an expedited reclamation process. However, the two forfeited sites which are suspected to be the basis for the statement were delayed due to other interested companies who showed a credible interest in the continued mining of each site. Delays would not have occurred had there been no interest to take over the sites by others.

OSM Response:

As above, Maryland's reliance on alternative means of completing reclamation of forfeiture sites is not consistent with the requirements of 30 CFR 800.11(e). While OSM acknowledges that re-permitting of a forfeited site may not necessarily conflict with the implementation of a reclamation plan, it should in no way delay reclamation.

BOM Comment:

The second part of the seventh bullet states: *"...however, actual completed reclamation costs indicate that the State may be significantly underestimating costs on current forfeitures."* This statement is further expressed in the last or 11th bullet of the conclusion as well and will be addressed in this comment. The only basis for this statement is found on page 12 of the report that compares four sites where the bond was forfeited, three that have a reclamation cost estimated by the State, with four different sites that were reclaimed after bond forfeiture. The comparison of both groups of sites relies on a cost per acre calculation showing a significant difference in the cost per acre between the first and second groups of forfeited sites. Maryland cautions anyone who uses an average cost per acre calculation from one site to project the cost of reclamation on another, as an inaccurate method that will be significantly different from site to site. To compare one group of sites with an average cost per acre estimate to a completely different group of site's average costs per acre is indeed and an "apples to oranges" comparison. Had the writer compared the sites of the second group's costs to the same site's estimated costs, the comparison would have been valid but that method was not accomplished. Further, the paragraph on page 12 directly after the Historic Reclamation Construction Costs Chart compares an old visual cost estimate with and actual reclamation cost, which is a poor comparison and not representative of anything conclusive. The bullet at the end of page 12 also is inaccurate in that the writer of the report takes the balance of the Bond Supplemental Reserve and divides that number by the writer's calculated average cost per acre to determine the number of acres that could be reclaimed from the Reserve balance without any consideration of the amount of the required performance bond that would also be available on a forfeiture. The same comment would also apply to the ninth bullet which seems to reflect numbers that contradict the information provided on page 12.

OSM Response:

While OSM acknowledges that the reclamation cost and estimate comparisons presented in the report may be imprecise, OSM does not believe they are inaccurate. These comparisons are provided as general indicators of potential risks to Maryland's bonding system that have been a long-standing topic of concern to both BOM and OSM. It was clearly communicated at the inception of this study, and within this report, that the report's scope was limited and the evaluation would be completed within strict time constraints. Nevertheless, OSM finds sufficient basis for concern, considering this limited information, and plans a more thorough review of Maryland's bonding in EY2011.

BOM Comment:

A general comment pertaining to several of the conclusion bullets is the implication that Maryland is not in compliance with 30 CFR 800.11(e). This statement is not warranted. While Maryland has on occasion delayed the reclamation of a forfeited site because of other viable interests from credible operators is true, the State is also aware that such delays are not always in the State's best interest and has agreed upon an internal process to insure that inflation costs due to delays is not an issue. The assumption that any delays in reclamation will increase the cost of reclamation due to inflation is not necessarily accurate. If a modest delay results in avoiding a lengthy engineering and procurement process to secure a contractor, reclamation may be accomplished at a quicker pace using alternative options than if the State takes on the responsibility.

OSM Response:
OSM acknowledges this general comment.