

## **Trace Elements and Minerals in Coal: An Example of Environmental Injustice**

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Environmental Justice is defined as the fair treatment of all people regardless of race, national origin, or income level with respect to environmental laws and regulations and their enforcement. Unfortunately, Environmental Injustice is all too common. This is particularly true when it comes to the health impacts of trace elements and minerals derived from coal. Most coal research and mitigation efforts have focused on sulfur, particulates, and carbon dioxide. But, aside from mercury, relatively little attention has been paid to other potentially harmful trace elements, and minerals released from coal that cause widespread and severe health problems. A major reason for this disparity is that those people who are affected most by the mobilization of trace elements and minerals are generally poor and live in rural communities. Thus the situation is a classic example of environmental injustice. Examples include: communities living above and near active burning coal seams in Jharia, India; villagers in China suffering from exposure to arsenic, fluorine, selenium, and quartz mobilized from domestic coal combustion; respiratory problems in South African Townships burning coal indoors; and coal miners around the world who are suffering from Black Lung Disease exacerbated by exposure to pyrite particles in the dust they breath. Scientists, especially coal scientists and geochemists have an opportunity, if not an obligation, to help protect the health of these disadvantaged people. This can be accomplished by: generating reliable coal quality data bases; conducting collaborative research on the health impacts of the trace elements and minerals; disseminating the data to public health agencies, government decision makers and to citizen's advocacy organizations; and providing information to the people most likely affected by the trace elements and minerals.

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