

Program Review of Conventional Bonding September 30, 2003

Objective:

Conduct a program review of the recently implemented Conventional Bonding System to determine if the new bonding guidelines were successfully implemented.

Review Guidelines:

The review teams were composed of the Compliance Managers and Permit Chiefs from the District Mining Offices. Inspectors and Inspector Supervisors were tasked with helping the field review teams composed of 2 Compliance Managers in finding the sites and helping gather field data for the technical review by the Tech Chiefs. The majority of the sites were selected at random by the Director of the Bureau of Mining and Reclamation and several sites were selected by management staff at each District Office. In all, 44 sites were selected for review. A field review was conducted of all sites to determine the affected area that had not been planted. Measurements were calculated through the use of a GPS unit by walking the perimeter of the disturbed area, use of laser range finders and measurements taken directly from the operations maps. Pit volumes were determined by use of laser range finders, inclinometers, pacing the perimeter of the pit and drill records. Prior to recording the measurements, the entire onsite team was consulted and agreed on the measurements for consistency. The measurements and drawings developed by the field review teams were submitted to the Tech Chief review team. The tech chiefs reviewed the field information, permit information, and applied the current bonding guidelines in determining the bond liability of each site. This calculation was then compared to the current bond amount for each site to determine whether each site was adequately bonded according to program guidelines.

Results:

Overall, reclamation liability on the active mine sites was less than the amount of bond that had been posted. Only three sites were found to have less bond than was necessary to complete reclamation. Two of the operators had already been notified of the deficiency and had submitted a permit revision with the appropriate additional bond amounts. In the third case, the operator was given appropriate directions to remedy the violation. Two operations had maximum areas disturbed, but not planted due to wet weather conditions that prohibited planting. This caused a reclamation cost exposure that exceeded the posted bond. However, both sites had been addressed and appropriate enforcement actions had been taken prior to the review being conducted.

Approximately 1/3 of the operations (14) had pits with dimensions that differed from the operations plan submitted in the application for permit. However, in each of these cases, the total number of cubic yards of spoil needed to reclaim the pits was less than the amount calculated using the original pit dimensions submitted in the application. Measuring the “foot print” of the coal in the pit provides an easy method to calculate pit volumes. However, this may not take into account the total volume of the area to be reclaimed since the volume calculation is based on basically a square and the true area is more often than not a trapezoidal configuration. The triangular section that is not calculated when squaring off the pit dimensions was deemed to be insignificant to calculation of the overall bond. However, in some operations, such as multiple seam operations and those that use only bulldozers as the major piece of mining equipment, this area can become significant.

Recommendations:

- A 10 % leeway needs to be considered in measuring areas with a GPS unit.
- A better “naming convention” needs to be developed for describing what is authorized for open pits, especially in multiple seam operations.
- The maximum high wall height should be used when calculating pit volumes unless averaging is the better method.
- The limits of the pit(s) should be part of the permit conditions unless there are specific reasons to use cubic yards instead. There is such a flexible interpretation that we need to either eliminate them, if they’re not important, or enforce them if they are. Most Chiefs believe specific pit dimensions should be used as a good early warning tool.
- Maximum acreage to be affected that is not planted is an important requirement. All offices should list it as a special permit condition. As soon as it is exceeded, a violation should be written.
- An accurate bonding map, which clearly delineates areas, is needed in all permits. Such a map is not available in all cases.
- Clarification is needed to determine when the volume of the ramp void area where the haul road comes out of the pit needs to be included in the bond calculations.

- The Department needs to update the Technical Guidance Document on conventional bonding:
 - A number of definitions need to be added to the document.
 - Pit dimensions need to be rounded to nearest foot.
 - Pit dimensions needs defined - (general guideline)
 - Change the temporary exceedance portion to read:

“In situations where pit dimensions need to exceed permit authorizations, then the permittee must calculate the cubic yards to demonstrate that the volume bonded is in compliance with the technical guidance document and permit conditions.”
- The Compliance Mangers are going to upgrade training on GPS use.
- Department needs to update the Inspection Report form.
- Each District to needs to have a joint Monitoring Staff - Permit Staff meeting to discuss conventional bonding.
- Program review form needs to be updated to clarify questions for next review.
- The same team should conduct a shortened program review of the conventional bonding program next year to verify that the review team’s recommendations had the desired effect.

Conclusions:

Overall, the evaluation results indicate that the Department did a good job in implementing the Conventional Bonding System in accordance with the proposed guidelines. Mining operations have been bonded within those guidelines and the field staff is insuring that operators maintain their operations within the operational limits of the permit so that they do not exceed the amount of bond posted for reclamation of the operation. As with any program, there is room for improvement, and the recommendations noted above should provide a starting point for discussions on improving areas of the Conventional Bonding Program.