

Report on a Review of the Pennsylvania Minefill Study

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At the request of Jeff Stant, Project Director of the PA Minefill Research Project, for the Clean Air Task Force, I reviewed the PA Minefill Study, as it neared completion. I am trained as a physical chemist, and have taught physical chemistry and analytical chemistry on the college level. For a number of years, I had summer and leave research appointments at the Federal energy laboratories near Pittsburgh (now the National Energy Technology Laboratories (NETL)). I worked on projects related to the liquefaction of coal and to acid rain, and in the general context of coal chemistry.

My emphasis in the review was on the treatment of chemical aspects of the study. I read other sections as a concerned citizen scientist. In my opinion, the treatment of the chemistry is straight forward and systematic, doing all that can be done with the analytical data available, and presented so that problems with sampling and the absence of blocks of data are apparent. The language systematically points to trends and suggests conclusions, which, given the problems with locations of sampling points and the sparseness of the data, is as much as can be done. The sites, the mine spoils, and the ashes are each, in their own ways complex, as are their interactions, site by site. What is clear to me from the study, is that the waters flowing from the sites are not "improved", and often bear the trace metals concentrated in the ashes, at well above acceptable levels.

If I were approaching fresh the completed study (I saw it on-line, some twenty megabytes of material), I would surely start with Chapter 7, Conclusions and Recommendations. In my opinion, the evaluation of the water chemistry presented in Chapter 7 is supported in the detailed discussions of the sites which make up the bulk of the study. Some of the site studies were being revised at the time of my review, but I examined fifteen of them in detail.

I feel that it important to stress that the analytical data being discussed were extracted from the public records, the site permit files of the PADEP, not generated by the authors of the PA Minefill Study. The data for the fifteen sites, surely from a minimum of fifteen analytical groups, were accumulated over more than a decade. The conclusions inferred in the study seem chemically justifiable. This is a work of "synthesis", true, it is an analysis of analytical data, but that should not shift fault with data to the current authors. To attempt further statistical analysis would not be useful. The analysis can not be better than the sample, "statistics", in this case, would obscure the problems.