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Before: Judge Schroeder

## INTRODUCTION

These cases are before me as a result of citations written following the failure of a processing plant impoundment at the Martin County Coal mine near Prestonsburg, Kentucky. Of the seven dockets, three were filed as contests of the citations and the four remaining were Petitions for the Assessment of Civil Penalties. The impoundment failure occurred on October 11, 2000. GEO/ENVIRONMENTAL ASSOCIATES is a consultant hired by Martin County Coal to inspect the impoundment and to prepare certifications of compliance with regulatory requirements.

## PROCEDURAL HISTORY

The seven dockets heard in a combined proceeding involve a total of eight citations. After completion of discovery, the hearing was scheduled in two parts. The majority of the fact witnesses were heard during the week of June 9, 2003, and the expert witnesses along with the remainder of the fact witnesses were heard during the week of August 4, 2003.<sup>1</sup> At the conclusion of the Secretary's case in chief (except for expert witnesses), I granted a motion to dismiss two of the eight citations for a failure of proof. A summary of my ruling on that motion is attached as Appendix A to this Decision. The Secretary's motion to reconsider my dismissal was denied. The reasons for my denial of that motion are summarized in Appendix A.

After the completion of testimony and presentation of documentary evidence, the parties were given time to submit written arguments. I have considered all of this material with some care and reached the conclusions stated below.

## FINDINGS OF FACT

### Jurisdictional Findings

The parties have stipulated to the facts essential to jurisdiction in this case. (Tr. 5) Martin County Coal Corporation (hereafter MCCC) is a large operator of both surface and underground mine in eastern Kentucky. It is sufficiently large that the Civil Penalties proposed by the Secretary would not hinder the ability of MCCC to stay in business. GEO/Environmental

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<sup>1</sup> Because of the split in hearing schedule the record of the June hearing will be cited as (Tr. June Session, pg nn) while the August hearing will be cited as (Tr. August Session, pg nn).

Associates (hereafter GEO) is an independent contractor providing engineering services to MCCC in connection with the operation of the mine refuse impoundment that is the genesis of this case. GEO is sufficiently large that the Civil Penalties proposed by the Secretary would not hinder the ability of GEO to stay in business.

### Big Branch Impoundment History

This case is about a fairly large impoundment created at the headwaters of Big Branch Creek by MCCC in the early 1980s. With the agreement and assistance of all counsel, I had the opportunity to visit the impoundment at the conclusion of the first day of testimony in the hearing.

Any impoundment is designed and built to contain liquids. What is striking about the MCCC impoundment is that it was not designed and built to contain water, but rather to contain a combination of water and wastes from the coal processing plant used by MCCC to get mined coal ready to ship to market. This storage is an alternative to dumping these wastes into nearby streams, an alternative obviously not acceptable in current society. The impoundment also serves as a supplemental source for water to be used by the processing plant. To that extent, the coal processing system is an example of both recycling and safe waste disposal. All of those positive sentiments, however, are dependent upon the impoundment working as it was designed to work. At least twice in its history the impoundment failed and large quantities of waste laden water were released into the surrounding community.

This kind of impoundment has another important difference from the typical water impoundment. In this impoundment the water enters the impoundment at the downstream end and is removed from the upstream end. This is the opposite of a flood control impoundment, for example, where silt laden water enters the impoundment at the upstream end and somewhat clarified water exits the dam at the downstream end. This difference has important consequences on the operation and maintenance of the impoundment. When water flows into the upstream end of most impoundments it begins to drop silt to form a delta. Most of the silt has been removed by the time the water has reached to containment structure. Water penetration and leakage are an issue of adequate design and maintenance of the dam. When water flows into the downstream end of a coal refuse impoundment it begins to drop first the big pieces and then the smaller pieces of material. The big pieces are used to heighten and expand the dam. The dam grows as the water level becomes higher. The water level becomes higher as silt fills the storage capacity of the impoundment. Since water is being removed from the upstream end of the pool, fine silt is eventually deposited on the upstream edges of the pool. To the extent the water level fluctuates, the deposited silt covers an area of the banks of the impoundment that is over the water level. The water near the upstream end of the pool is clearer and more capable of penetrating porous rock in the banks.

In 1994, the Big Branch Refuse Impoundment was operated in the general manner described above. It was known that the impoundment rested against banks which covered

underground mines that had been abandoned but which honey-combed the hills. A portion of the bank “subsided” into the abandoned mines and the pool began to flow through the mine and out the other side. This leak was contained by pushing rock and coal refuse into the “subsided” hole until the water flow stopped.

It was obvious that the impoundment needed some corrective measures to both permanently close the leak and to attempt to prevent leaks in the future. An engineering consultant prepared a plan that was submitted to MSHA for review and approval. Ogden Environmental & Energy Services, a geotechnical engineering consulting firm hired by MCCC, prepared a report with remedial measures. This became an Impoundment Sealing Plan that was approved by MSHA on October 20, 1994. (Gov. Exh. 1, page 11; Gov. Exh. 2, 2a, 2b, & 5; June Tr. 56). The plan called for the construction of a “seepage” barrier around the perimeter of the impoundment except for those portions which did not have mine works below. The barrier was constructed of material that needed to be moved to surface mine another coal seam in the impoundment area. The material was primarily blasted sandstone of random sizes and slate, both pushed into the impoundment and leveled by dozer. The plan contemplated that fine refuse material would be deposited by the water on the barrier to decrease permeability of the barrier. The plan also included the construction of underground seals to limit the flow of water into active areas of the mine.

In the plan, some portion of the work was labeled “short term” and the remainder was characterized as “long term.” Included in the discussion of “short term” measures is a requirement to monitor the flow of water from the South Mains Portal as to both color and quantity. The monitoring would be initially on a daily basis and later on a weekly basis as part of regular impoundment inspections. The parties profoundly disagree on whether weekly monitoring was intended to be a part of the Impoundment Sealing Plan as approved in 1994 or was simply prudent management by MCCC. The critical language appears only in the Plan as it was submitted the day after the impoundment failure, May 23, 1994. (Exh. MCC A1 at page MCC 12303). The text reads as follows:

- 4) Flow from the South Mains entry will be monitored daily until remedial work at the seepage point is completed. Monitoring will be done during regular impoundment inspections after that. Any unusual change in flow quantity or quality that would indicate possible impoundment leakage will be reported immediately to MSHA and the appropriate mine management. All necessary remedial measures will be implemented. (Emphasis added)

The critical phrase is “after that.” After what? Obviously, after the completion of remedial work at the seepage point. That completion of work is the end of the short term measures. After the short term measures came the long term measures. Hence, monitoring of the flows at the South Mains entry on a weekly basis is a part of the long term measures. Since the monitoring requirement has never been removed from the Impoundment Sealing Plan, the requirement is still present. The requirement for weekly monitoring of the flow from the South

Mains Portal is, and has been since 1994, a part of the Big Branch Impoundment Sealing Plan. Almost without interruption between Summer 1994 and Fall 2000, the flows from the South Mains Portal was monitored, recorded and reported as a part of the weekly impoundment inspection.

Construction of the seepage barrier was promptly completed and the underground seals were built shortly thereafter. The record indicates that MSHA, for reasons best described as ease of administration, made these two elements of the Impoundment Sealing Plan the responsibility of two different units of its District Office for purposes of routine inspection. The underground seals construction and operation was made the responsibility of underground inspectors while the seepage barrier and related structures were made the responsibility of the impoundment inspector. The parties disagree on the legal significance of this division of responsibility. It is clear that the operator and its consultant understood this action as a reduction in the scope of the Impoundment Sealing Plan. Annual certifications of compliance with the Impoundment Sealing Plan by MCCC and GEO did not include evaluations of the underground seals.

The flow of water from the South Main Portal, both in terms of quantity and quality, was measured on a weekly basis from 1965 to the day of the 2000 impoundment failure. GEO/Environmental, the engineering consultant to MCCC, had an inspector visit the impoundment each week and complete a data form that included water flow amount and color. On most occasions the inspector was Mr. Eddie Howard, whose training to perform this function is an issue in this case. Mr. Howard testified he followed a standard routine in his inspections, making observations at defined points and delivering the resulting form to MCCC officers. He also returned a copy of his report to GEO where he summarized the contents for his supervisor. The information in these reports was quickly available to MCCC and GEO engineers for analysis as to any change in the condition of the impoundment.

The construction of the underground seals was the subject of testimony by several witnesses.<sup>2</sup> The Secretary relied on the testimony of Mr. Betony (Tr. June Session pg. 408) while MCCC relied on the testimony of Mr. Hatfield (Tr. June Session pg 1249) and Mr. Branham (Tr. August Session pg. 516). The witnesses agreed on all significant points except the intended spacing of anchor bolts into the floor and top. They agreed the seals were constructed of cement block covered with gunite and laced with steel reinforcing bars. The seal wall was notched into the rock of the ribs. The wall was anchored to the floor and top with steel bolts driven a foot into the rock. The spacing of anchors was given as four- foot on centers in the floor and five- foot on centers in the top. The issue dividing the parties was where such an instruction required the anchors be placed. Mr. Betony testified that in his experience an instruction to place anchors at four- foot on centers required the first anchor to be two- feet from the rib. Mr. Branham testified that in his experience the instruction required the first anchor to be placed four feet from the rib.

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<sup>2</sup> There is no evidence the underground seals survived the October 11, 2000, impoundment failure or even made any difference in how the released waters flowed from the mine.

The purpose of an “on center” specification is to define the maximum unsupported length of load bearing member. This maximum unsupported length is calculated from the maximum expected load the member is intended to support. The specification of four- foot on center defines a maximum unsupported length of two feet. Under the MCCC approach to this specification, the sealing wall has a four foot span from rib to floor anchor. That would be consistent with the design specifications for the sealing wall only if the inset of the sealing wall into the rib creates another anchor point at the edge of the rib. I find nothing in the testimony or the written record that supports a conclusion that an anchor point is created by an inset of the sealing wall. Since the holding strength of the rib is difficult to calculate, and the point of most engineering calculations is to rely upon ascertainable values to determine structural sufficiency, I conclude the edge of the rib is not an appropriate anchor point. Therefore, the underground sealing wall was not constructed in accordance with the approved specifications.

Three other subjects need to be discussed in the context of events which occurred in the period between the approval of the Impoundment Sealing Plan and the second impoundment failure: (1) changes in water flows from the South Mains Portal; (2) rainfall data for the period; and (3) the training program for the impoundment inspector, Eddie Howard.

The Impoundment Sealing Plan requires the weekly monitoring of water flows from the South Mains Portal but does not specify how the monitoring should be conducted. The decision on the method of monitoring was apparently made by GEO/Environmental, the original author of the Plan. GEO supplied the person that conducted the monitoring and designed a form upon which the result was recorded. At least until the second impoundment failure, MSHA acquiesced in the monitoring and data recording methods.

The amount of water outflow from the South Mains was determined by examining a small erosion control pond constructed at the foot of the South Mains Portal. The pond collects water from the mine entrance as well as the small hollow in which the South Mains Portal is situated. The pond has a weir to allow water to exit after sediment has settled. The GEO inspector made a weekly visit to that weir and recorded the depth of water in the outflow stream using a ruler. He recorded the flow in inches even though all other water flows from the impoundment were measured and recorded in gallons per minute. During the course of the hearing I rejected an attempt by the Secretary to recalculate gallons per minute from the weir depth readings. I concluded the recalculation was irrelevant to the issue of compliance with a regulation that contemplates reporting of unusual water flows based on the available information. The South Mains Portal water flow data was not available in gallons per minute at the critical times. Mr. Howard also carefully measured the elevation of the surface of the impoundment.

The Secretary did present a graphic representation of the available information on water flows from the South Mains Portal during 1995 to 2000. This graph included the usual spikes and dips but showed-particularly given the limited scale of the data based on the units of measurement used-a portentous increase in flow roughly a year before the second impoundment failure. It is significant that there was no change in the water quality, i.e., no coal refuse fines

were being transported by the increased water flow. All the witnesses testified that a significant increase in the number of transported fines would have indicated a major failure was likely.

The parties disagreed at great length as to the significance of the changes in South Mains Portal water flows, particularly in light of changes in rainfall patterns. The choice of rain gauge, the probable lag time between fall and flow, and similar issues consumed a great deal of energy. It is my conclusion that while a prudent mining engineer reviewing the South Mains Portal water flow data should have considered the influence of rain data from the general vicinity, such a prudent engineer would not have given controlling importance to rainfall data regardless of source in deciding whether an impoundment failure was a sufficient risk to alter the method of operation of the impoundment to investigate that risk.

The source of much of the data in controversy in this case originated with Eddie Howard, the impoundment inspector employed by GEO/Environmental. Mr. Howard testified as to his activities. (Tr. August Session pg. 214 *et seq.*) Mr. Howard is not an engineer, he is a field technician. His function is to observe and collect data that he reports to others. He began visiting the Big Branch impoundment in 1996 to do inspections and continued on a weekly basis after that until 2001. Mr. Howard testified he was certified by MSHA as an impoundment inspector in 1991. (Tr. August Session pg 233). He received refresher training on impoundment inspection in subsequent years but the documentation as to when, by whom and for how long he received refresher training was very confused. Attempts to clarify the record by testimony did not make the precise amounts and sequence of refresher training very clear. It is clear, on the other hand, that he took some classes and received some on-the-job training in impoundment inspection from engineers working for his employer.

Mr. John Grabeel testified as an impoundment inspection trainer employed by GEO/Environmental. (Tr. August Session, pg. 644 *et seq.*) He stated he had provided training for Mr. Howard. He indicated the refresher training took the form of an eight hour class day supplemented with on-the-job field trips. Of the eight hours in class, four hours were devoted to impoundment inspection and four hours were devoted to surface mining and safety issues, including the proper operation of a nuclear density gauge. (Tr. August Session, pg 651).

#### Impoundment Failure in October 2000

The second failure of the Big Branch Coal Refuse Impoundment occurred in the dark of night with few people close enough to observe the events. A maintenance worker noticed the increased flow of water and went to alert others. As others came to the scene a swirl of escaping water was seen in the impoundment. The escaping waters were black with refuse fines. Equipment was rushed to the assumed site of the break through and soil was pushed into the hole. Within a few hours the hole was plugged, but in that time more than three hundred million gallons of silt laden water had rushed out of the impoundment and down adjacent streams toward the Ohio River. No lives were lost. Recovery from the failure was still in progress when I visited the impoundment more than two years later.

A team of investigators was assembled by MSHA and sent to the scene. The report of their investigation is included in the record. (G.E. 1).

### Theories of Impoundment Failure

It is important to note at the outset that the precise cause of the October 11, 2000, impoundment failure is not an issue in any of the citations before me. I am not required to determine the cause of the failure and I do not propose to make a determination of that question without necessity. The relevance of the testimony on various theories of the cause of the failure is to evaluate the risk posed by the impoundment in terms of potential failure. My responsibility is to evaluate Respondents' prudent mining decision making in the face of these risks.

### Piping

The MSHA investigators concluded that the cause of the impoundment failure was a process known as piping. Engineers have known for some time that piping occurs under certain circumstances. Piping is a process of erosion that occurs in water permeable materials. Permeability allows water to transit the permeable zone carrying materials from the zone. The route followed is the connected area of maximum permeability. The route over time becomes the pipe.

### Shear Failure

Mr. Barry Thacker, the President of Respondent GEO/Environmental, presented a theory under which the impoundment failure was the result of water pressure in the impoundment punching a hole in the natural cover over the abandoned mine works. The hole would cause a sudden cascade of free water into the mine. The place of rupture was the result of natural faults observed in the soil called "hill seams." The theory as presented by Mr. Thacker depends on acceptance of several premises: first, that piping would have occurred, if at all, at the relatively more permeable zone created at the site of the 1994 impoundment failure; second, that the increase in height of the impounded silty water would have caused an increase in flow from the South Mains Portal through the operation of a natural principle known as *Darcy's Law*; third, that the changes in water flows from the South Mains Portal are consistent with short term rain fall that in 1999 included repeated episodes of locally heavy storms. The 1994 impoundment failure is generally acknowledged to have been a small shear failure in an area where the cover over the abandoned mine was particularly thin or fragile. Shear failure is a well recognized risk in impoundment operations as pressures from depth of water increase. The risk of failure, and hence, the need for careful monitoring of conditions, obviously increases as the depth of water increases.

### Mine Seal Failure Under Pressure

Mr. Christopher Lewis (Tr. August Session, pg. 788 *et seq.*) testified as to another

possible sequence of events to explain the impoundment failure. His theory posits that the permeability of the seepage barrier is sufficient that water pressure in the impoundment is transmitted through the natural soil into the wet silt that completely fills the abandoned mine to the first set of mine seals. These seals are in place for ventilation control, not water control as are the seals that are the subject of one of the citations in this case. That means that a relatively small amount of water pressure will cause failure of the seals. When the seals fail, under this theory, the wet silt in the abandoned mine will flow out and leave the natural soil roof of the mine works unsupported. The water pressure in the impoundment will then cause the roof to collapse and water will then flow into the abandoned mine. (Tr. August Session, pg. 815). The theory articulated by Mr. Lewis is well supported in the engineering profession and should be assumed to be understood as a risk by an prudent mining engineer.

Dr. Donald Joseph Hagerty (Tr. August Session, pg 930 *et seq.*) testified as to an expert analysis of possible piping sequences and found that the most probable result was a sudden small breakthrough that would result in rapid dewatering of the impoundment without catastrophic failure of the impoundment integrity. This analysis was offered to rebut the testimony offered by the Secretary as to piping being the cause of the impoundment failure. But the testimony by Dr. Hagerty complements that of Mr. Lewis in the sense that it shows how impoundment water pressure could have been transmitted to the ventilation seals in a relatively sudden manner with the consequences described by Mr. Lewis.

#### CONCLUSIONS OF LAW

With this much disagreement among the parties as to the facts, it is indeed fortunate that as to the applicable law there is a great deal of agreement. It is appropriately agreed that the Commission does have jurisdiction over these contested citations. It is agreed that the Secretary has the initial burden of proof as to all elements of the claims for recovery. It is also agreed that the violations as alleged require the Secretary to show the violations were “significant and substantial” as well as showing that the violations were “unwarrantable.” These terms have been interpreted by the Commission numerous times over the years. That the parties cite different cases with different facts does not establish a disagreement over the applicable legal standard. The Commission has been very clear that the conclusion is fundamentally a question of fact in particular cases.

I have looked to the following cases to guide my application of the facts in this particular case. I read with some care the decision in *Secretary of Labor v. Virginia Crews Coal Company*, 14 FMSHRC 1691 (October 1992). I also looked carefully at *Secretary of Labor v. Cougar Coal Company*, 25 FMSHRC 513 (September 2003). Neither of these cases involves a coal refuse impoundment. Both of these cases note that the terms in question were used by the Congress in enacting the Mine Safety Act. The cases interpreting these terms were attempts to ascertain the presumed intent of Congress in regard to particular facts.

The cases seem to conclude that little improvement is possible in the four part test for

“significant and substantial” explained by the Commission in *Secretary of Labor v. Mathies Coal Co.*, 6 FMSHRC 1, 3-4 (January 1984) as follows:

In order to establish that a violation of a mandatory safety standard is significant and substantial [citation omitted] the Secretary of Labor must prove: (1) the underlying violation of a mandatory safety standard; (2) a discrete safety hazard—that is, a measure of danger to safety-contributed to by the violation; (3) a reasonable likelihood that the hazard contributed to will result in an injury; and (4) a reasonable likelihood that the injury in question will be of a reasonably serious nature.

The term “unwarrantable failure” has long been characterized by the Commission as involving conduct that can be described as “reckless disregard, ” “intentional misconduct,” “indifference, ”or a “serious lack of reasonable care.” It is also clear that these descriptors take on different significance when viewed in the light of the risk on injury inherent in the activity. There can be no doubt, for example, that greater care is expected of a person handling explosives that is expected of a person handling signal flares. In deciding this case, I was particularly mindful of the risks associated with gathering a large quantity of industrial fluid at a reasonably great height with limited controls.

It is also agreed that the following regulations are mandatory safety standards applicable to the MCCC operation on Big Creek.

30 C.F.R. 77.216(d)

(a) Plans for the design, construction, and maintenance of structures which impound water, sediment, or slurry shall be required if such an existing or proposed impounding structure can:

(1) Impound water, sediment, or slurry to an elevation of five feet or more above the upstream toe of the structure and can have a storage volume of 20 acre-feet or more; or

(2) Impound water, sediment, or slurry to an elevation of 20 feet or more above the upstream toe of the structure; or

(3) As determined by the District Manager, present a hazard to coal miners.

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(d) The design, construction, and maintenance of all water, sediment, or slurry

impoundments and impounding structures which meet the requirements of paragraph (a) of this section shall be implemented in accordance with the plan approved by the District Manager.

30 C.F.R. 77.216-4(a)(7)

(a) Except as provided in paragraph (b) of this section, every twelfth month following the date of the initial plan approval, the person owning, operating, or controlling a water, sediment, or slurry impoundment and impounding structure that has not been abandoned in accordance with an approved plan shall submit to the District Manager a report containing the following information:

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(7) A certification by a registered professional engineer that all construction, operation, and maintenance was in accordance with the approved plan.

30 C.F.R. 77.216-4(a)(2)

(a) Except as provided in paragraph (b) of this section, every twelfth month following the date of the initial plan approval, the person owning, operating, or controlling a water, sediment, or slurry impoundment and impounding structure that has not been abandoned in accordance with an approved plan shall submit to the District Manager a report containing the following information:

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(2) Location and type of installed instruments and the maximum and minimum recorded readings of each instrument for the reporting period.

30 C.F.R. 77.216-3(a)(4)

(a) All water, sediment, or slurry impoundments that meet the requirements of §77.216(a) shall be examined as follows:

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(2) All instruments shall be monitored at intervals not exceeding 7 days, or as otherwise approved by the District Manager

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(4) All inspections required by this paragraph (a) shall be performed by a qualified person designated by the person owning, operating, or controlling the impounding structure

### **Specific Citations**

Citation No 7144401

This citation alleges that MCCC violated 30 C.F.R. § 77.216(d) by failing to report changes in water flow quantity from the South Mains Portal during September 1999, as required by the Impoundment Sealing Plan approved by the District Manager. The Plan as approved became the regulation applicable to this facility. Everything required by the Plan became a mandatory safety standard. I concluded above that the requirement to report unusual flows to MSHA was a requirement of the Plan. No unusual flows were reported to MSHA. The issue is whether the Secretary has established that in September 1999, the South Mains Portal had unusual flows that should have been reported. Assuming the unusual flows were present, was the failure to report those flows unwarrantable negligence that was significant and substantial?

I begin with what I hope is the undisputed premise that the degree of care demanded of a reasonably prudent mining engineer in management of a mining facility varies with the degree of risk to life and property at the time action is required. Where the lives of hundreds of miners are at risk, a manager must examine the available options much more carefully than the manager would if only the condition of mining equipment might be affected. This premise is particularly important in evaluating over a period of years the actions taken at the Big Branch Refuse Impoundment. In 1991, when the pool level was below the level of the abandoned mine, very little care in management of the impoundment was required. The only risk at that point was a failure of the coarse refuse embankment, through structural failure or a rain event beyond the designed capacity of the embankment and spillway feature. The record does not indicate that these aspects of the impoundment ever posed a problem.

Between 1991 and 1994, the pool level rose over the abandoned mine level and the risk of failure of the walls of the pool increased. In May 1994, the pool experienced a leak from a structural failure that highlighted the increasing risk. The operator, its consultant, and MSHA responded to that increased risk by development of an Impoundment Sealing Plan. The purpose of the Plan was to contain the risk of failure of the pool structure as the pool level increased. The requirement for monitoring the flow of water from the South Mains Portal was included in the Plan for the purpose of alerting the responsible parties to the level of risk posed by the impoundment as time passed.

Following approval of the Impoundment Sealing Plan, mining operations caused the impoundment pool level to rise. The experts seem in agreement that even without flaws in the impoundment seal, the rise in the pool level could be expected to result in increased water flow

from the South Mains Portal. As long as the increases were within reasonable limits, the increases were not evidence of problems with the impoundment but rather were evidence that the impoundment was working as predicted. Some spikes and valleys should also be expected because of variations in rain fall, particularly since the measuring point for the South Mains Portal flow was after collection of runoff water in the settling pond. Weekly and even monthly changes in the flow amount, in the absence of water quality changes or catastrophic increases in quantity, were probably meaningless to the people who reviewed the information. But as the pool level rose the risk of failure rose.

In the context of this increasing risk of impoundment failure, I would expect a reasonably prudent mining engineer to pay increasing attention to warning which might have been derived from the South Mains Portal flow data properly appreciated. While weekly or monthly changes would be meaningless, longer term changes related to other obtainable data could have provided valuable signs. The record is clear that no effort was made by either MCCC or GEO to conduct any of these kinds of evaluation of the data. Of particular significance is the large increase in flow that occurred approximately a year prior to the October 2000, impoundment failure. While I am persuaded by the testimony that the Fall 1999, flow data (even when related to various sources of rain fall information) does not prove that the failure began then or even at any particular time. What could have been derived from a “prudent” look at the data would have been a warning that further study of the condition of the impoundment was warranted. At the very least, the report of the flow changes would have provided MSHA with the opportunity to clarify its intention with respect to the distribution of fine refuse on the upstream edges of the impoundment pool.

The data gathering and analysis requirements of the Impoundment Sealing Plan that form the foundation for this citation were not carefully drafted to articulate these concepts. The authors of the Plan were relying on the professional training and good sense of the people that would be managing the Impoundment as the years went on. I am persuaded that while the technical area of predicting impoundment failure is still in the development stage, much more could and should have been done here. I am also persuaded that the failure to take advantage of available opportunities to evaluate the South Mains Portal flow data contributed in some measure to the magnitude and timing of the impoundment failure. On the other hand, I am not persuaded that the failure to take advantage of these opportunities was an unwarrantable failure in the sense of wanton or reckless disregard for the risks to life and property. I would assess the negligence as moderate. The Civil Penalty proposed by the Secretary, \$55,000.00, seems to me to be excessive under the circumstances.

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Citation No. 7144403

This citation alleges that the underground mine seals included in the original Impoundment Sealing Plan were not constructed in accordance with the approved plans in violation of 30 C.F.R. §77.216(d). My interpretation of the approved plan for the seals as discussed above would require the first anchor bolt to be set in the floor two feet from the rib and

a similar spacing for the bolt in the roof. The testimony was clear that the actual construction did not meet those requirements. Therefore, the seals were not constructed in accordance with the approved plan. While the difference in placement of the anchor bolt might have significant consequences in some circumstances (generally in situations in which the load on the seals would be in a range such that the seals would fail with one spacing but hold with a closer spacing) there is no evidence in this record that indicates the bolt spacing on the seals contributed to the October 2000, impoundment failure in any way. The change in bolt spacing cannot be said to be anything more than very low negligence. The Civil Penalty appropriate to such a violation would be minimal at best.

Citation Nos. 7144404 and 7144408

These citations allege that the Annual Report and Certification on the Big Branch Impoundment for 1995, did not include reference to the underground seals constructed as part of the Impoundment Sealing Plan in violation of 30 C.F.R. §77.216-4(a)(7). The Annual Report did not include reference to the underground seals construction. MCCC contends the underground seals were not part of the Impoundment Sealing Plan by the time of the construction. GEO contends that not only were the underground seals not a part of the Impoundment Sealing Plan but also that GEO had no responsibility for Certification of the underground seals since it does not perform underground engineering.

That GEO does not work underground is certainly not a reason for excluding underground features of an impoundment plan from an Annual Certification if the features are a part of the plan. The requirement on the impoundment operator is to have a qualified person make the necessary certification, either with its own staff or by hiring someone. A certifying engineer would need to at least note the exclusion of a feature from a submitted certification so that a supplement to the certification by someone else would be appropriate.

There is no evidence in this record that the failure to include the underground seals in the Annual Certification contributed in any way to the October 2000, impoundment failure. The degree of negligence involve was very low at best and the Civil Penalty for the violation should be minimal.

Citation No. 7144410

This citation alleges that the Annual Reports prepared by GEO in 1996 to 1999, failed to include the maximum and minimum readings for the South Mains Portal outflow pipe considered as in instrument in violation of 30 C.F.R. §77.216-4(a)(2). The critical issue here is whether the South Mains Portal outflow pipe combined with a ruler constitutes an instrument for purposes of this regulation. The regulations, and their apparent application to the industry by MSHA, are somewhat confusing on this point. The regulation does not have a clear definition of an instrument. The testimony was clear that not all sources of information about an impoundment are considered instruments. The regulation provides that all instruments must be identified on a

plan view of the impoundment submitted with the Annual Certification. The South Mains Portal outflow pipe was not on the plan view submitted with the Big Branch Impoundment Annual Certifications, much less be identified as an instrument on the plan view. The readings of the flows from the South Mains Portal were taken every seven days as a requirement of the Impoundment Sealing Plan and the regulation requires that all instruments shall be monitored at intervals of not exceeding seven days. It does not logically follow, however, that since all instruments must be monitored every seven days, therefore all things that are monitored every seven days are instruments.

I am persuaded by the testimony, particular that of Dr. Thacker, that the word “instrument” has a unique technical meaning within the professional subgroup of impoundment engineers as a data source identified and designated in a particular document. That a data source is or is not identified and designated as an “instrument” is independent of the question of the importance of the data. As I indicated above, the flow readings from the South Mains Portal constituted important data. But it was not data from an “instrument” for the purposes of 30 C.F.R. §77.216-4(a)(2). This citation must be dismissed.

#### Citation No. 7144411

This citation alleges that the weekly examinations of the Big Branch Impoundment were performed by an unqualified inspector that had not received required annual refresher training in violation of 30 C.F.R. § 77.216-3(a)(4). There is no question in this case that the inspector, Eddie Howard, was a very experienced inspector who received both classroom and on-the-job refresher training in the period prior to the October 11, 2000, impoundment failure. It is further very clear that no evidence has been offered to connect Mr. Howard’s qualifications as an inspector to the occurrence of the impoundment failure. All parties have used his observations and measurements in their presentations without any question as to reliability or accuracy. The issue here is limited to whether Mr. Howard spent the required number of hours in training on the required subjects.

The burden is on the Secretary to establish the record elements of this alleged violation. While the record does cast doubt on the sufficiency of the documentation of Mr. Howard’s refresher training, I am unable to conclude that the Secretary has established that Mr. Howard did not receive a total of eight hours of appropriate impoundment inspection refresher training. This citation must be dismissed.

#### Civil Penalty Amounts

In light of the forgoing discussion, it is my judgement that an appropriate Civil Penalty for the violation in Citation No 7144401, is one-tenth of that proposed by the Secretary or \$5,500.00. The remainder of the citations not dismissed require a Civil Penalty of \$100.00, against each Respondent.

**ORDER**

Respondent Martin County Coal Company is directed to pay a Civil Penalty of \$5,600.00 within 40 days of the date of this Order. Respondent GEO/Environmental Associates is directed to pay a Civil Penalty of \$100.00 within 40 days of the date of this Order. Citation Nos. 7144410 and 7144411 are dismissed.

Irwin Schroeder  
Administrative Law Judge

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## Appendix A

### Summary of Dismissal of Citation

The Secretary alleged MCCC violated 30 C.F.R. §77.216 by failing to comply with a provision of the Impoundment Sealing Plan that requires the operator to “periodically redirect” the coal refuse discharge stream. The Secretary maintained the failure to perform this task resulted in an inadequate seepage barrier which resulted, in turn, in the impoundment failure on October 2000.

This argument requires, for it to be effective, that the phrase “periodically redirecting” had a meaning well understood by prudent mining engineers in 1994 that would require actions by the mine operator as now thought necessary by the Secretary. This is not a question of “notice” of the meaning asserted by the Secretary. Lack of notice would be an affirmative defense by the operator if the Secretary successfully completed a *prima facie* case. My conclusion was that the Secretary never completed a *prima facie* case because the Secretary never established that prudent mining engineers in 1994 would have understood “periodically redirecting” the fine coal slurry discharge to mean the kind of impoundment operation which the Secretary now contends was necessary to prevent impoundment failure in the manner it occurred here.

It is important that the Secretary’s theory of how the impoundment failure of October 11, 2000, occurred implies a deficiency in the impoundment seepage barrier. But there was no evidence that anyone was contemplating this particular failure mechanism at the time the impoundment sealing plan was approved. Even the Secretary’s impoundment design expert, Richard Almes, testified that the phrase “periodically redirect the slurry discharge” had no technical meaning in 1994 or in 2000. The slurry discharge methods that the Secretary alleges were required under the 1994 plan were far from standard practice in impoundment management. His testimony is consistent with that of the MSHA impoundment inspector. He testified he was familiar with the 1994 plan and had visited the impoundment 3 or 4 times a year between 1994 and 2000. It never occurred to him that the slurry discharge methods used by Martin County Coal Company were insufficient. This testimony represents interpretation of the 1994 plan through conduct rather than an attempt to estop the Secretary as a result of long delay in asserting an argument. The Secretary is not subject to estoppel in her pursuit of public safety. The Secretary failed to adequately establish a violation of those requirements and I have no choice but to dismiss the claim and vacate the Citation.