BEFORE THE RECLAMATION COMMISSION

TRI-STATE RECLAMATION, LLC, Appellant, -vs- DIVISION OF MINERAL RESOURCES MANAGEMENT, Appellee, and PEABODY COAL COMPANY, OXFORD MINING COMPANY, Intervenors.	: : : : : : : : : : : : : : : : :	Case Nos. RC-04-030 RC-08-007 RC-08-008 RC-08-009 Approval of ARP R-325-53, Chief's Order 7319, Informal Conference Results, Chief's April 9, 2008 Decision; Permit D-325 (Peabody Coal) **FINDINGS, CONCLUSIONS & ORDER OF THE RECLAMATION COMMISSION**

Appearances: Mark Stemm, Counsel for Appellant Tri-State Reclamation, LLC; Mark G. Bonaventura, Molly Corey, Assistant Attorneys General, Counsel for Appellee Division of Mineral Resources Management; Bruce Cryder, Clay Larkin, Counsel for Intervenor Peabody Coal Company; Michael B. Gardner, Counsel for Limited Intervenor Oxford Mining Company.

Date Issued: April 8, 2010

BACKGROUND

These four consolidated matters came before the Reclamation Commission upon appeal by Tri-State Reclamation, LLC ["Tri-State"] from four separate actions taken by the Chief of the Division of Mineral Resources Management [the "Division"]. Each of the Chief's actions addressed the fate of a body of water, constructed as a temporary slurry impoundment under the authority of coal mining and reclamation permit D-325, and known as temporary impoundment T-19 ["impoundment T-19" or "T-19"]. Permit D-325 was issued to Intervenor Peabody Coal Company ["Peabody"]. Impoundment T-19 is located upon property currently owned by Appellant Tri-State, and is locally referred to as Merkle Lake.

On September 8, 2004, the Division Chief approved an application to revise permit D-325 (ARP-53). This application was filed by permittee Peabody Coal. The revised plan requires Peabody to reclaim impoundment T-19 by dewatering the impoundment and covering the exposed area with two feet of resoiling material. As this revision was approved by the Division, it represents the reclamation plan currently in effect for impoundment T-19. On October 1, 2004, landowner Tri-State filed a notice of appeal from the Chief's approval of this revision to permit D-325. Tri-State's appeal was assigned case number **RC-04-030** by this Commission.[1]

Approximately one year later (while Tri-State was pursuing an appeal of ARP-53 in the Court of Appeals), in October 2005, Peabody submitted another application to revise the reclamation plan for impoundment T-19 (ARP-54-EP). This application proposed to retain impoundment T-19 as a permanent structure, and identified the retention of T-19 as an "experimental practice." On November 6, 2006, the Chief issued Chief's Order 7319, denying this application. Ohio law allows an adversely affected party to seek informal review of certain Chief's decisions. While informal review is ongoing, the time for appealing to this Commission is tolled. Tri-State sought informal review of Chief's Order 7319. This informal review resulted in a decision by the Division Chief, issued on March 13, 2008, wherein the Chief reaffirmed his findings and conclusions as articulated in Chief's Order 7319. On April 11, 2008, Tri-State appealed Chief's Order 7319 (issued on November 6, 2006) and the Chief's March 13, 2008 decision reaffirming Order 7319 to the Commission. The appeal of Chief's Order 7319 was assigned case number **RC-08-007.** The appeal of the Chief's decision after informal review was assigned case number **RC-08-008.**

After the issuance of the Chief's March 13, 2008 decision reaffirming Chief's Order 7319, Tri-State asked the Chief to reopen informal review. On April 9, 2008, the Division communicated to Tri-State that the informal review process was closed. On April 11, 2008, Tri-State appealed the Chief's April 9, 2008 decision not to reopen the informal review process. This appeal was assigned case number **RC-08-009.**

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[1] On October 27, 2004, the Division filed a Motion to Dismiss case RC-04-030, arguing that Tri-State (as the landowner, and not the permittee) lacked appropriate standing to appeal the approval of the permittee's (Peabody's) request to revise its reclamation plan. On November 19, 2004, the Commission **granted** the Division's Motion to Dismiss. The Commission's decision was then appealed by Tri-State to the Court of Appeals for Perry County (04-CA-19). On December 2, 2005, the Court of Appeals **confirmed** Tri-State's standing, and case number RC-04-030 was **remanded** to this Commission.

Appeals RC-04-030, RC-08-007, RC-08-008 and RC-08-009 are factually related, and all address temporary slurry impoundment T-19, or the Chief's administrative review of matters relating to impoundment T-19. Therefore, upon joint motion of the parties, the Commission **consolidated** these four appeals for hearing and decision.

Tri-State owns the land at issue in these matters. Peabody held the actual mining permit for the relevant area, and is ultimately responsible for the reclamation of impoundment T-19. Pursuant to motion, the Commission **granted** intervenor status to Peabody, and Peabody has participated in these matters with full-party status.

The hearing in these consolidated appeals commenced on February 4, 2009 and concluded on September 3, 2009, encompassing 16 days of merit hearing. On three occasions, members of the Commission, accompanied by the parties to these actions, conducted site views of the areas and features at issue. Following the merit hearing, written closing arguments were submitted by all parties.

During deliberations, this Commission identified an issue, which had not been addressed by the parties to these appeals. Specifically, the Commission noted that appeals RC-04-030 and RC-08-007 address two applications for the revision of permit D-325. However, the evidence at hearing established that permit D-325 had expired on May 2, 1994. The Commission questioned the right of a permittee to revise an expired permit, and the authority of the Chief to act upon such a request for revision. Therefore, on January 8, 2010, the Commission called for briefs upon this legal issue.

In response to the Commission's call for briefs, Oxford Mining Company asked to intervene for the limited purpose of addressing the issue of whether a reclamation plan, associated with an expired permit, could be revised. On January 29, 2010, the Commission **granted** limited intervenor status to Oxford Mining Company, and accepted Oxford's filing on this legal issue. All briefs on this legal issue were filed by February 4, 2010.

FINDINGS OF FACT

1. Coal mining and reclamation permit D-325 was issued to Peabody Coal Company on May 2, 1984. Impoundment T-19 is located on the permit D-325 area. Permit D-325 expired on May 2, 1994. However, the reclamation plan associated with permit D-325 remains in effect. The postmining land use for this area has been identified as "wildlife."

2. Permit D-325 is located in Perry County, Ohio, and encompasses approximately 928.5 surface acres, 435.9 of which were affected by mining. Permit D-325, and the surrounding area, have been extensively mined over the years. In the 1960's, Peabody surfaced mined the Middle Kittanning #6 Coal in the area of D-325. In, or about, 1968, Peabody surfaced mined the Middle Kittanning #6 Coal from a relatively small area now covered by impoundment T-19, beneath a portion of the current T-19 embankment, and in an area south, and downstream, of the embankment. The Lower Kittanning #5 Coal was also surfaced mined in the general area of permit D-325, but to a much lesser extent. Peabody operated several underground mines in the vicinity of permit D-325. From the mid-1960's until the early 1970's, Peabody operated the Sunnyhill No. 7 deep mine [the "Sunnyhill mine"], extracting the Middle Kittanning #6 Coal by the room and pillar method.[2] Peabody's surface mining came to within about 675 feet of the Sunnyhill underground works. The Sunnyhill mine experienced several roof falls, involving the immediate mine roof. The Sunnyhill mine closed in July 1973. When the Sunnyhill mine closed, many man-made barriers were left in place underground.

3. When the Sunnyhill mine closed, earthen seals were installed at the two mine portals. For more than twenty years, the south portal seal has been discharging water, and continues to discharge at an approximate rate of 70 gallons per minute. The discharge from the south portal has a high iron content, and is sometimes acidic. This discharge is being successfully treated by a passive wetland treatment system. (Kneen testimony.)

[2] The underground mine works associated with the Sunnyhill No. 7 deep mine underlay many hundreds of acres.

4. Beginning in the mid-1960's, and until about 1990, Peabody operated a coal processing plant on this site, which "washed" the coal produced from Peabody's mining operations. Coal "washing" operations are designed to remove fines and non-combustible impurities from coal. The processing of coal generates coal-processing waste. One form of coal processing waste is "slurry," which consists of a mixture of water, coal fines, clay and silt. Prior to 1973, the slurry, which resulted from Peabody's coal processing, was impounded in a number of surrounding valleys. One of these impounded valleys would eventually be the site of impoundment T-19.

5. The Sunnyhill mine was closed and sealed in 1973. In the mid-1980's, Peabody sought permission to utilize the sealed underground mine for disposal of coal slurry. On November 4, 1985, the Division approved an Underground Injection Control Plan ["UIC"], which allowed Peabody to inject slurry into the Sunnyhill deep mine void. Between February 1986 and June 1987, Peabody injected approximately 350 acre-feet of slurry, amended with alkaline materials, into the western portion of the underground works. (See DMRM Ex. TTT.) Currently, portions of the Sunnyhill deep mine contain this injected slurry. While the slurry injection points are known, it is not known where the slurry has settled within the Sunnyhill mine void, nor is the depth of the slurry within the mine void known. Natural barriers within the mine void (such as roof falls) and man-made barriers (such as stoppings and man-doors) would impact the flow and settling of the injected slurry within the mine void.

6. Prior to 1973, some slurry generated by Peabody's coal processing plant, was impounded in the valley where temporary impoundment T-19 would eventually be located. In the early 1970's, construction of what would become T-19 commenced.

7. Temporary slurry impoundment T-19 was added to Peabody's permit D-325 on October 9, 1986, as part of an amendment to this permit. (See DMRM Ex. C.) T-19 was designed and built to facilitate additional slurry disposal. The embankment of T-19 was constructed in stages over a number of years. A portion of the initial embankment was constructed on top of overburden generated from previous surface mining in this area. The T-19 embankment consists of fill (clay, silt and sand), and is approximately 40 feet high and 900 feet long. (See DMRM Ex. C, Soil Profile, Sheet 3 of 10; DMRM Ex. MM, pond certification.)

8. From July 1987 through December 1990, Peabody deposited slurry into T-19, to an approximate depth of 40 – 60 feet (covering the slurry that was originally placed in the valley bottom prior to 1973). (See DMRM Ex. FF.) At maximum pool, T-19 contains approximately 62 surface acres of water and has a storage volume of approximately 900 acre-feet. The average pool of T-19 is 36 acres. (See DMRM Ex. UU, p. 11 of 18.) Slurry is not visibly evident at impoundment T-19, as the slurry is covered by approximately 2.4 – 29 feet of water (depending upon the area of the impoundment). (See DMRM Ex. FF, p. 7.)

9. About 20% - 25% of T-19 is underlain by the underground mine voids created by Peabody's Sunnyhill deep mine. (Owen Testimony.) The deep mine voids beneath T-19 are located on the northern, western and eastern edges of the impoundment. (See Appendix A - diagram of T-19.) The cover, or rock, separating the bottom of T-19 from the roof of the Sunnyhill mine, is generally less than 100 feet thick. In one area, on the western side of impoundment T-19, the cover from the bottom of T-19 to the roof of the Sunnyhill mine is only about 40 feet thick. However, most of T-19 is located above solid geologic strata, which has not been disturbed by underground mining. The T-19 embankment is not located above the underground mine.

10. On December 30, 1994, Peabody submitted its Final Report for permit D-325, indicating that mining activities had concluded pursuant to permit D-325.. (See DMRM Ex. D.) Reclamation of specified areas of permit D-325 had already commenced by 1994. However, the reclamation of impoundment T-19 had not begun, and still has not commenced.

11. Impoundment T-19 was added to the permit D-325 area in 1986. Initially, permit D-325 included a reclamation plan for T-19, which required Peabody to fully reclaim this temporary slurry impoundment by breaching the impoundment's embankment, draining the impoundment, covering the slurry with four feet of non-toxic material, and revegetating the affected area to complement the approved post-mining land use of wildlife. (See DMRM Ex. C)

12. Over a ten-year period, from 1995 to 2005, Peabody submitted six applications to revise ["ARP"] permit D-325, proposing various plans for impoundment T-19. Of these six ARPs, four were withdrawn. The two remaining ARPs are the subject of this decision.

13. **ARP-53**, which is the subject of **appeal RC-04-030**, was approved on September 8, 2004, and remains in effect. This ARP provides for the reclamation of T-19 through the standard "drain and cover" procedure, typically employed to reclaim temporary impoundments. However, ARP-53 allows Peabody to apply two feet of non-toxic resoiling material, as opposed to the standard four feet of material.

14. **ARP-54-EP**, which was denied by the Division through Chief's Order 7319, proposes to leave T-19 as a permanent impoundment under the experimental practice provisions of Ohio law. ARP-54-EP, and the Division's administrative review of ARP-54-EP, are the subjects of **appeals RC-08-007, RC-08-008 and RC-08-009**.

THE FIRST ARP ADDRESSING T-19
THE 1995 ARP

15. On August 23, 1995, Peabody submitted its first ARP addressing impoundment T-19. (See DMRM Ex. H.) The 1995 ARP proposed to convert T-19 from a temporary to a permanent impoundment. Following a review of this ARP, the Division expressed concern about leaving a slurry impoundment on site as a permanent structure. (See DMRM Ex. J.) On May 1, 1997, Peabody withdrew the 1995 ARP. (See DMRM Ex. I.)

16. On September 15, 1997, the Division issued to Peabody Notice of Violation ["NOV"] 25474, citing non-contemporaneous reclamation of the permit D-325 area, specifically referencing Peabody's failure to reclaim T-19. On October 14, 1997, NOV 25474 was terminated, due to the impending submission of a second ARP addressing the reclamation of T-19.

THE SECOND ARP ADDRESSING T-19
THE 1997 ARP

17. On October 22, 1997, in response to the issuance of NOV 25474, Peabody submitted a second ARP to the Division, again proposing to leave impoundment T-19 as a permanent structure. The 1997 ARP was similar to the 1995 ARP, but proposed that open-channel spillways be added to the impoundment. (See DMRM Ex. M.) Peabody withdrew the second ARP on February 11, 1999. (See DMRM Ex. R.)

18. On June 11, 1998, Peabody entered into a contract to sell over 1,000 acres of land to Tri-State. This contract included the land upon which impoundment T-19 is located. The original contract contained certain conditions that could not be met. Thus, a restated contract was drafted and signed on December 16, 1998. (See DMRM Ex. P.) Pursuant to the contract for sale of this property, Tri-State assumed responsibility for the reclamation of T-19. However, permit D-325 has not been transferred from Peabody to Tri-State. Peabody remains responsible, under its permit and under Ohio law, for the reclamation of the permit D-325 area. Tri-State is owned by Mr. Chuck Owen. Peabody also sold over 4,000 acres of land in the vicinity of T-19 to Mr. Owen and his wife.

THE THIRD ARP ADDRESSING T-19
ARP-36-EP

19. On January 25, 1999, Peabody submitted a third ARP to the Division. This ARP would eventually be known as ARP-36-EP. This ARP requested that temporary slurry impoundment T-19 be left as permanent as part of an experimental practice. (See DMRM Ex. Q.) Both the Division and the federal Office of Surface Mining ["OSM"] reviewed ARP-36-EP. On March 9, 2000, OSM issued a deficiency letter, identifying several concerns relating to ARP-36-EP. Among the identified concerns was the following:

> The impoundment is partially located over an underground mine. The ARP should address the potential for leakage into the underground mine, the potential impact to water quality, and the potential impact that mine subsidence may have on the impoundment.

(See DMRM Ex. S.)

20. On August 14, 2000, Peabody submitted a revision to ARP-36-EP, providing more comprehensive information relating to the proposed experimental practice. (See DMRM Ex. T.) On December 20, 2000, the Division sent a letter to Peabody, stating that, after thorough review, ARP-36-EP could not be approved due to, among other things, the high risk of potential for breakthrough between the impoundment and the sealed underground mine. Specifically, the Chief stated:

> First of all, room and pillar underground workings under the current impounded slurry are at a depth of only 76[3] to 103 feet, and may not be below grade at all locations. The recent failure of a Kentucky slurry impoundment[4] in a similar situation resulted in considerable environmental damage. Moreover, no substrate data was available in your package to determine the ability of the impounded slurry to be treated. Based on the data provided, I am not inclined to approve your request....

(See DMRM Ex. U.) The Division encouraged Peabody to withdraw ARP-36-EP.

21. On January 4, 2002, the Division sent a second letter to Peabody regarding ARP-36-EP, wherein the Chief stated:

> The Division in conjunction with the Office of Surface Mining, has recently initiated an investigation of all coal refuse impoundments located over or near abandoned underground mine workings. This included the [T-19] site to evaluate the potential for breakthrough into underground mine works. The preliminary evaluation reveals [T-19] poses a "High Risk" for potential breakthough. Additional exhaustive geologic, hydrologic and engineering studies, provided by Peabody Coal Company, will be required to determine if any measures could be taken to assure prevention of a catastrophic event. The Division believes that existing risk, now identified, requires swift action. Therefore, the application of an experimental practice [ARP-36-EP] regarding the [T-19] impoundment cannot be approved.

(See DMRM Ex. X.) The Division asked Peabody to submit a plan "outlining the closure of [T-19], stream reconstruction and other actions necessary for the removal of this impoundment." On January 24, 2002, Peabody sent a letter to landowner Mr. Chuck Owen of Tri-State, stating that: "[Peabody] believes that the only prudent method of reclamation entails dewatering [T-19] and covering all exposed refuse with non-toxic soil material... . (See DMRM Ex. Y.) Consequently, on January 24, 2002, Peabody withdrew ARP-36-EP. (See DMRM Ex. Z.)

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[3] Evidence at hearing established that the lowest depth of cover between T-19 and the Sunnyhill No. 7 mine void is actually about 40 feet.

[4] On October 11, 200, approximately 250 million gallons of slurry "broke-through" from an impoundment, entering an underground mine in Martin County, Kentucky, and discharging from the mine at two locations. (See DMRM Ex. V.)

THE FOURTH ARP ADDRESSING T-19
ARP-51

22. On June 4, 2002, Peabody submitted ARP-51. ARP-51 proposed a form of "wetland conversion" for impoundment T-19, suggesting a reduction in the size of T-19. ARP-51 proposed the retention of only some water in the impoundment (covering approximately 7.75 acres), along with a wetland/upland direct re-vegetation and dirt cover. Under this plan, there would be no water overlying the old underground mine works, and any inundated area would be offset from the old works by an appropriate angle of draw. (See DMRM Ex. AA.) On December 9, 2002, the Division sent a letter to Peabody continuing to express a concern about the potential for breakthrough, and suggesting that Peabody consider a standard "drain and cover" reclamation plan for T-19. (See DMRM Ex. CC.) On February 17, 2003, Peabody sent a letter to the Division, indicating that Peabody had decided to pursue a more conventional reclamation plan. (See DMRM Ex. DD.) On that same day, Peabody sent a letter to Tri-State, stating that the Division would not likely approve ARP-51, and that Peabody intended to submit an ARP to dewater and fully reclaim T-19. (See DMRM Ex. EE.) On May 21, 2003, Peabody withdrew ARP-51. (See DMRM Ex. GG.)

THE FIFTH ARP ADDRESSING T-19
ARP-53
UNDER APPEAL IN RC-04-030

23. On March 10, 2003, Peabody submitted ARP-53, proposing that temporary slurry impoundment T-19 be fully dewatered and covered with two feet of soil material (the "drain and cover" plan). A revised version of this ARP was submitted on April 16, 2004. (See DMRM Ex. FF.) Under this plan, no experimental practice was anticipated. The revised ARP provided this general description of the proposed plan:

> This Application to Revise a Coal Mining Permit (ARP) proposes to reclaim Temporary Impoundment T-19 (Merkle Lake) by breaching and dewatering the impoundment, amending exposed slurry with neutralizing agricultural lime, and covering the slurry with two feet of topsoil/subsoil material. The existing dam will be eliminated to the approximate level of slurry deposition and will not impound water. The proposed combination of lime amendment and topsoil/subsoil cover will reduce the volume of borrow material and enable some of the forested watershed to remain undisturbed during reclamation.

24. On September 8, 2004, the Division approved ARP-53. (See DMRM Ex. KK.) ARP-53 articulates the reclamation plan currently in effect for impoundment T-19. Because Peabody had previously surfaced mined part of the original valley, and had partially filled the valley with slurry, a variance from the typical performance standards was necessary. ARP-53 varies from standard reclamation, in that Peabody is allowed to apply two feet of non-toxic resoiling materials as opposed to the standard four feet of material. Borrow material was approved for use, because the original topsoil had been lost, and additional non-toxic material was necessary to adequately cover the slurry. (Clark Testimony.) ARP-53 proposed that approximately 12 acres of borrow area would be affected in the reclamation of impoundment T-19, but requested the flexibility to utilize as many as 29.59 acres for borrow. (See DMRM Ex. FF.) On October 1, 2004, before Peabody had commenced any reclamation work on T-19, the Chief's approval of ARP-53 was appealed by landowner Tri-State to the Reclamation Commission. This appeal is designated as case number **RC-04-030**, and is among the agency actions addressed in the immediate decision.

25. On January 21, 2005, the Division issued NOV 21486 to Peabody for non-contemporaneous reclamation of temporary slurry impoundment T-19. Ultimately, abatement of NOV 21486, and other reclamation efforts relating to impoundment T-19, were stayed by order of the Perry County Court of Appeals.[5]

26. On March 23, 2005, Chief's Order 7310 was issued to Peabody, alleging disturbance of the hydrologic balance at the permit D-325 site, and specifically referencing acid seepage from the Sunnyhill mine's sealed south portal. Chief's Order 7310 required reclamation and repair of this feature. On December 19, 2006, in response to Chief's Order 7310, Peabody

[5] In November 2004, the Commission **dismissed** Tri-State's appeal of ARP-53 (RC-04-030), finding that Tri-State, as the landowner, lacked standing to appeal the Chief's approval of Peabody's request to revise its reclamation plan. While an appeal of the Commission's dismissal was pending in the Perry County Court of Appeals, Tri-State filed a Motion for Temporary Relief with that court, seeking to suspend reclamation of T-19 during the pendency of the litigation. On March 10, 2005, the Court of Appeals **granted** Temporary Relief, and imposed a stay of reclamation efforts on T-19. On December 2, 2005, the Court of Appeals **confirmed** Tri-State's standing to appeal ARP-53, and **remanded** appeal RC-04-030 to the Commission. While the Court's grant of Temporary Relief expired with the conclusion of that appeal, the parties have operated under an informal understanding that no enforcement actions relating to the reclamation of T-19 would be taken until the current appeals before the Commission are concluded.

submitted a document entitled "Unified Hydrologic Assessment and Proposal of Closure Options." (See DMRM Ex. UU.) Chief's Order 7310 was terminated on October 26, 2006. However, the discharge from the sealed south portal continues to this day, at a rate of approximately 70 gallons per minute. Peabody is successfully treating this discharge. (Kneen Testimony.)

THE SIXTH ARP ADDRESSING T-19
ARP-54-EP
UNDER APPEAL IN RC-08-007, RC-08-008 & RC-08-009

27. On October 18, 2005 (while Tri-State's appeal of ARP-53 to the Court of Appeals for Perry County was pending), Peabody submitted ARP-54-EP, its sixth ARP addressing impoundment T-19 and its second experimental practice application. A revised version of this ARP was submitted on November 2, 2005. (See DMRM Ex. MM.) ARP-54-EP proposed to leave temporary slurry impoundment T-19 as a permanent structure, with no reduction in the water level. Both the Division and OSM reviewed ARP-54-EP.

28. On May 31, 2006, the Division sent a letter to Peabody, identifying several deficiencies relating to ARP-54-EP. (See DMRM Ex. OO.) One focus of the deficiency letter was the Division and OSM's analysis of the breakthrough potential between the bottom of T-19 and the underground mine workings located beneath certain portions of the impoundment. The Division concluded that "the impoundment does not meet the suggested minimum cover (depth of rock between the bottom of T-19 and the underground mine workings) guidelines specified in IC 8741,"[6] and identified the potential for subsidence (collapse of overlying rock into a mine void) in areas of low cover. The deficiency letter stated in part:

[6] IC [information circular] 8741 is a U.S. Bureau of Mines guidance document, entitled: *Results of Research to Develop Guidelines for Mining Near Surface and Underground Bodies of Water.* This document sets forth engineering principals to be applied in determining the risks (safety and other hazards) of mining in close proximity to bodies of water. Applying engineering principles, IC 8741 recommends, as a guideline, a minimum depth of cover of 125 feet between the bottom of T-19 and the underground mine workings, or the existence of at least 44 feet of a competent bed of sandstone, or similar material, separating these features. (See DMRM Ex. V.)

> The long-term prospect is not favorable for a slurry impoundment with an indeterminate life, situated over an underground mine with thin overburden. There will be significant environmental impact if [the impoundment] dewaters into the underground mine or is breached to reduce the hazard class or dewaters by disrepair or neglect. There are several time-dependent aging processes that threaten this impoundment over the long term. Subsidence is known to have a strong time dependant component. ... If subsidence occurs while this impoundment still contains water, the 40+ PSI head will surcharge the mine and could drive slurry out of the [south portal]. If high volume piping occurs, the resultant catastrophe would exceed the means and ability of Tri-State Reclamation LLC to mitigate if they are still viable at that time.

(See DMRM Ex. OO.)

29. On November 6, 2006, the Division issued Chief's Order 7319, disapproving ARP-54-EP. Chief's Order 7319 states in pertinent part:

> A team of Division and OSM engineers, hydrologists, and others reviewed the application for experimental practice.
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> The team's review concluded that the applicant has not provided and, is not likely to be able to provide, demonstrations, required for approval of an experimental practice. Such demonstrations, among other things, must show that the proposed experimental practice is potentially more or at least as environmentally protective, during and after mining operations, as those practices required under [Revised Code Chapter 1513] and rules adopted there under; and the experimental practice must not reduce the protection afforded public health and safety below that provided under [Revised Code Chapter 1513] and rules adopted there under. The applicant has not shown that leaving the impoundment in place is no less protective than removing it.
>
> The team's conclusion is also based on the risk of a breakthrough of the impounded water and coal slurry into the abandoned underground mine immediately below the impoundment due to mine subsidence or other failure of the strata between the bottom of the impoundment and the underground mine at anytime in the future. Such a breakthrough could cause potential discharge of this material from the underground mine portal(s).

(See DMRM Ex. TT.) Chief's Order 7319 was appealed to this Commission, and is designated as case number **RC-08-007**.

30. On December 5, 2006, prior to appealing Chief's Order 7319 to this Commission, Tri-State requested that the Chief conduct an informal review of Chief's Order 7319. (See Tri-State Ex. 12.) Tri-State indicated in its request for informal review that it was preparing to submit a new ARP with additional reclamation options.[7] On June 19, 2007, the Division sent a letter to Tri-State, requiring that all additional data, reports and documents be submitted to the Division by July 1, 2007. (See Tri-State Ex. 22.)

31. On August 15, 2007, Tri-State submitted additional information, but not an ARP, to the Division. The submitted information included a report on the mine seals at the Sunnyhill deep mine, an evaluation of two railroad tunnels in Perry County, a tailings stabilization plan, and a possible slurry fines recovery plan, involving New Energy USA. (See Tri-State Ex. 41.)

32. On March 13, 2008, after being considered for approximately 16 months in informal review, the Acting Chief issued informal review findings, confirming the denial of ARP-54-EP. (See DMRM Ex. VV.) The March 13, 2008 decision specifically stated that: "the denial of [the] application for experimental practice was both lawful and reasonable." Among the specific findings in the Acting Chief's March 13, 2008 decision were the following:

> 1. The ARP [ARP-54-EP] did not fulfill the legal requirements for an experimental practice application. The ARP failed to identify how it would encourage advances in mining or reclamation technology; failed to propose timeframes or measures to establish new technology or practices, failed to clearly define an objective; failed to define a monitoring plan or measures that would be taken; and failed to define resources available and remedies if the experimental practice failed.
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> 2. The applicant could not demonstrate that leaving a slurry impoundment in place over an abandoned underground mine was "potentially more, or at least as environmentally protective" as removing the impoundment and restoring the land as required by the reclamation plan [ARP-53] in the approved permit.
>
> 3. The applicant could not demonstrate that the potential for sinkhole subsidence and break-through of impounded water and coal slurry into the underground mine workings does not exist. The review team concluded that in some areas there were less

[7] No testimony or exhibits were presented at hearing indicating that such an ARP was ever submitted.

> than forty-feet of bedrock overburden between the base of deposited slurry and the roof of the underground mine, well below minimum cover guidelines contained in the U.S. Bureau of Mines IC 8741 for prevention of breakthrough.
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> 4. The applicant had not provided information regarding the conditions of the underground mine below the impoundment including: extent of slurry deposition in the mine, extent of inundation of the mine, extent of void space, roof conditions, inconsistent pillar size and entry width, and the construction and integrity of the mine seal at the portal. All of these factors are critical to knowing the condition of the mine and the potential impact the mine may have on the impoundment. In addition, should a breakthrough occur, the extent to which the water and slurry may or may not be contained by the underground mine and the extent of impact to the environment and public safety cannot be predicted

(See DMRM Ex. VV.) The Acting Chief's March 13, 2008 decision after informal review was appealed to the Commission by Tri-State, and is designated as appeal number **RC-08-008**.

33. Following the Acting Chief's March 13, 2008 decision, Tri-State requested reconsideration of the Acting Chief's findings on informal review and asked for additional time, in order to provide more information regarding T-19. At this time, Chief's Order 7319, disapproving ARP-54-EP, had been under informal review for more than 16 months, and the experimental practice application had been under consideration for more than two years. On April 9, 2008, the Acting Chief denied Tri-States request to reopen the informal review process. (See Tri-State Ex. 13.) Tri-State appealed this denial, which is designated as case number **RC-08-009**.

34. Because slurry impoundment T-19 has existed for more than 20 years, vegetation and trees have been established surrounding this impoundment. Slurry is not visible from the impoundment's surface. T-19 is locally known as Merkle Lake. Tri-State routinely opens T-19 to members of the public for activities such as fishing. The area around T-19 is currently uninhabited and undeveloped. However, railroad tracks, currently in use, exist in close proximity to the Sunnyhill south portal. State Route 13 is located approximately 1.1 mile from the south portal. The town of Moxahala is located 1.6 miles from the south portal. (Green Testimony.) Mr. Owen plans to construct a residence overlooking impoundment T-19. And, Tri-State, or Chuck Owen, plans to subdivide the property surrounding T-19 and develop homes in this area. (Owen testimony.)

CONCLUSIONS OF LAW

1. THE ULTIMATE BURDEN OF PERSUASION IN THESE MATTERS IS UPON THE APPELLANT TRI-STATE RECLAMATION TO PROVE THAT THE CHIEF'S DECISIONS TO APPROVE ARP-53, TO DISAPPROVE ARP-54-EP, AND TO TERMINATE INFORMAL REVIEW OF CHIEF'S ORDER 7319 WERE ARBITRARY, CAPRICIOUS OR OTHERWISE INCONSISTENT WITH LAW.

Discussion: Pursuant to O.R.C. §1513.13(A)(1), any person having an interest that is, or may be, adversely affected by a decision of the Chief of the Division of Mineral Resources Management may appeal to the Reclamation Commission. The Commission has "exclusive original jurisdiction to hear and decide such appeals."

O.R.C. §1513.13(B) sets forth the standard of review in appeals before the Commission, stating:

> The commission shall affirm the . . . decision of the chief unless the commission determines that it is arbitrary, capricious, or otherwise inconsistent with law; . . .

O.A.C. §1513-3-16(B) places the burden of persuasion in these appeals with the Appellant Tri-State. Therefore, it is Tri-State's burden to establish that the Chief's decisions, in the four appeals under review, were arbitrary, capricious or inconsistent with law.

The "arbitrary, capricious or inconsistent with law" standard of review is a deferential one, which presumes that an agency's actions are valid. The Commission is required to affirm the Chief, if the Commission finds that the Chief's actions were reasonable and lawful. The Commission may not substitute its judgment for that of the Chief. Rather, the Commission must review the Chief's actions and, if the Commission finds that the Chief acted properly, the Commission must affirm the decision of the Division Chief.

While O.R.C. §1513.13 presents a presumption of regularity or validity, the Chief's decision must still be supported by properly established facts and by the applicable law, in order to qualify as neither arbitrary or capricious, nor inconsistent with law. "Arbitrary and capricious" administrative actions have been defined by the Franklin County Court of Appeals to include one or more of the following factors:

> Among the indicia that agency action is arbitrary and capricious are
>
> (1) that the agency has relied on factors the legislature did not intend it to consider;
> (2) that the agency failed to consider an important aspect of the problem;
> (3) that the agency's explanation of its decision is contrary to the evidence before it; or
> (4) that the agency's action is implausible to an extent that cannot be attributed to agency expertise.

Morning View Care Center-Fulton v. Ohio Department of Human Services, 2002-Ohio-2878; 148 Ohio App3d 518, ¶48 (10th District Court of Appeals).

2. THE CHIEF POSSESSES THE AUTHORITY TO REVIEW AND APPROVE AN APPLICATION TO REVISE A PERMIT SUBMITTED AFTER THE EXPIRATION OF THE PERMIT'S TERM, IF THE APPLICATION ADDRESSES RECLAMATION OF THE AREA.

Discussion: Permit D-325 expired on May 2, 1994. Yet, ARP-53 and ARP-54-EP were filed in 2004 and 2005, respectively. Thus, these ARPs were filed after the expiration of permit D-325.

Pursuant to O.R.C. 1513.07(A)(2), mining permits are issued for a term of five years, with the right of successive renewal upon expiration, provided that certain conditions are met. *See O.R.C. §1513.07(A)(4)(a).*

O.R.C. §1513.07(F)(1) provides:

> During the **term of the permit**, the permittee may submit an application for a revision of the permit, together with a revised reclamation plan, to the chief.

(Emphasis added.)

In 1982, the Ohio legislature adopted significant revisions to Revised Code Chapter 1513. These revisions were adopted in response to the passage of the federal Surface Mining Control and Reclamation Act ["SMCRA"], as "parallel legislation consistent with the requirements and goals of SMCRA." *The Village of Pleasant City v. DOR, 1993-Ohio-220; 67 Ohio St. 3d 312, 316 (Ohio Supreme Court); Greenbelt Advocates v. DMRM, 2008-Ohio-3238, 176 Ohio App.3d 638, ¶26 (7th District Court of Appeals).* SMCRA provides a uniform, national scheme for the regulation of coal mining. SMCRA also allows for local regulation of mining, provided that state law meets certain standards. Chapter 1513, Ohio's coal mining law, has been modeled after SMCRA. Under SMCRA, in order for the State of Ohio to continue to regulate coal mining within its borders, Chapter 1513 must be "as stringent as," or "as effective as" the federal law. Thus, it is not surprising that O.R.C. §1513.07(F)(1) contains essentially the same language as is found under SMCRA at 30 U.S.C. §1261(a)(1).

As Ohio mining and reclamation law mirrors the federal law, the Commission may look to the provisions of SMCRA for guidance. The federal guidance on the duration of permits provides that a permit should be treated as having: (1) one term for coal mining and extraction, which term would expire after five years, and (2) a separate and indefinite term for reclamation. In this regard, the federal government has stated:

> 'The permit issued under [SMCRA] is a permit to mine coal under specified conditions. Suspension of the right to mine does not suspend the obligation to reclaim under the Act.' This statement ... implicitly recognize[s] that a distinction exists between the authority to conduct coal extraction activities ... and the obligation to reclaim.

Permit Guidance @ 13,814 (citing 47 Fed. Reg. 45631, August 16, 1982).

Significantly, the federal Office of Surface Mining ["OSM"] amended its rules in 1989 to "clarify that a permit need not be renewed if solely reclamation obligations exist under the permit." *See 54 Fed. Reg. 13814, 13815 (April 5, 1989); see also 30 C.F.R. §773.11(a) (now 30 C.F.R. §773.4(a)).* Indeed, 30 C.F.R. §773.4(a) specifically provides that:

> A permittee need not renew the permit if no surface coal mining operations will be conducted under the permit and solely reclamation activities remain to be done.

The Commission **FINDS** that the obligation to reclaim pursuant to an approved reclamation plan is imposed by law, and exists independently of a mining permit. The obligation to reclaim remains in force until all reclamation work is successfully accomplished. The Commission further **FINDS** that the Chief has the authority to consider requested revisions to a reclamation plan, even after a mining permit has expired.

3. THE CHIEF DID NOT ACT ARBITRARILY, CAPRICIOUSLY OR IN A MANNER INCONSISTENT WITH LAW IN APPROVING APPLICATION TO REVISE PERMIT D-325, ARP-53, WHICH REQUIRES THE DEWATERING AND RECLAMATION OF IMPOUNDMENT T-19. THEREFORE, THE COMMISSION FINDS THAT THE CHIEF'S APPROVAL OF ARP-53 WAS PROPER AND SUPPORTED BY LAW. (RC-04-030)

Discussion: Impoundment T-19 was constructed, and permitted, as a temporary slurry impoundment. Certain impoundments, which result from mining operations, may be left as permanent structures following reclamation. In order for such impoundments to remain in place, certain conditions regarding construction and maintenance of the impoundments must be met and approved by the Division. However, Ohio law specifically provides that slurry impoundments are temporary structures, which must be removed and reclaimed. The law states at O.A.C. §1501:13-9-09(C)(2)(a):

> Each impounding structure constructed of coal mine waste or intended to impound coal mine waste shall be designed, constructed and maintained in accordance with the requirements for temporary impoundments under paragraph (H) of rule 1501:13-9-04 of the Administrative Code. Such structures may not permanently retain the ability to impound as part of the approved postmining land use.

The law is, therefore, clear that slurry impoundments, by virtue of the fact that they impound coal mine waste, are temporary structures, which must be drained and covered as part of the reclamation of an affected area. The law relating to slurry impoundments, does not provide any exceptions to this rule.[8]

The temporary nature, and ultimate reclamation, of slurry impoundments is also discussed at O.A.C. §1501:13-9-09(A)(1), which states *inter alia*:

> Coal mine waste shall be placed in a controlled manner to:
>
> * * *
>
> (c) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surrounds and the approved postmining land use ...

Pursuant to O.A.C. §1501:13-9-04(R), the mine operator must ensure that all temporary impoundments are removed and reclaimed before seeking release of performance security.[9]

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[8] Although not specific to the retention of slurry impoundments, the experimental practice provisions of O.R.C. §1513.36 allow for variances to standard reclamation practices, and may be applied to temporary slurry impoundments. (See discussion of experimental practices, *infra*.) Also, the Division has – in one instance – allowed reclamation of a slurry impoundment, which varied from the typical reclamation practices. In a situation where the size and depth of the impoundment rendered the potential for environmental damage or hazard to public health and safety *de minimus*, the Division allowed an exception, outside of the law, to the requirement that slurry impoundments be totally dewatered and reclaimed (*i.e.*, the Division allowed the retention of three small wetland cells, totaling approximately 1.5 acres in size, and containing 18 inches of water, associated with the Quarto Mining Company's Powhatan No. 7 mine, to be converted to wetlands). (Clark testimony.)

[9] Pursuant to O.R.C. §1513.08, a mine operator must post performance security in support of a mining operation. This security is intended to ensure the reclamation of an affected area, and to provide reclamation funds in the event that an operator fails to properly reclaim the area. The performance security is released in stages, as reclamation progresses and is approved by the Division. *(See O.R.C. §1513.16(E)(3) & (4); O.A.C. §1501:13-7-05(A)(2)(b).)*

Standard reclamation of temporary slurry impoundments requires that the impoundment be drained, and that the area be covered with non-toxic material and revegetated. In this regard, O.R.C. §1513.16(A) requires an operator to:

> (3) ... cover all acid-forming and other toxic materials in order to achieve an ecologically sound land use compatible with the surrounding region in accordance with the approved mining plan.

Also, in order to minimize disturbance to the hydrologic balance and water quality at a mine site and in associated offsite areas, mining and reclamation operations must prevent or remove water from contact with toxic producing deposits. *See O.R.C. §1513.16(A)(10)(a)(i).*

Typically, coal mine waste is to be covered with four feet of non-toxic material. However, the Chief may allow less than four feet of cover material. In this regard, O.A.C. §1501:13-9-09(B)(3)(d) provides:

> ... coal mine waste shall be covered with a minimum of four feet of the best available nontoxic and noncombustible material, ... The chief may allow less than four feet of cover material based on physical and chemical analyses which show that the requirements of rule 1501:13-9-15 [requiring revegetation] of the Administrative Code will be met.

ARP-53 was approved by the Division on September 8, 2004. Through this ARP, Peabody proposed to reclaim impoundment T-19 by the standard "drain and cover" method, meaning that the impoundment would be dewatered and that the exposed slurry would be covered with non-toxic material and revegetated. ARP-53 deviated from standard "drain and cover" reclamation, in that Peabody asked the Division to approve the application of two feet of non-toxic material, as opposed to the conventional four feet of material. This deviation was requested as very little resoiling material was available on the permit D-325 site for resoiling purposes. Therefore, Peabody would be required to go off-site, to "borrow" areas, in order to obtain the necessary resoiling material. By reducing the amount of cover from four feet to two feet, Peabody would disturb fewer off-site acres. ARP-53 suggested that Peabody would only need to affect 12 acres to obtain the necessary borrow material. However, Peabody asked for the flexibility to affect as many as 29.59 acres for this purpose. (See DMRM Ex. FF.)

Tri-State's appeal of ARP-53 challenges the Chief's decision to approve the ARP-53 reclamation plan, without first having pursued less destructive options. Tri-State suggests that a reduction in the size of T-19, as opposed to total removal of the structure, would allow for the destruction of fewer forested acres for the purpose of providing borrow material. However, Tri-State has failed to provide any evidence of a less destructive approach, which would still comply with the requirements of Ohio law.

Primarily, Tri-State suggests that the impact to borrow areas will be unnecessarily destructive to off-site areas. This argument fails to recognize that any borrow areas created for reclamation purposes must also be reclaimed. Thus, any harm to the environment, resulting from the creation of borrow areas, would be repaired.

Indeed, use of borrow material is not unusual on areas that were mined in the 1960's and 1970's.[10] The evidence also established that some resoiling material will be available on site (*i.e.*, material from the T-19 embankment would be available for resoiling purposes). (See DMRM EX. FF, p. 18.)

The Commission **FINDS** that the Chief's approval of ARP-53 is consistent with the reclamation requirements of Revised Code Chapter 1513, and was not arbitrary or capricious.

4. THE CHIEF DID NOT ACT ARBITRARILY, CAPRICIOUSLY OR IN A MANNER INCONSISTENT WITH LAW IN DISAPPROVING THE EXPERIMENTAL PRACTICE APPLICATION, ARP-54-EP, WHICH PROPOSED TO LEAVE TEMPORARY SLURRY IMPOUNDMENT T-19 AS A PERMANENT STRUCTURE AFTER RECLAMATION OF THE PERMIT D-325 AREA. THEREFORE, THE COMMISSION FINDS THAT THE CHIEF'S ISSUANCE OF CHIEF'S ORDER 7319 WAS PROPER AND SUPPORTED BY LAW. (RC-08-007)

[10] In 1982, following the passage of SMCRA in 1977, Ohio's mining law changed dramatically. Areas mined before this change in the law are often referred to as "pre-law" areas, which were mined at a time when operators were not required to save on-site resoiling materials for the purpose of reclamation.

Discussion: O.R.C. Chapter 1513 sets forth the standard methods of reclamation. For example, the standard means of reclaiming a temporary slurry impoundment requires that the structure be drained, covered with non-toxic material, and revegetated. However, under the general mining and reclamation law, there exists an opportunity for possible variance from typical reclamation practices.

O.R.C. §1513.36 provides for experimental practices, stating:

> In order to encourage advances in mining and reclamation practices or to allow post-mining land use for industrial, commercial, residential, agricultural, or public use, including recreational facilities, the chief of the division of mineral resources management, with approval by the secretary of the United States department of the interior, may authorize departures in individual cases on an experimental basis from the environmental performance standards set forth in this chapter.

(See also O.A.C. 1501:13-4-12(B).)

As noted *supra*, Ohio reclamation law requires the dewatering and reclamation of impoundment T-19. However, landowner Tri-State's interest in maintaining impoundment T-19 as a permanent structure, and Peabody's concurrence in this idea, motivated Peabody to file experimental practice applications, seeking the possible conversion of T-19 to a permanent structure.

The possibility of retaining impoundment T-19 as an experimental practice was discussed between Peabody and the Division as early as 1997. (See DMRM Ex. K.) The first experimental practice application (ARP-36-EP) was filed by Peabody in 1999, but was later withdrawn. Following the withdrawal of ARP-36-EP, Peabody returned to a more traditional "drain and cover" plan for T-19. However, with the encouragement of landowner Tri-State, Peabody filed a second experimental practice application in 2005 (ARP-54-EP). ARP-54-EP was denied by the Chief through the issuance of Chief's Order 7319. The denial of ARP-54-EP was later re-affirmed by the Chief after informal review. The denial of ARP-54-EP is the subject of Commission appeals **RC-08-007, RC-08-008 and RC-08-009**.

Consideration of an experimental practice application requires review of several distinct issues:

Issue: What is the role of the federal Office of Surface Mining relating to the Division Chief's review of an application for an experimental practice?

In approving an experimental practice, the Chief allows a variance from the standard requirements of Ohio's mining and reclamation laws. O.R.C. §1513.36, addressing experimental practices, provides:

> ... the chief of the division of mineral resources management, **with approval by the secretary of the United States department of the interior**, may authorize departures in individual cases on an experimental basis from the environmental performance standards set forth in this chapter.

(Emphasis added.)

An issue presented in this case was whether Tri-State, or Peabody, needed to obtain approval of OSM in order to establish the right to an experimental practice.

At hearing, OSM representative Dan Schrum testified that, per written OSM policy, the Division leads the review of an experimental practice application, and makes the initial determination on the application. OSM makes its decision on an experimental practice application when, and if, the Division **approves** such a practice. A decision by the Division to **deny** an experimental practice would not require OSM concurrence, or even its consideration. However, a decision **approving** an experimental practice would ultimately require OSM's concurrence. A decision by OSM on an experimental practice, which denies an application that was approved by the Division, would be appealable to a federal Administrative Law Judge at the Department of Interior. (See DMRM Ex. S, OSM Experimental Practices Directive.)

In this matter, the Division elected to conduct a joint review with OSM of ARP-54-EP. As the Division denied the application, concurrence by OSM was not officially sought or required.

The joint agency team assembled to review ARP-54-EP consisted of various persons from both the Division and OSM. The team included administrators, field staff, hydrologists and mining engineers from both agencies. On February 1, 2006, the review team conducted a site visit at impoundment T-19. The team members reviewed ARP-54-EP pursuant to their respective areas of knowledge and expertise. The culmination of this initial review was a deficiency letter, sent to Peabody on May 31, 2006. (See DMRM Ex. OO.)

Issue: What is the scope of the Chief's discretion in considering an application for an experimental practice?

The approval of an experimental practice is a discretionary determination by the state regulatory agency. Such approval is a matter specifically committed to agency discretion via the statutory language of O.R.C. §1513.36, which provides in pertinent part:

> ... the chief of the division of mineral resources management ... may authorize departures in individual cases on an experimental basis from the environmental performance standards set forth in this chapter.

(Emphasis added.)

The courts have long held that the use of the word "may" in a statute is generally construed to make the provision discretionary, optional or permissive. *Dorrian v. Scioto Conservancy Dist., 27 Ohio St.2d 102, 107; 271 N.E. 2d 834 (1971).* As experimental practices represent departures from the environmental standards set forth under Chapter 1513, it is particularly appropriate that the legislature has allowed the Chief a heighten level of discretion when considering such applications. Under O.R.C. §1513.36, the Division's action is committed to agency discretion by operation of law, thus confirming upon the Chief a broad discretion. *Dorrian v. Scioto Conservancy District, supra.*

When reviewing discretionary determinations, the standard of review is "abuse of discretion." The term "abuse of discretion" connotes more than just an error of law or judgment; it implies that the decision-maker's attitude is unreasonable, arbitrary or unconscionable. *Blakemore v. Blakemore, 5 Ohio St. 3d 217, 219, 450 N.E.2d 1140 (1983), quoting State v. Adams, 62 Ohio St. 2d 151, 157, 404 N.E. 2d 144 (1980).*

In this regard, the Commission must consider the Record developed at hearing to determine if a rational basis exists for the Chief's exercise of discretion in declining to approve Peabody's proposed experimental practices.

Issue: Based upon the evidence presented, did the Chief have a rational basis to deny ARP-54-EP?

In order to approve an experimental practice, O.R.C. §1513.36 requires the Division Chief to make certain specific findings, including:

> (A) The experimental practices are potentially more or at least as environmentally protective, during and after mining operations, as those required under this chapter [O.R.C. Chapter 1513] and rules adopted thereunder;
>
> * * *
>
> (C) The experimental practices do not reduce the protection afforded public health and safety below that provided under this chapter and the rules adopted thereunder.

Following extensive review, "Findings" were issued by the joint agency team, consisting of representatives from the Division and OSM. Among the major findings articulated by the team were the following:

> 1. The applicant [Peabody] has not demonstrated, and we do not believe it is likely they can demonstrate, that the potential for sink-hole subsidence to cause break-through of the impounded water and coal waste into the underground mine does not exist. This is supported by our review of mine maps indicating that overburden depth exists that is as little as 40 feet from the bottom of the slurry deposition to the top of the underground mine. Accepted engineering practice is that the risk of sink-hole subsidence is greatly increased where overburden depth is less than 100 feet.
>
> 2. The mine conditions indicated on the mine maps and other information indicate that the suggested minimum cover guidelines contained in U.S. Bureau of Mines guidelines IC 8741 for prevention of breakthrough do not exist below the impoundment. This further supports the increased risk of sink-hole subsidence.
>
> * * *

> 4. The impoundment is serving as a recharge area for the underground mine pool which is causing a surface discharge requiring treatment. The applicant has not sufficiently demonstrated the extent of the hydrologic connection between the impoundment water and the underground mine and its impact on the non-compliant discharge at the mine portal. The applicant has also not demonstrated how the non-compliant discharge will meet required effluent limits without treatment. ORC 1513 currently does not allow the Chief to approve bond releases on sties that require treatment of discharges not meeting effluent limits.

(See DMRM Ex. RR)

Based upon several findings, including those articulated above, the Chief, with the concurrence of OSM, concluded that:

> ... the applicant has not provided and is not likely to be able to provide, demonstrations required for approval of an experimental practice. Such demonstrations, among other things, must show that the proposed experimental practices is potentially more or at least as environmentally protective, during and mining operations as those practices required under [Chapter 1513] and rules adopted there under; and the experimental practice must not reduce the protection afforded public health and safety below that provided under [Chapter 1513] and rules adopted there under. The application has not shown that leaving the impoundment in place is no less protective than removing it.
>
> * * *
>
> The team's conclusion is also based on the risk of a breakthrough of the impounded water and coal slurry into the abandoned underground mine immediately below the impoundment due to mine subsidence or other failure of the strata between the bottom of the impoundment and the underground mine at anytime in the future. Such a breakthrough could cause potential discharge of this material from the underground mine portal(s).

(See DMRM Ex. TT)

The Chief, in his denial of the requested experimental practice, focused primarily upon the guidance provided by IC 8741. IC 8741 is a U.S. Bureau of Mines document, which recommends the engineering principles to be applied when mining occurs in close proximity to a

body of water. Based upon the entry width and entry height[11] utilized in the Sunnyhill deep mine, IC 8741 recommends a depth of cover of at least 125 feet between the bottom of the impoundment and the roof of the underground mine. There is no dispute that the depth of cover between portions of T-19 and the abandoned Sunnyhill deep mine is less than the amount recommended by IC 8741.[12] As an alternative, IC 8741 provides that, if a competent bed of sandstone, or similar material, is present within the solid strata separating the mine void from the impounded water, that solid strata must be at least 1.75 times the maximum entry width within the mine. In this case, that would require a solid sandstone bed at least 44 feet thick. It has not been proven that such a strata exists in the relevant areas.

Although IC 8741 allows for the consideration of site-specific conditions in determining the risks posed by the siting of an impoundment in an area that has been undermined, the variance from the IC 8741 guidelines is significant in this case. The Commission heard a great deal of evidence regarding site-specific conditions in the area of T-19. Tri-State has argued that the site-specific conditions should override the guidelines of IC 8741. However, Tri-State did not successfully establish that the retention of impoundment T-19 complies with the requirements of IC 8741. Nor did Tri-State prove that the site-specific conditions were such that reliance upon IC 8741 was not appropriate. Moreover, Tri-State did not establish that the Chief was arbitrary in his reliance upon the guidance of IC 8741 in making his discretionary decision to deny the experimental practice application.

Significantly, the testimony at hearing indicated that impoundment T-19 does not appear to have an outflow. Yet, the evidence also established that the south mine seal has been leaking for many years. As part of the joint agency review, the team determined:

> The impoundment is serving as a recharge area for the underground mine pool which is causing a surface discharge requiring treatment. The applicant has not sufficiently demonstrated the extent of the hydrologic connection between the impoundment water and the underground mine and its

[11] A coal "entry" in a room and pillar underground mine, is the area that has been mined out around a supporting pillar.

[12] The approximate depth of cover in the relevant area is: (1) eastern side of T-19, 65 – 130 feet; (2) northern side of T-19, 80 – 100 feet; and (3) western side of T-19, 40 – 130 feet. (Mastaller Testimony.)

> impact on the non-compliant discharge at the mine portal. The applicant has also not demonstrated how the non-compliance discharge will meet required effluent limits without treatment. ORC 1513 currently does not allow the Chief to approve bond releases on sites that require treatment of discharges not meeting effluent limits.

(See DMRM Ex. RR.)

Tri-State has not successfully refuted the Chief's finding of a possible hydrologic connection between the impounded water in T-19 and the abandoned underground mine. And, it appears that the discharge from the sealed south portal may be related to the existence of impounded water in T-19.

The testimony at hearing also established that, over the past 20 years, impoundment T-19 has experienced several problems of concern. There have been slips on the impoundment's embankment, the principal spillway system has collapsed, the water in the impoundment has turned acid, and the emergency spillway system has needed to be modified. Moreover, the impoundment does not contain the required lake drain, which could be utilized to immediately lower the water level in case of emergency. (Noonan Testimony; see O.A.C. §1501:21-13-06(A).) These problems are significant in light of the fact that the proposed experimental practice would require perpetual maintenance of this structure.

Based upon the evidence presented, and in light of the specific statutory grant of heightened discretion afforded to the Chief under O.R.C. §1513.36, the Commission **FINDS** that there is a rational basis for the Chief's denial of ARP-54-EP. The Commission further **FINDS** that Tri-State has failed to prove that the Chief abused his discretion in denying ARP-54-EP.

5. THE CHIEF DID NOT ACT ARBITRARILY, CAPRICIOUSLY OR IN A MANNER INCONSISTENT WITH LAW IN RE-AFFIRMING HIS DECISION TO DISAPPROVE EXPERIMENTAL PRACTICE APPLICATION ARP-54-EP AFTER CONDUCTING INFORMAL REVIEW OF THE ISSUANCE OF CHIEF'S ORDER 7319. THE CHIEF ALSO DID NOT ACT ARBITRARILY, CAPRICIOUSLY OR IN A MANNER INCONSISTENT WITH LAW IN REFUSING TO REOPEN THE INFORMAL REVIEW

PROCESS ON APRIL 9, 2008. THEREFORE, THE COMMISSION FINDS THAT THE CHIEF'S MARCH 13, 2008 DECISION AFTER INFORMAL REVIEW AND THE CHIEF'S APRIL 9, 2008 DECISION REFUSING TO REOPEN INFORMAL REVIEW WERE PROPER AND SUPPORTED BY LAW. (RC-08-008 & 009)

Discussion: O.R.C. §1513.13(A)(3) allows a person, who claimed to be adversely affected by a decision of the Division Chief, the opportunity for informal review of the Chief's decision prior to appeal to this Commission. The law provides that the Chief will conduct this informal review. O.R.C. §1513.13(A)(3) does not set forth a specific process to follow in informal review, and provides only:

> (3) Any person authorized under this section to appeal to the commission may request an informal review by the chief or the chief's designee by filing a written request with the chief within thirty days after a notice, order, decision, modification, vacation, or termination is served upon the person. Filing of the written request shall toll the time for appeal before the commission, but shall not operate as a stay of any order, notice of violation, or decision of the chief. The chief's determination of an informal review is appealable to the commission under this section.

In this matter, Tri-State requested that the Chief informally review his decision to deny ARP-54-EP. The evidence revealed that, on December 5, 2006, Tri-State requested informal review of Chief's Order 7319. (See Tri-State Ex. 12.) Tri-State indicated, in its request for informal review, that it was preparing to submit a new ARP with additional reclamation options for impoundment T-19. On June 19, 2007, the Division requested that Tri-State submit all additional data, reports and documents by July 1, 2007. On August 15, 2007, Tri-State submitted information to the Division, including a report on the mine seals at the Sunnyhill deep mine, an evaluation of two railroad tunnels in Perry County, a tailings stabilization plan, and a possible slurry fines recovery plan, involving New Energy USA (See Tri-State Ex. 41).

On March 13, 2008, after being considered for approximately 16 months in informal review, the Acting Chief issued his informal review findings, confirming the denial of ARP-54-EP. After the Chief's March 13, 2008 decision, Tri-State asked the Chief to reopen informal review. On April 9, 2008, the Acting Chief responded to this request as follows:

> In response to your request, and consistent with the position stated in my recent letter [of March 13, 2008]. The Division of Mineral Resources Management (DMRM) has decided to close the informal review of the Chief's Order denying Tri-State['']s experimental practice application. The DMRM will not extend this process.

Tri-State appealed both the Chief's March 13, 2008 decision, and his April 9, 2008 determination to close informal review, to the Reclamation Commission. Tri-State asserts that it has been denied a meaningful opportunity to be heard in the informal review process, because, among other items, the Chief failed to conduct promised meetings, failed to give serious consideration to alternative proposals for impoundment T-19, and then abruptly terminated the review process.

However, the facts reveal that informal review continued for approximately 16 months. Indeed, by March 2008, consideration of the experimental practice application had been ongoing for more than two years. And while open discussion of reclamation options may be helpful, such discussions must eventually develop into a formal and reviewable plan before the Chief can consider any suggested alternative reclamation project. Significantly, in its December 5, 2006 request for informal review, Tri-State pledged to submit a revised ARP addressing impoundment T-19 within one month. (See Tri-State Ex. 12.) This promised ARP never materialized. Notably, the Chief's termination of informal review does not foreclose Peabody from submitting future ARPs, even those that would propose alternative experimental practices.

During the informal review process, it appears that the Division, Tri-State and Peabody freely and frequently exchanged information and ideas relating to the reclamation or retention of impoundment T-19. Indeed, the 16-month informal review period provided abundant time and opportunity for the parties to discuss and develop plans for impoundment T-19.

The Commission **FINDS** that the Acting Chief's March 13, 2008 decision after informal review was not arbitrary, capricious or inconsistent with law. Moreover, the Commission **FINDS** that the Acting Chief's April 9, 2008 decision, after 16 months of informal review, to terminate the information review process was both reasonable and lawful.

6. DELAYS IN RECLAMATION.

Significantly, under Ohio coal mining law, reclamation of a site should commence once mining has been completed, and should proceed as "contemporaneously as practicable" with the conclusion of mining. Specifically, O.R.C. §1513.16(A)(15) requires a mine operator to:

> Ensure that all reclamation efforts proceed in an environmentally sound manner and as contemporaneously as practicable with the coal mining operations, ...

(Emphasis added.)

The four appeals before the Commission relate to a mining permit, which was issued in 1984 and expired in 1994. The preparation plant, that pumped slurry into impoundment T-19, ceased operations in 1990. Therefore, the Commission believes that the requirements to reclaim T-19, pursuant to permit D-325, existed as early as 1990.[13] Thus, about 20 years have passed since the reclamation of impoundment T-19 could have commenced.

The Commission's view is that there are multiple failures, which contributed to the delay in reclamation on this site. All of the parties to this appeal bear some responsibility for this significant delay. The impediments to timely reclamation appear to be, in part:

1. A failure on the Division's part to promptly enforce the contemporaneous reclamation requirements of Ohio law upon Peabody. This failure occurred despite numerous inspections, which would have been conducted by the Division during this period of delay.

2. Peabody's submission of several ARPs seeking to maintain T-19 as a permanent impoundment, which ARPs were either: (a) incomplete, (b) contrary to law, (c) did not include an experimental practice application, or (d) did not meet the requirements of the experimental practice requirements set forth in O.R.C. §1513.36. Between 1995 and 2005 six ARPs, proposing various plans for T-19 were submitted. Of these six ARPs, four were withdrawn.

[13] Reclamation of a mine site is performed in incremental stages. The Commission acknowledges that, as of 1992, when Peabody submitted its Year 8 Annual Map (DMRM Ex. A), reclamation of T-19 was not yet proposed by Peabody.

3. A failure on the Division's part and on Peabody's part to clearly identify, at an early stage in this process, what the critical factors were for determining whether an experimental practice application could be approved to retain T-19, and a failure to promptly address significant concerns in a meaningful manner. The depth of overburden was clearly the critical issue in this matter. This issue was initially raised by the Division in March of 2000. However, Peabody and Tri-State did not respond to this issue, in any meaningful way, until 2005, when geotechnical information was submitted as part of ARP-54-EP.

4. A delay by Tri-State in becoming involved in the experimental practice application process until after Peabody had abandoned its pursuit of experimental practice approval, and had received approval for a standard "drain and cover" reclamation plan for T-19. Tri-State came forward seven years after acquiring impoundment T-19, and submitted the most explicit application for an experimental practice application to date, with the purpose of seeking approval to maintain impoundment T-19 as a permanent structure. Had the type of application put forth by Tri-State in 2005 been submitted in 1998 (when Tri-State acquired this property), it is likely that the critical factors concerning experimental practices could have been clearly identified, thoroughly discussed, reviewed and decided more than a decade ago.

5. There were also significant delays in the necessary submissions and reviews of various plans and data. All three parties must take some responsibility for these delays. Specifically, the Division is responsible for a significant delay in identifying the critical issue relating to the retention of impoundment T-19 as a permanent structure. That critical issue is, unequivocally, the depth of overburden over the underground mine workings located beneath impoundment T-19. This issue was clearly critical to the Division's ultimate denial of the experimental practice application. Notably, the depth of overburden was a known factor, which has not changed since 1990. Thus, the depth of overburden issue should have been resolved many years ago. While there are several other requirements and

issues presented by an experimental practice application, such as special monitoring and emergency plans; many of these other issues could have, presumably, been worked out. Yet, the critical issue in this matter was unquestionably the depth of overburden. Failure of the parties to specifically seek out, and focus upon, this critical issue has prolonged this process dramatically.

Relative to this significant delay in reclamation, Mr. Owen testified that he received certain assurances from the Division before he agreed to purchase this property through Tri-State in 1998. Mr. Owen testified that he was assured by the Division that impoundment T-19 would be allowed to remain as permanent, in exchange for his performance of other reclamation activities. It is true that the Division was open to the submission of experimental practice applications, and that the Division did not, until very late in the process, firmly indicate its absolute opposition to the proposed retention of impoundment T-19. However, even assuming *arguendo* that such assurances were made, that does not change the fact that the Division can only act in accordance with the statutes regulating mining and reclamation. Moreover, the only means by which any change to an approved mining and reclamation plan can be properly considered by the Chief is through the submission and approval of a formal ARP meeting the criteria of Ohio law. Verbal assurances can not modify a reclamation plan.

Ultimately, the Chief identified the critical issue regarding the reclamation or retention of temporary slurry impoundment T-19 as the depth of overburden between the bottom of impoundment T-19 and the roof of the old Sunnyhill underground mine. In hindsight, a critical analysis of this most important aspect of the experimental practice should have been conducted early-on in this process. A determination should have been made identifying the most significant issue that needed to be resolved in order for an experimental practice to be approved. Notably, the depth of overburden was a constant, and did not change from the beginning of this process to the end of this process. By focusing upon this critical issue, rather than addressing the many extraneous issues brought forth at hearing, it appears that this matter could have been resolved many years ago. Either an acceptable plan could have been developed, or a firm determination that the Chief would not approve a plan to retain T-19 as a permanent impoundment could have been made. Reclamation of this structure, then, could have progressed in the timely manner anticipated by law.

ORDER

Based upon the findings of fact and conclusions of law, the Commission hereby **AFFIRMS** in full the Chief's approval of ARP-53, the Chief's disapproval of ARP-54-EP, as articulated in Chief's Order 7319, the Chief's March 13, 2008 decision after informal review and the Chief's April 9, 2008 decision to conclude informal review.

4/8/2010
DATE ISSUED

SEAN A. McCARTER
Chairman, Reclamation Commission

INSTRUCTIONS FOR APPEAL

This decision may be appealed to the Court of Appeals, within thirty days of its issuance, in accordance with Ohio Revised Code §1513.14 and Ohio Administrative Code §1513-3-22. If requested, copies of these sections of the law will be provided to you from the Reclamation Commission at no cost.

DISTRIBUTION:

Mark Stemm, Via FAX [614-227-2100] & Certified Mail 91 7108 2133 3936 6684 7571
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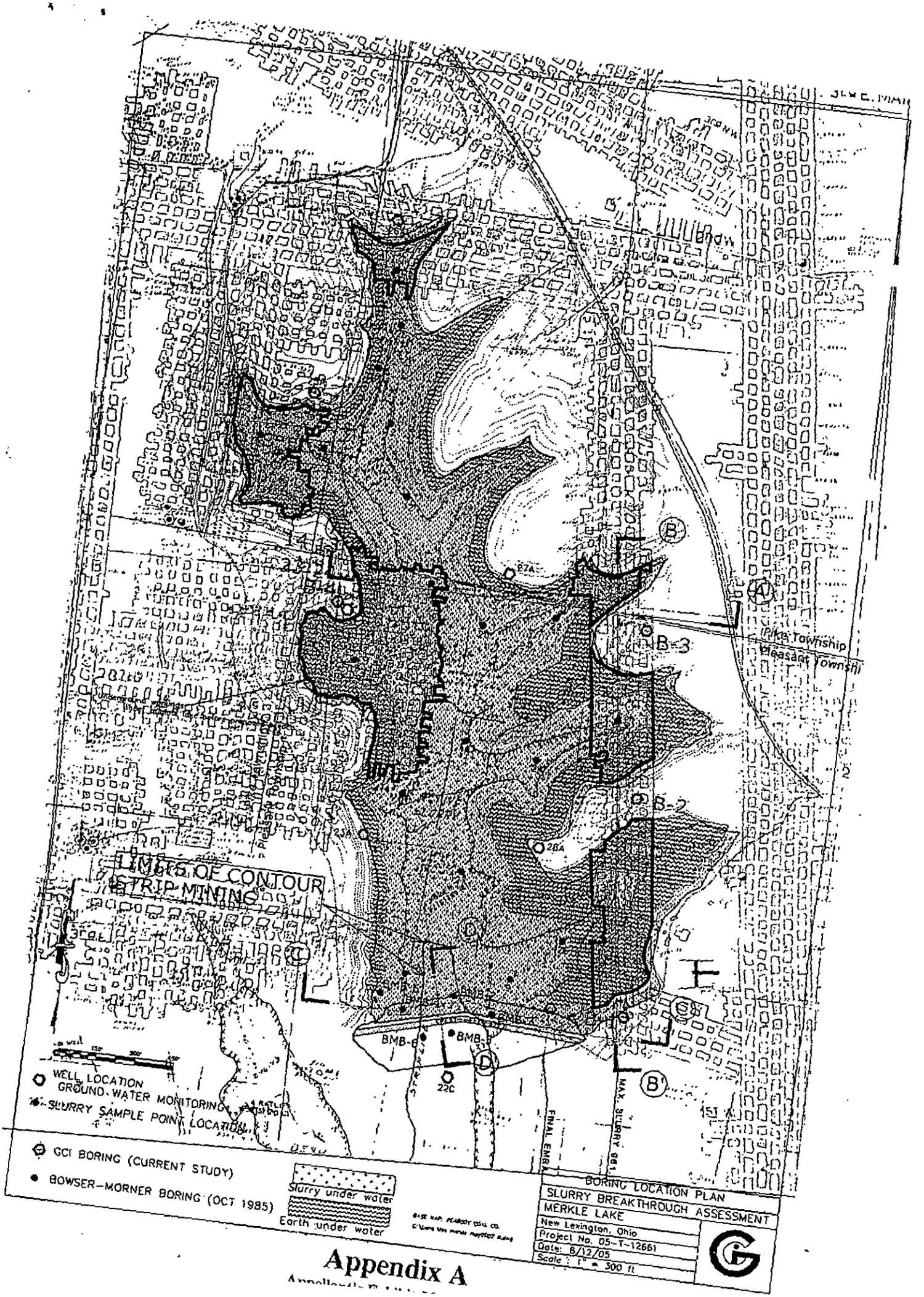
Michael B. Gardner, Via FAX [740-623-0365] & Certified Mail 91 7108 2133 3936 6684 7557
Eric B. Gallon, Via FAX [614-227-2100] & Regular Mail

Appendix A

Appellant's Exhibit 56* – reduced

***areas of T-19**
underlain by deep mine
highlighted by Commission


LIMITS OF CONTOUR STRIP MINING
B-3
B-2
BMB-6
BMB-5
22C
Pike Township
Pleasant Township
WELL LOCATION
GROUND-WATER MONITORING
SLURRY SAMPLE POINT LOCATION
GCI BORING (CURRENT STUDY)
BOWSER-MORNER BORING (OCT 1985)
Slurry under water
Earth under water
BORING LOCATION PLAN
SLURRY BREAKTHROUGH ASSESSMENT
MERKLE LAKE
New Lexington, Ohio
Project No. 05-T-12661
Date: 8/12/05
Scale: 1" = 300 ft

Appendix A

BEFORE THE
RECLAMATION COMMISSION

TRI-STATE RECLAMATION, LLC, Appellant, -vs- DIVISION OF MINERAL RESOURCES MANAGEMENT, Appellee, and PEABODY COAL COMPANY, OXFORD MINING COMPANY, Intervenors.	: : : : : : : : : : : : : : : : :	Case Nos. RC-04-030 RC-08-007 RC-08-008 RC-08-009 Approval of ARP R-325-53, Chief's Order 7319, Informal Conference Results, Chief's April 9, 2008 Decision; Permit D-325 (Peabody Coal) **INDEX OF EVIDENCE PRESENTED AT HEARING**

Before: Craig Porter.

In Attendance: Richard Babb, Richard Cappell[1], Sean McCarter, James McWilliams, Ray Rummell and Hearing Officer Linda Wilhelm Osterman.

Appearances: Mark Stemm, Counsel for Appellant Tri-State Reclamation, LLC; Mark G. Bonaventura, Molly Corey, Assistant Attorneys General, Counsel for Appellee Division of Mineral Resources Management; Bruce Cryder, Clay Larkin, Counsel for Intervenor Peabody Coal Company; Michael B. Gardner, Counsel for Limited Intervenor Oxford Mining Company.

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[1] The merit hearing in this matter commenced on February 4, 2009. Mr. Cappell was appointed to the Commission on March 27, 2009, and began attending the hearing on April 15, 2009 (on day 9 of a 16 day hearing). Although, Mr. Cappell attended a portion of the merit hearing, his vote was not necessary to a quorum, and he did not participate in the deliberations or the decision-making in these matters.

WITNESS INDEX

Appellant's Witnesses:

Chuck Owen	Direct Examination; Cross Examination; Recalled for questioning by Commission
John T. Kneen	Direct Examination; Cross Examination; Rebuttal; Sur-Rebuttal
Scott Kell	Direct Examination; Cross Examination
Kevin O'Connor, P.E., Ph.D	Direct Examination; Cross Examination; Rebuttal
Lonnie Wood	Direct Examination; Cross Examination
Kenton Cannon	Direct Examination; Cross Examination

Appellee's Witnesses:

Gary Green	Direct Examination; Cross Examination
Joe Noonan, P.E.	Direct Examination; Cross Examination; Sur-Rebuttal
Mike Dillman	Direct Examination; Cross Examination
Tom Mastellar	Direct Examination; Cross Examination
Dan Schrum	Direct Examination; Cross Examination
Dave Clark	Direct Examination; Cross Examination

Commission's Witnesses:

Lisa Morris	Called for questioning by Commission; Cross Examination

EXHIBIT INDEX

Commission's Exhibits:

NO.	DESCRIPTION	also marked as
1	Map, Partial Map, Sunnyhill No. 7 Mine (work plan to cut no. 2 room on the east side of the 3rd South into a room on the north side of the 1st SW), dated February 20, 1973	
2	Article, "An Update on the Scaled Span Concept for Dimensioning Surface Crown Pillars for New or Abandoned Mine Workings," by Carter (not dated)	
3	Article, "Subsidence Over the Mined-Out Pittsburgh Coal," by Bruhn, Magnuson & Gray (not dated)	

Appellant's Exhibits:

NO.	DESCRIPTION	also marked as
1	Photograph, Merkle Lake, Summer 2007 (cover of exhibit book)	
2	Four Photographs, Merkle Lake, wildlife, taken in 2005	
3	Letter, dated August 28, 1990, McGarvie to Baker	
4	Letter, dated October 8, 1998, Baker to McGarvie	Division Exhibit O
5	Letter, dated December 20, 2000, Sponsler to Kneen	Division Exhibit U
6	Letter, dated January 4, 2002, Sponsler to McGarvie	Division Exhibit X
7	Letter, dated September 24, 2004, Sponsler to Snider & Owen	Division Exhibit LL
8	Letter, dated May 13, 2005, Speck to Householder	
9	E-mail, dated May 31, 2006, McGarvie to Conner & Stemm, with attached letter, dated May 31, 2006, Tugend to McGarvie (experimental practice revision letter)	
10	Letter, dated August 31, 2006, Stemm to Tugend (re: additional drilling)	
11	Letter, dated September 26, 2006, Stemm to Schrum (re: additional Drilling)	
12	Letter, dated December 5, 2006, Stemm to Kell, with attachments, requesting informal conference	
13	E-mail, dated April 9, 2008, Kell to Stemm, denying request for extension of informal review	
15	Report, Potential for Mine Blow-Out, Sunnyhill Mine Slurry Injection Project, Perry County, Ohio, Report No. 28699-985-461, dated September 24, 1985, Bowser-Morner Associates	

NO.	DESCRIPTION	also marked as
16	Map, Coal Contours, dated September 10, 1985, Slurry Reinjection Project, Sunnyhill Mine	attachment to Exhibit 15
17	Report, Additional Evaluation for Sunnyhill Mine Potential Mine Blow-Out, Perry County, Ohio, Engineering Report No. 28829-1285-617-R, Bowser-Morner Associates, dated December 20, 1985 (mine plug stability analysis)	
18	Memo, dated October 30, 1997, Kneen to Allen, McGarvie & Turner (re: site view)	
19	**Application to Revise Permit D-0325**, Year 10, Merkle Lake (T-19) Experimental Practice, **ARP R-0325-36**, dated July 31, 2000, submitted August 10, 2000	part of Division Exhibit T
20	Letter, dated September 29, 2004, Rieger to Sponsler (re: wetlands), with attachment	
21	Letter, dated October 25, 2005, McGarvie to Green, with attached **Application to Revise Permit D-0325**, Year 10, Merkle Lake (T-19), Experimental Practice, **ARP R-0325-54**, dated October 18, 2005	included in Division Exhibit MM
22	Letter, dated June 19, 2007, Kell to Stemm (re: informal conference / meeting)	
23	Curriculum Vitae of Kevin M. O'Connor, P.E., Ph.D	
24	Article, "Using GIS and Numerical Modeling to Assess Subsidence Over Abandoned Mines," by O'Connor, Siekmeier & Stache (1996)	
25	Report, Subsurface Exploration and Engineering Report, Slurry Breakthrough Assessment, Merkle Lake, GCI Project #05-T-12661, Geotechnical Consultants, dated September 14, 2005	attached to Division Exhibit MM
26	Report, "Evaluation of Potential for Impoundment Breakthrough Into Underground Mine Workings," by Division & OSM, dated November 2003	attached to Division Exhibit HH
27	Procedure Instruction Letter No. 199-V-3, by Lawless & Elam (MSHA) (effective December 1, 1997 through March 31, 2001)	
28	Figure, Summary of Crown Pillar Case Records, Figure 6.4, dated February 14, 1990, from Golder Associates Ltd., Crown Pillar Stability Back-Analysis (April 1990) (O'Connor)	
29	Letter, dated August 2, 2007, O'Connor to Owen, GCI Seal Safety Factor Analysis, with attachments	EXHIBIT 15 IS AN attachment
30	Report, Tunnel Observations – Overburden Rock Mass Conditions, Slurry Breakthrough Assessment, Merkle Lake, GCI Project #05-T-12661, Geotechnical Consultant, dated August 2, 2007	
31	Article, "Site-Specific Study on Stabilization of Acid-Generating Mine Tailings Using Coal Fly Ash," by Shang, Wang, Kovac & Fyfe, 2006	

NO.	DESCRIPTION	also marked as
32	Memo, dated August 10, 2007, O'Connor to Owen, Summary of Alternative Treatment of Tailings [Feb 2007]	
33	Report to Congress, Responses to Recommendations in the National Research Council's Report, Coal Waste Impoundments: Risks, Responses, and Alternatives, dated August 15, 2003, by MSHA & OSM	
34	Map, Stabilization Areas, dated November 21, 2006	
35	Diagram, Tailing Stabilization Area "B," dated November 20, 2006	
36	Diagram, Deformation of Stabilized Tailings Mat, dated February 6, 2007	
37	Letter, dated April 26, 2007, Rieger to Kell, with attached Review Findings, Application to Revise R-325-54, experimental practice	attachment is Division Exhibit RR
38	Map, Geologic Map of Perry County, 1948	
39	Letter, dated October 16, 2006, Schrum to Stemm	
40	Letter, dated December 27, 2006, McGarvie to Kell, with attached Unified Hydrologic Assessment and Proposal of Closure Options, Dated December 19, 2006 (assessment in separate notebook)	portion of attachment is Division Exhibit UU
41	Letter, dated August 15, 2007, Stemm to Kell (re: Informal Review Requested by Tri-State Reclamation, LLC), with attachments	
42	Timeline, Sequence of Permitting for Merkle Lake (T-19) & Bert's Pond (T-3)	
43	Memo, dated April 29, 1997, Kneen to Turner, Paxton & McGarvie (re: Merkle/Burts Pond Retention ARP)	
44	Hand-Written Chart, Rock Mass Rating (O'Connor)	
45	Map, old 5 foot contour map	
46	Map, old 5 foot contour map	
47	Map, old 5 foot contour map	
48	Map, old 5 foot contour map	
49	Diagram, Cross Section A-A', Soil Profile, corrected, Geotechnical Consultants, August 2005	part of Exhibit 25
50	Diagram, Cross Section B-B', Soil Profile, Geotechnical Consultants, August 2005	part of Exhibit 25
51	Core Sample, Boring B-4, 86.5 feet to 96.5 feet	pictured in Exhibit 25
52	Core Sample, Boring B-4, 96.5 feet to 103.5 feet	pictured in Exhibit 25
53	Hand Drawing, Pillars (O'Connor)	
54	Hand Drawing, Crown Pillar (O'Connor)	
55	Hand Drawing, Safety Factors / Tensile Strength of Rock (O'Connor)	
56	Map, Boring Location Plan, dated August 12, 2005	part of Exhibit 25
57	Hand Drawing, Comparison of Martin County to Merkle Lake (O'Connor)	

NO.	DESCRIPTION	also marked as
58	Letter, dated October 21, 2005, McGarvie to Dillman, with attachments, including Responses to ODNR Requests for Additional Information	
59	Letter, dated October 26, 2006, Tugend to McGarvie (re: Request to Terminate Order by the Chief #7310)	
60	Report, Soil Study for Sunnyhill Mine Site, Merkle Dam, Report No. 28727-286-148, Bowser-Morner Associates, dated February 3, 1986	
61	E-mail, dated March 31, 2008, Stemm to Kell (re: meeting, with a portion of the Report to Congress attached)	Report to Congress is Exhibit 33
62	Division Inspection Report, dated December 5, 1997	
63	Division Inspection Report, dated January 5, 1998	
64	Division Inspection Report, dated July 7, 1998	
65	Two Photographs, outcrop of sandstone, Merkle Lake, taken March 30, 2009	
66	Two Photographs, western side of Merkle Lake, taken March 30, 2009	
67	Photograph, northwest corner of Merkle Lake, taken March 30, 2009	
68	Photograph, east side of Merkle Lake, taken March 30, 2009	
69	Letter, dated January 28, 1985, D. Kneen to Mamone	
70	Report, "Sampling in Observation Well 2B," GCI Project #05-T-12661, Geotechnical Consultants, dated June 16, 2009	
71	Map, Locations of Injection Sumps #1 & #2, Relief Wells #1 & #2, Observation Wells #2, #3 & #4	
72	Map, Mine Voids Backfilled with Slurry from Injection Sumps #1 & #2, close-up sections A, B & C	close-up of Exhibit 73
73	Map, Mine Voids Backfilled with Slurry from Injection Sumps #1 & #2	
74	Data, Observation Well 2B	
75	Hand-Drawn Diagram, Monitoring Well (Kneen)	
76	Article, "Classification of Mine-Related Subsidence East of the Mississippi River," by Craft (approximately 1992)	
77	Spreadsheet, Span Distances	
78	Diagram, Cross Section A-A', Spoil Profile, with O'Connor's markings and notations	based on Exhibit 49, part of Exhibit 25
79	Diagram, Cross Section B-B', Spoil Profile, with O'Connor's markings and notations	based on Exhibit 50, part of Exhibit 25
80	Hand-Drawing, Dry Monitoring Well (O'Connor)	
81	Hand-Drawing, Stoppings & Bulkheads (O'Connor)	
82	Drill Logs, nine holes, 1984	
83	Drill Logs, nineteen holes, with map excerpts, 1970, 1984, 1985, 1986	attachment to Exhibit 88

NO.	DESCRIPTION	also marked as
84	Letter, dated September 19, 1985, Spaulding to Stein, with attached drill logs for injection holes at sump # 1	logs are also part of Exhibit 83
85	Letter, dated November 1, 1985, Hedges to Preston, with attached drill logs for injection holes at sump # 2	logs are also part of Exhibit 83
86	Letter, dated January 14, 1986, Spaulding to Preston, with attached drill logs for injection holes at sump # 3	logs are also part of Exhibit 83
87	Map, Boring Location Plan, dated July 20, 2009	
88	Report, Additional Drill Logs and Expanded Cross Sections, GCI Project #05-T-12661, Geotechnical Consultants, dated July 28, 2009	attachments are Exhibits 83, 89, 90 & 91
89	Diagram, Expanded Cross Section A-A', Geotechnical Consultants, July 2009	reduced version attached to Exhibit 88
90	Diagram, Expanded Cross Section B-B', Geotechnical Consultants, July 2009	reduced version attached to Exhibit 88
91	Diagram, Cross Section E-E', Geotechnical Consultants, July 2009	reduced version attached to Exhibit 88
92	Spreadsheet, Span Distances	
93	Hand-Drawn Diagram, Span Distances Profile (O-Connor)	taken from Exhibit 92
94	Preface to Engineering and Design Manual, Coal Refuse Disposal Facilities, U.S. Department of Labor, MSHA, Second Edition 2009, pp. iii – vi	preface to Division Exhibit UUU excerpt

Appellee's Exhibits:

NO.	DESCRIPTION	also marked as
A	Map, Underground Annual Map, Year 8, permit D-0325, dated June 1, 1992	
B	Map, Underground Application Map, Permit D-0325, dated January 15, 1986	
C	Permit, Portions of Permit D-0325-4, approved October 9, 1986	
D	Annual / Final Report, Years 1 through 10, Permit D-0325, dated December 30, 1994	
E	Map, Sunnyhill No. 7 Final Underground Mine Map, dated August 9, 1973	
F	Letter, dated November 26, 1973, Kidd to Gatti (re: sealing of openings to abandoned underground mines)	
G	Accident Investigation Report, Noninjury Mine Inundation Accident (water), Sunnyhill #9 South Mine (Allen Lake Inundation), dated June 2, 1989, by Harper (MSHA)	

NO.	DESCRIPTION	also marked as
H	Letter, dated August 23, 1995, Evans to Arnold, with attached **Application to Revise Permit D-0325**	
I	Fax, dated May 1, 1997, Kneen to Arnold or Burwell (re: withdrawal of Application to Revise D-325)	
J	Memo, Division Inter-Office Communication, dated May 5, 1997, Sterling to Arnold (re: Peabody Slurry Impoundment)	
K	Letter, dated July 21, 1997, McGarvie to Morris (re: Application to Revise Permit D-0325, Year 10, to Permanently Retain Merkle Lake and Berts Pond)	
L	Letter, dated August 12, 1997, Morris to McGarvie	
M	Letter, dated October 9, 1997, McGarvie to Arnold, with attached **Application to Revise Permit D-0325** (no number), with Site Characterization & Reclamation Plan for Merkle Lake & Bert's Pond, submitted October 22, 1997	
N	Inspection Report, Mine-Site Evaluation Inspection Report, Permit D-0325, inspection date October 30, 1997, dated November 3, 1997, by Schrum (OSM)	
O	Letter, dated October 8, 1998, Baker to McGarvie	Tri-State Exhibit 4
P	Amended and Restated Contract To Sell Real Estate ("Contract"), dated December 16, 1998, between Peabody and Tri-State Reclamation	
Q	Letter, dated January 25, 1999, with attached **Application to Revise Permit D-0325,** (no number) (eventually to be known as ARP-0325-36)	
R	Letter, dated February 11, 1999, Kneen to Arnold (withdrawing 1997 ARP)	
S	Letter, dated March 9, 2000, Rieger to Reed, with attached 30 CFR 785.13 & Directive on Experimental Practices, dated April 24, 1992	
T	Letter, dated August 10, 2000, McGarvie to Stiteler, with attached **Revised Application to Revise Permit D-0325**, Year 10, Merkle Lake (T-19), Experimental Practice, **R-0325-36**, dated July 31, 2000	included in Tri-State Exhibit 19
U	Letter, dated December 20, 2000, Sponsler to Kneen	Tri-State Exhibit 5
V	Report, Criteria for Evaluating the Potential for Impoundment Leaks into Underground Mines (Existing & Proposed Impoundments), dated July 2001, OSM, with attached Information Circular 8741, Results of Research to Develop Guidelines for Mining Near Surface & Underground Bodies of Water, by Babcock & Hooker, (Bureau of Mines, 1977)	
W	Inspection Report, Mine Site Evaluation, inspection date October 23, 2001, dated October 23, 2001, by Schrum (OSM)	
X	Letter, dated January 4, 2002, Sponsler to McGarvie	Tri-State Exhibit 6
Y	Letter, dated January 24, 2002, McGarvie to Owen	

NO.	DESCRIPTION	also marked as
Z	Letter, dated March 15, 2002, McGarvie to Sponsler, with attached letter, dated January 4, 2002, Sponsler to McGarvie	attachment is Tri-State Exhibit 6 & Division Exhibit X
AA	Letter, dated October 29, 2003, Knasel to Peabody, with attached letter, dated June 4, 2002, McGarvie to Green, including **Application to Revise Permit D-0325, R-0325-51(withdrawn)**, dated June 4, 2002	attachment is part of Division Exhibit BB
BB	Letter, dated July 9, 2002, Knasel to McGarvie, with attached letter, dated June 4, 2002, McGarvie to Green	attachment is part of Division Exhibit AA
CC	Letter, dated December 9, 2002, Knasel to McGarvie (revision letter, ARP-R-325-51)	
DD	Letter, dated February 17, 2003, McGarvie to Knasel (re: request to modify ARP R-325-51)	
EE	Letter, dated February 17, 2003, Allen to Owen	
FF	**Application to Revise a Coal Mining Permit, Permit D-0325, R-0325-53**, dated April 13, 2004, approved September 8, 2004	
GG	Letter, May 19, 2003, McGarvie to Knasel (re: modified ARP R-325-51)	
HH	Letter, dated March 4, 2004, Rieger to Sponsler, with attached Report, Review of Ohio's Requirements & Their Implementation Regarding MSHA-Class Impoundments in Proximity to Underground Mines, by Division & OSM, dated March 2004, and with attached Report, Evaluation of Potential for Impoundment Breakthrough into Underground Mine Workings, by Division & OSM, dated November 2003	attachments include Tri-State Exhibit 26
II	Letter, dated March 10, 2004, McGarvie to Sponsler, with attached Emergency Action Plan, dated March 5, 2004	
JJ	E-mail, dated July 14, 2004, Barnitz to Hines (re: Emergency Action Plan)	
KK	Permit, Coal Mining & Reclamation Permit, **Application R-325-53**, approved September 8, 2004	
LL	Letter, dated September 2004, Sponsler to Snider & Owen	Tri-State Exhibit 7
MM	**Revised Application to Revise Permit D-0325, R-0325-54**, Experimental Practice, dated October 18, 2005 with attachments, including Report, Subsurface Exploration & Engineering Report, Slurry Breakthrough Assessment, Geotechnical Consultants, dated September 14, 2005	includes portions of Tri State Exhibit 21, and Tri-State Exhibit 25
NN	Letter, dated November 21, 2005, Tugend to Rieger	
OO	Letter, dated May 31, 2006,Tugend to McGarvie (deficiency letter, re: ARP R-325-54)	
PP	E-mail, dated October 6, 2006, Tugend to Schrum, with forwarded e-mail, dated September 28, 2006, Schrum to Tugend, Noonan & Emmons	

NO.	DESCRIPTION	also marked as
QQ	E-mail, dated October 4, 2006, Tugend to Clark	
RR	Review Findings, Application to Revise R-325-54, Request for Experimental Practice	attached to Tri-State Exhibit 37
SS	Letter, dated October 30, 2006, Taitt to Tugend	
TT	Chief's Order 7319, issued November 6, 2006	
UU	Portion of Unified Hydrologic Assessment and Proposal of Closure Options, Peabody Coal Company, dated December 19, 2006	portion of Tri-State Exhibit 40
VV	Letter, dated March 13, 2008, Kell to Stemm	
WW	Diagram, Cross Section of Slurry Impoundment T-19, Section A-A' (Mastaller)	
XX	Map, Areas of Mine Workings Beneath Slurry Impoundment T-19 with 100 Foot Cover Contour (Mastaller)	
YY	Map, USGS, Division of Geologic Survey New Lexington Quadrangle, 1961	
ZZ	Portion of SME Mining Engineering Handbook, 2nd Edition, Volume 1	
AAA	Ten Photographs of Subsidence, including, Underwood Subsidence (two photos), John Harman Subsidence (two photos), Allison Subsidence (two photos), Hyke's Pond Subsidence (three photos), Abandoned Mine Land Development Guide (cover - one photo)	
BBB	Diagram, Diagrammatic Cross Section of Typical Subsidence Resulting from Mine-Roof Collapse, Pothole Subsidence	
CCC	Curriculum Vitae of Tom Mastaller	
DDD	Curriculum Vitae of Joe Noonan, P.E.	
EEE	Curriculum Vitae of Mike Dillman	
FFF	Maps, Perry County Auditor Tax Maps (three), dated March 19, 2007	
GGG	Guidance for Evaluation the Potential for Breakthroughs from Impoundments Into Underground Mine Workings & Breakthrough Prevention Measures, dated December 18, 2002, revised May 15, 2003 (MSHA, OSM, Kentucky, Pennsylvania, Virginia, West Virginia)	
HHH	Photograph, location of railroad tracks, south portal area, taken December 9, 2008	
III	Timeline, Applications to Revise	
JJJ	Three Photographs, highwall in vicinity of north portal, taken February 23, 2009	
KKK	Five Photographs, southern highwall, taken February 23, 2009	
LLL	Two Photographs, highwall at permit D-1086, taken February 23, 2009	
MMM	Hand Drawing, High Extraction Areas (Noonan)	

NO.	DESCRIPTION	also marked as
NNN	Single Page of Application D-325- 4, Soil Logs, Borings # A, B,C, D, E, F, G & H, with Soil Sample Sites Map, dated September 12, 1986	
OOO	Portion of Application D-325-4 Addressing Soils, Summary of Test Pits Logs, Soil Logs, Laboratory Reports (Permeability & Classification of Three Soil Samples, 1986), Engineers Field Boring Log (Boring B-4, 2005)	
RRR	Map, Coal Contour Map, Slurry Reinjection Project, Injection Sumps Marked; 1985	
SSS	E-Mail, dated July 30, 1993, Evans to McGarvie (re: water elevations)	
TTT	Letter, dated April 1, 1985, Spaulding to Dewey, with attached revised Applications for Permit to Install, Permits to Drill and Permits to Operate a proposed underground injection project at Sunnyhill Mine	
UUU	Excerpt from Engineering and Design Manual, Coal Refuse Disposal Facilities, U.S. Department of Labor, MSHA, Second Edition, 2009, pp. 8-15 to 8-18	preface to this document marked as Tri-State Exhibit 94
VVV	Review of GCI Slurry Breakthrough Assessment, Temporary Impoundment T-19, Noonan	
WWW	Map, Locations of Injection Sumps #1 & #2, Relief Wells #1 & #2, Observation Wells #2, #3 & #4, with possible mine stoppings and obstructions marked by Noonan	oversized version of Tri-State Exhibit 71
XXX	Hand-Drawn Diagram, Injection Flow Velocity (Noonan)	