MOUNTAINTOP MINING-VALLEY FILL EIS
OSM, EPA, COE, FWS with WVDEP
GOALS for the EIS, and Questions to be Addressed

Goals for the EIS

Goals for the EIS are expressed from several different perspectives: environmental, regulatory, and public service.

- EIS purpose. Determine the impact on environmental resources from the size and location of excess spoil disposal in valley fills associated with mountaintop mining operations, and determine the impacts of mountaintop mining on waters of the United States and fish and wildlife resources. Determine the proposed action and develop/evaluate a range of reasonable alternatives to the proposed action. Consider the impacts, some of which may be significant, that the EIS will have on existing agency programs.

- Assessment of mining practices. The EIS should show how -- by examining mining technology and comparing practices for prevention of environmental damages and reclamation that have or could have been used at selected existing mining sites -- such mining operations might be carried out in a way that minimizes adverse impacts to streams and other environmental resources and to local communities. It should assess the extent to which implementation of such practices might be limited by economic constraints; and assess the future economic benefits such practices might produce (e.g. fisheries, forestry, recreation). What are the most practical techniques? Are there insurmountable technical limitations? Or financial constraints and tradeoffs?

- Assessment of cumulative effects. The EIS should use cost-effective, state-of-the-art techniques to assess the likely cumulative environmental effects of mountaintop mining operations and associated valley fills, based on mining company projections of mining activity during at least the next 20-30 years (with projections to show sensitivity at different coal prices).

- Clarifying choices. The EIS should seek to demonstrate the extent to which, and how, proposed mountaintop mining in West Virginia and other Appalachian coalfield states can be carried out in an environmentally-sustainable manner. Are there cost effective ways to enhance existing mining, reclamation, mitigation processes and/or procedures that would assure West Virginians, for example, that they do not have to make the choice between mining jobs and irrevocable loss of their environment amenities?

- Environmental evaluation of individual mining projects.The EIS should examine how to improve environmental assessment and design of individual mining projects, starting with requirements for the mining company's own planning process and selection of mining practices,

reclamation techniques, hydrologic/drainage practices, buffer zones, etc. It should identify what water quality, habitat and other environmental evaluations need to be performed prior to mining (for example, by mining companies) and used in the decision-making process by the companies and the regulators.

- Improved capacity for decision-making.The way in which the EIS process is carried out should be designed so as to improve communication among the mining companies, the regulatory agencies, environmental groups, and landowners and enhance everyone's understanding of options and consequences. It should be organized as a progressive learning experience and capacity-building process which leaves everyone better able to make intelligent choices about the future.

- Improved regulatory tools. At the end of the EIS process, the regulatory agencies should have designed better tools for making SMCRA, 404, 402 and FWS program decisions efficiently, in a way that is coordinated, takes advantage of complementary goals in the Federal laws and regulations, and serves the public interest. They will be working towards this goal from the very beginning of the EIS process, as they work to make coordinated permit decisions in the interim, develop and share technical information through the "Four agency" studies, evaluate each others' policies and practices, and discuss regulatory improvements. (An example is to see how state SMCRA decisions could be more "NEPA-like".) This goal might be attained through monthly, facilitated sessions to review particularly important policies or to discuss procedural and communication issues.

Specific questions the EIS should answer

A. Definitions and measures

(1) What is a stream? The agencies should develop a mutually acceptable approach for reconciling the interagency and interstate differences concerning the definition of streams.

(2) How will we measure the effects (impacts) of mountaintop mining operations and associated valley fills on streams? On aquatic life, wildlife and nearby residents?

(3) Once effects are measured, how will we define what is "impacted" and the "significance" of that effect? How will we determine what is the impact area (watershed)?

(4) How effectively can we assess cumulative impacts and apply threshold concepts through landscape ecology or other (cost-effective) methods?

(5) What are the most appropriate qualitative and quantitative measures of effectiveness of stream restoration? Of forest/habitat impact and restoration?

B. Environmental impact assessment

(1) What are the short- and long-term effects of individual mountaintop mining operations and associated valley fills on the following:

a. physical, chemical and biological conditions of affected streams and their watersheds, both within the area of direct impact and downstream, and including surface and groundwater. Consider both water quality and quantity, including flooding potential and baseflow. Consider changes on aquatic habitat, and stream use.

b. terrestrial habitats and wildlife populations (with emphasis on migratory birds and mammals) within and adjacent to the mined and filled areas?

(2) What are the cumulative short- and long-term effects of mountaintop mining operations and associated valley fills on 1(a) and (b) above, when considered together with all other surface disturbing activities within given watersheds of varying size? The answer to this question should include a complete inventory of past and expected future stream and terrestrial area effects (i.e. miles of streams and square miles of terrestrial habitat impacted/lost.)

(3) What are the expected effects evaluated in questions 1. and 2. likely to be on aquatic and terrestrial species of federal and state concern (i.e. listed and proposed threatened and endangered species, candidate species and species of special concern)?

(4) What are the relative individual and cumulative effects of a single large valley fill versus multiple small headwater fills on the receptors evaluated in 1(a) and (b) above? In answering this question, assess the relative value of headwaters and their contribution to the physical, chemical and biological health of the larger watershed.

(5) How do we reach a better scientific consensus on the water quality/aquatic habitat values of valley headwater steams so that the on-site impacts of fills, and the resulting mitigation, restoration and reclamation requirements can be judged more effectively -- both in the fill area and downstream? What does "minimize" environmental damages mean in this context?

(6) How do we evaluate and improve stream restoration practices so that ecological health and viability are returned to waters on mined landscapes; how quickly can ecological restoration be achieved; what is the extent and nature of irreversible loss of stream habitat from mining?

(7) How do we evaluate and improve forest reclamation practices so that forest fragmentation and habitat disruption are considered? If there are competing uses for mined land, what are the key indicators from an environmental standpoint for determining which areas can be developed (e.g. farming, sport hunting habitat, commercial forestry, development) and which areas should be returned to their pre-mining state (e.g. characteristic mixed hardwood forest)?

(8) How effective have the reclamation practices and compensatory mitigation measures required to date for mountaintop removal and other mountaintop mining operations, and for valley filling, been in offsetting the adverse effects of such activities on aquatic and terrestrial environments? What have been the frequency, results and effectiveness of follow-up compliance monitoring?

(9) What are projections for the extent of mountaintop mining in the Appalachian coalfields in the future. What are the regional, national and worldwide trends in mining technology and economics that are driving Appalachian coalfield developments? Are they readily reconcilable with environmental protection and restoration?

(10) After evaluating the combined effects of mining and other surface disturbing activities, and the offsetting effects of reclamation and compensatory mitigation, what are the expected net cumulative effects of existing, ongoing and all viable future mountaintop mining operations on the aquatic and terrestrial environments of the Appalachian coalfields region? What impacts will the future projections have on environmental resources, including waters of the U.S. and fish and wildlife?

(11) If regulatory action limits mountaintop mining and/or associated valley fills, what impacts would the possible alternative mining methods have on environmental and socio-economic resources?

(12) What are the socio-economic impacts, both positie and negative, associated with mountaintop mining and valley fills? These may include values associated with postmining land use change, removal from market of coal not economically accessible by other mining methods (and associated takings claims), aesthetics, tourism, the heritage of mountain residents, and other factors.

(13) How well are the existing processes meeting the desired outcomes of the regulations?

C. Preliminary Actions and alternatives

(1) What environmental analyses should be required before a mining plan is submitted? During mining? After mining and reclamation end?

(2) What criteria should be used to determine whether a fill may be placed in a stream?

(3) What alternatives to valley filling are available to industry?

(4) To what degree are the drainage control measures being established on fills able to replace aquatic habitats that existed prior to construction of the fill, and can designs be modified to further enhance or accomplish this?

(5) Are fills adequately stable under the current regulatory scheme? If not, why and what alternatives are available?

(6) Regarding the success of current reclamation plans for mountaintop mines and valley fills in replacing premining terrestrial habitats, can designs be modified to further enhance or accomplish this?

(7) Regarding the effectiveness of existing forms of mitigation associated with valley fills in replacing or providing substitute resources, can existing forms of mitigation be modified to further enhance or accomplish this?

(8) What are areas of regulation, policy, technical guidance, communications and procedures to be improved to meet the goal of minimizing adverse environmental impacts associated with mountaintop mining operations? Are the improved regulatory system changes feasible to implement and how? How can we design a regulatory process that is both more effective -- in terms of quality and timeling of decisions -- and also less burdensome in terms of agency expenditures?

(9) Agencies need to ascertain and consider how the public will judge the effectiveness of the EIS.