

Section One: An Overview to the Report

Problem Statement

1. On Tuesday, October 11, 2000 at midnight, a coal company employee for Martin County Coal, a subsidiary of Massey Energy (MCCC-Massey) is working the belt near the west mine portal. He notices that the belt has stopped. Based on events documented in another report, the employee radios the dispatcher to report his observation.¹
2. Company employees then travel to the north mine portal and on arrival observe slurry flowing out of the drift opening at a high velocity. They report their findings to the radio dispatcher. According to the next set of reported events, company employees travel next to a south mine portal. They observe slurry flowing out of the south opening at an even higher velocity.
3. By 2:00 in the morning, based on reported events, dozer operators are brought to the impoundment. They begin pushing materials (soil and rock) into the impounding area where the breakthrough has occurred.
4. An hour later at 3:00 a.m. the company safety manager calls the supervisor of the Mine Safety Health Administration (MSHA) field office. He reports a breakthrough of slurry from the Big Branch Coal Waste Impoundment. The company safety manager also reports that slurry has flowed out of the north and south portals and into the waters of Coldwater Fork and Wolf Creek.
5. By 3:30 a.m. the Company notifies the Emergency Services Director for Martin County of the incident. After contacting local emergency personnel, the Company contacts the Kentucky Division of Emergency Management. The Kentucky Division of Emergency Management calls the on duty officer for the Kentucky Division of Water (DOW). The DOW discharges an Environmental Response Team to the site.

Meanwhile, Martin County citizens living on Coldwater and Wolf Creek are unaware of the activity and communications between company and agency people that is occurring through the early morning hours. They are unaware that there has been a massive release of slurry and sludge materials that have ruptured through the bottom of the 72-acre coal waste impoundment upstream from their homes and properties. Citizens on Cold Water and Wolf Creek will comment on these events in their later interviews with our project team. Some citizens will be openly hostile to the fact that residents living downstream were never notified of the impending disaster upstream. Several area citizens in later interviews would comment,²

- No one had notified anyone downstream that this was coming and at that time it wasn't even down here. It was just in the process of coming. And at their security check up there at the county road crossing it was about 10 ft. deep there at the time. But you know it was just like a big, gooey glob. It was a whole lot like watching lava. You know the flow of it and it just kept accumulating deeper and deeper. But this has been one of my biggest concerns since the spill happened, is that no one notified anyone downstream that it was coming. No warning, absolutely no warning, at any time! And during one of the community meetings I asked [the coal company president] as to why and who made that decision and he said he made that decision. I don't want [the coal company president] making that decision with my life and my family's life you know...but that was their answer to it. They made that decision.
- I feel that the minute the coal company knew that it happened they should have come down Wolf Creek and where I live warning the people.
- We first learned –just by people in the area – that the impoundment had failed. And that is why of a lot of people in this area –people are kind of angered. The fact that you had 300 million gallons of slurry that came out of this impoundment. MCCC could not have known it could break into two watersheds. It could have easily broken, all out into Coldwater or all out into Wolf Creek. [...] All these homes in the area near the streams would have been taken out.

¹ The events chronology reported in this section are taken from: United States Department of Labor. Mine Safety and Health Administration Coal Mine Safety and Health. (October 17, 2001) Report of Investigation. Surface Impoundment Facility Underground Coal Mine. Non-Injury Impoundment Failure/ Mine Inundation Accident. Pp.3-5.

² February. 2001. Field Interviews.

After the Martin County coal waste spill of October 2000, a series of agency reports were produced that address vital aspects of impoundment safety, impoundment regulations and agency enforcement over coal waste impoundments. These reports are summarized below in the following footnote³ for the reader's benefit and reference. Several of these reports speak to emergency preparedness and notification procedures for communities living downstream from coal waste impoundments. Because impoundment regulations, enforcement and safety issues have been covered elsewhere in these other reports, this report focuses less on impoundment risk, stability and safety issues.⁴ Rather, this report focuses more on the after effects of the spill on Martin County. Specifically, this report focuses more on the social and environmental impact of the spill on community and civic life in Martin County. Unlike other agency reports that have been produced since the Martin County coal waste spill, this report does not focus on the impoundment, rather on the impacted community. Unlike other reports, the following report is a community impact report that documents the impact of the October disaster on life among citizens in Martin County, Kentucky.

A Community Impact Report

The Martin County coal waste spill appears to have had a significant impact on the local environment and subsequently, on the local community. However, there persists debate between citizens and agencies on the extent to which the impact of the spill will have chronic long-term impacts. This report attempts to document that debate. In assessing the community impact of the spill, the following report addresses water treatment issues, water quality testing and monitoring and cleanup and reclamation activities as reported by both agencies and the local citizenry. By addressing issues of water treatment, water quality monitoring and reclamation, this report attempts to outline some of the issues that still confront the community since the spill.

As the next section on *Research Design and Project Methodology* will explain, this social impact report takes a community-based research (CBR) approach. That is, this project report attempts to understand the impact of the coal waste spill on life in Martin County from the perspective of the local citizenry. In understanding the citizens' perspective, it is also important to note that this project employs traditional scientific research methodologies. These methods are explained in the following section. Based on our methods, this report will show that many citizens have expressed concerns over water treatment and water quality as well as cleanup and reclamation plans. Thus, with a report focus on environmental issues that confront the county, from a citizens' perspective, this report will provide some insight into the impact of the coal waste disaster on community and civic life in Martin County.

³ See for example:

1. Triad Engineering, Inc. (March 2001) Subsurface Investigation Big Branch Slurry Impoundment Martin County, Kentucky. Triad Project No. C 00553 Submitted to: United States Department of Labor Mine Safety and Health Administration. Available online: <http://www.msha.gov/impoundments/martincounty/triad.pdf>
2. United States Department of Labor. Mine Safety and Health Administration Coal Mine Safety and Health. (October 17, 2001) Report of Investigation. Surface Impoundment Facility Underground Coal Mine. Non-Injury Impoundment Failure/ Mine Inundation Accident. Available online: <http://www.msha.gov/impoundments/martincounty/martincounty.pdf>
3. National Research Council. (October 2001.) Coal Waste Impoundments: Risks, Responses and Alternatives. (Prepublication Copy) Washington D.C. National Academy Press. Available online: <http://www.nap.edu/books/030908251X/html/>
4. United States Department of Interior. Office of Surface Mining. (March 2002). Report on October 2000 Breakthrough at the Big Branch Slurry Impoundment. Available online: <http://www.osmre.gov/martincounty030402.htm>

⁴ Though this report will focus on the environmental and social impact of the spill, our university team has also collected information on impoundment safety regulations and emergency preparedness. For example, our survey results report that 94 % of Martin County citizens strongly agree (58%) or agree (36%) that the coal company should provide the community with an emergency safety plan. Likewise, in Perry County, a similar 91 % of citizens strongly agree (33%) or agree (58%) with the need for emergency preparedness plans to protect communities downstream from coal waste impoundments. Upon request, our project team could readily provide a supplementary report to the Kentucky Appalachian Commission, Department for Local Government and the Office of the Governor on emergency response and preparedness, based on field interviews and survey responses and other primary source documentation that we have collected since being in the field in Martin County.

Background to the Project Prior to Flex-E-Grant Funding

Our research team at Eastern Kentucky University has been in the field in Martin County since the October 2000 coal waste disaster. For the reader's quick review, we provide a timeline of our research efforts in Martin County. The timeline is summarized below. These stages are discussed more fully in the section on *Research Design and Methodology*.

1. October 11, 2000 Big Branch Impoundment ruptures at bottom break points and slurry and coal waste empty into two local watersheds: Wolf Creek and Coldwater Creek

2. Early November 2000, our university field team conducts initial site visits to Martin County and establishes key contacts with local citizens.

3. Mid November 2000, our team sets up formal meetings with key contact persons in the community and with spokespersons for MCCC-Massey. Our project team also begins to explore funding opportunities to finance our field research in Martin County.

4. Mid December 2000, our team receives internal university grant support from Eastern Kentucky University to begin our field efforts in Martin County.

5. In early January 2001, our team establishes a field course and recruits over 20 upper-division university students as members of our research team. This team will begin a social impact of assessment of the impact of the coal waste spill on community and civic life in Martin County.

6. End of February 2001, our university field team completes intensive field interviews with over thirty Martin County citizens.

7. Mid March 2001, our university field team conducts a systematic residential survey of Martin County citizen views since the October 2000 coal waste spill. Our team collects 290 surveys (response rate =62%).

8. End of April 2001, Our team reports the results of the social impact survey to citizens at the Sheldon Clark High School, Martin County

9. Mid May 2001, our team begins to survey areas of Perry County as our identified control community site.

10. June 2001, our university team applies for outside *Flex-E-Grant* funding through the Kentucky Appalachian Commission, Department of Local of Government and the Governor's Office.

A Proposal to Evaluate Civic Capacity since the Disaster

In June of 2001, approximately eight months after the start of our project efforts in Martin County, our team at Eastern Kentucky University submitted a proposal to the Kentucky Appalachian Commission, the Department for Local Government and the Office of the Governor under the *Flex-E-Grant* program initiative. In our submitted proposal, our university team sought funding to stay in the field in Martin and Perry County. In accordance with the charges outlined in the Flex-E-Grant initiative, we proposed to address specific issues of ‘civic capacity’ in our social impact assessment.

In our *Flex-E-Grant* proposal, we stated that we would address civic capacity issues at two levels:

1. First, we would complete our survey, interviews and field research. With our research complete, we argued, we would be in a position to empirically compare and contrast civic issues and civic concerns in both Martin and Perry County. This comparison and contrast, we argued, would allow us to understand and explain differences in civic capacity across two coal economies. In our submitted proposal to the *Flex-E-Grant* program, we argued that Perry County would serve as our “control community” and that this comparative analysis between sites, would allow our project team to objectively evaluate the impact that the coal waste disaster might have had on civic life and civic capacity in Martin County.
2. Second, we proposed to develop a series of recommendations on improving civic capacity in Martin County. In accordance with our community based research design, we proposed to develop this set of recommendations in close consultation with a citizen advisory committee. On this dimension, we requested funding to establish an advisory committee of area citizens. We argued that the CAC would assist us in forming our set of recommendations on building civic capacity in Martin County since the coal waste spill of October 2000.

Flex-E-Grant Funding

In August of 2001, the Kentucky Appalachian Commission, the Department for Local Government and the Office of the Governor approved our *Flex-E-Grant* proposal. Flex-E-Grant funding has allowed our university team to complete our survey and field interview work in both Martin and Perry County. It has also allowed our team to establish a citizen advisory committee (CAC). Through consulting with the CAC, we have developed our project recommendation. Based on CAC testimony, we have also conducted a careful review of the public record and an extensive review of regulatory agency documents. As a consequence, our team has been able to develop a series of pointed recommendations on how to improve civic and community life in Martin County since the environmental disaster of 2000. These recommendations, and the results of our research efforts under the Flex-E-Grant initiative, are contained within the body of the following report. To assist the reader in reviewing this report, we outline the contents of the report below.

Report Outline

- **Section Two: Research Design Project Methodologies:** In this section, we summarize the field interview methods that our team used in collecting interviews with over thirty Martin County citizens. We then summarize our survey methodologies by explaining how our survey was developed. We then discuss the sampling methods that were used to distribute and collect surveys in both Martin and Perry County with Perry County being described as our control community site. In this section, we also speak to the development of the citizen advisory committee. We end with a discussion on our content analysis of newspapers articles, agency documents and other public records. These other reports and other agency documentation are heavily cited in the body of this report.
- **Section Three: Defining Civic Capacity:** In this section, we provide a working definition of ‘civic capacity.’ After defining civic capacity, we then proceed to evaluate the civic sphere in Martin County since the coal waste disaster. Based on a timeline of events that have occurred since the spill, we argue that the civic sphere in Martin County has been seriously constricted. Events presented in this section, suggest that area citizens have not been given opportunity to participate in environmental assessment and recovery

decisions. This section explains that there are statutes that provide for citizen involvement in disaster recovery. We review these statutes in this section as well.

- **Section Four: Emergency Water Provisions and Water Treatment:** In section four we speak directly to one of the prime issues of civic concern in Martin County as identified in our survey findings. This section addresses water supply and water treatment since the October 2000 coal waste disaster. The section outlines first, emergency water response as an emergency water line was established in Martin County approximately ten days after the spill. Second, this section then outlines other water quality and water treatment issues surrounding these two events.
- **Section Five: Water Quality Testing and Monitoring:** In this section, based on the concerns expressed by the citizen advisory committee, our project team reviews water testing and monitoring and other environmental impact assessments conducted under the Unified Command Structure (UCS). This section is both framed by the citizen advisory community and our survey findings. Based on our survey results, a large majority of citizens either agree or strongly agree that an independent citizen's committee should monitor water quality in Martin County. This section, based on a review of coal company and agency water quality tests conducted under the UCS, provides empirical justification for an independent citizens' committee to monitor water quality in Martin County.
- **Section Six: Cleanup and Reclamation and Civic Capacity since the Disaster:** In the prior section (Section Five), we start to review the environmental statutes and regulations that were applied and not applied in responding to the coal waste disaster in Martin County. These statutes are also reviewed in the Civic Capacity section of this report. In this section, we outline some of the public participation provision in several environmental statutes. After outlining events surrounding cleanup and reclamation activities, we refer back to these statutes and their provisions for public involvement and public comment.
- **Section Seven: Recommendation on Improving Civic Capacity in Martin County:** We set our recommendations in full in the final section of this report. We provide two principal recommendations to the Kentucky Appalachian Commission, the Department for Local Government and the Office of the Governor:
 1. Increase community involvement in cleanup and reclamation strategies
 2. Increase community involvement in watershed management

These two recommendations are central in rebuilding civic capacity in Martin County since the coal waste disaster. We offer evidence for our position in this section of the report. In this section, we also offer a series of sub recommendations to assist the above governing bodies in implementing the above recommendations.

- **Appendix A: Field interview schedule**
- **Appendix B: Survey Results**
- **Appendix C: Survey District Maps**
- **Appendix D: Martin County Water District Maps**