**Summary Paper**
**OVERVIEW OF THE COAL MINING AND REMINING REGULATIONS**

On January 23, 2002, EPA published final amendments to Effluent Limitations Guidelines and New Source Performance Standards for two new subcategories under 40 CFR Part 434: Coal Mining Point Source Category. The final rule and supporting information are available at http://www.epa.gov/OST/guide/coal. The two new subcategories are:

***The Coal Remining Subcategory*** - established to encourage operators to remine abandoned mine lands that still have economically valuable coal resources and at the completion of remining operations, result in improvement of the quality of pre-existing mine drainage discharges.

***The Western Alkaline Coal Mining Subcategory*** - established to allow alternate sediment control technologies (in place of or in addition to conventional sedimentation ponds) for reclamation and related areas. In the past, negative impacts have been caused by the predominant use of sedimentation ponds to meet the Subpart D - Alkaline Mine Drainage limitations.

**How the New Subcategories Fit in with the Existing Regulations**

The two new subcategories **supplement** the existing coal mining regulations whose limitations were finalized in October of 1985. The 1985 regulations included Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT, reserved), Best Available Technology Economically Achievable (BAT), and New Source Performance Standards (NSPS) limitations for four subcategories:

$ Subpart B: Coal preparation plants and coal preparation plant associated areas;
$ Subpart C: Acid or ferruginous mine drainage;
$ Subpart D: Alkaline mine drainage; and
$ Subpart E: Post-mining areas.

The 2002 regulations include BPT, BCT, BAT and NSPS limitations for:

$ Subpart G: Coal Remining; and
$ Subpart H: Western Alkaline Coal Mining.

The wastewaters covered by these Subparts include: wastewater from coal preparation plants, and drainage from a mining site that may originate from either storm water, ground water, or surface water.

**Schedule of Compliance with the New Subcategory Regulations**

For permits that cover discharges which fall into either the coal remining or the western

alkaline coal mining subcategory, the following compliance dates apply:

| Type of Facility | Regulations that Apply | Compliance Date |
|---|---|---|
| Existing Direct Discharger | BPT, BCT, BAT | The date the operation's NPDES permit includes these limitations (i.e., at permit renewal or modification) |
| New Source Direct Discharger | NSPS | The date the operation commences discharging |

## Supporting Documentation

$ *Economic and Environmental Impact Assessment of Final Effluent Limitations Guidelines and Standards for the Coal Mining Industry: Remining and Western Alkaline Subcategories* (EPA 821-B-01-013, December 2001) - Presents the methodology employed to assess the economic and environmental impacts of the final rule and the results of the analysis.

$ *Coal Remining Statistical Support Document* (EPA 821-B-01-011, Dec. 2001) - Describes the statistical methodology for establishing and monitoring discharge-specific limits at remining sites. Discusses the rationale behind the statistical procedures and provides example calculations.

$ *Coal Remining Best Management Practices Guidance Manual* (EPA 821-B-01-010, Dec. 2001) - Technical reference document that describes AML conditions and the performance of BMPs that have been implemented at remining operations. Provides a tool for developing appropriate site-specific pollution abatement plans for use during remining operations.

$ *Statistical Analysis of Abandoned Mine Drainage in the Assessment of Pollution Load* (EPA 821-B-01-014, Dec. 2001) - Describes the characteristics of pre-existing discharges at abandoned mine lands and presents extensive evaluation of data obtained during and after remining operations.

$ *Development Document for Final Effluent Limitations Guidelines and Standards for the Western Alkaline Coal Mining Subcategory* (EPA 821-B-01-012, Dec. 2001) - Presents EPA's technical conclusions concerning the Western Alkaline Coal Mining Subcategory.

$ *REMSTAT 2002 - Remining Statistical Analysis Tool and User's Manual (CD)* EPA 821-C-03-001, Dec. 2002 - A computer application tool for establishing and monitoring site-specific effluent limitations for pre-existing discharges and/or hydrologic units.

$ *Coal Remining and Western Alkaline Coal Mining Support Documents (CD)* EPA 821-C-02-002, July 2002 - Compilation of EPA and OSM documents supporting the new subcategories and provides links to pertinent websites for additional information.

## THE COAL REMINING SUBCATEGORY

EPA recognizes that one of the most successful means for improvement of abandoned mine lands (AML) is for coal mining companies to remine abandoned mine areas and extract the remaining coal reserves. During remining operations, acid-forming materials are removed with the overburden and during extraction of the coal, pollutant abatement best management practices (BMPs) are implemented to control acid formation and sediment, and the abandoned mine land is reclaimed.

The 1987 amendments to the Clean Water Act included incentives for the remining of abandoned mine lands that pre-dated the passage of SMCRA. These incentives were called the "Rahall Amendment" and provided an exemption for remining operations from the BAT effluent limits for iron, manganese, and pH. Instead, permit writers were allowed to set site-specific, numeric BAT limits based on Best Professional Judgement (BPJ). Since that time the issuance of "Rahall-type" permits has been limited in every coal producing state except Pennsylvania. One of the goals of the new Coal Remining Subcategory is to provide a clearer regulatory framework and guidance for application of the Rahall Amendment. An additional goal is to encourage remining by extending coverage of the exemption to address total suspended solids (TSS) and post-SMCRA AML sites, and to include BMP-only (non-numeric) requirements. EPA hopes that implementation of this new subcategory will lead to greater opportunities for coal remining operations at existing AML sites.

> Between 1987 and 1999, Pennsylvania issued approximately 300 Rahall-type permits compared to about 30 such permits in all other states combined.

This summary paper outlines the basics of the new Coal Remining Subcategory and provides guidance on how to incorporate the subcategory limitations into a permit. This summary covers the following:

- subcategory scope and applicability,
- the pollutants covered under this subcategory,
- the Pollution Abatement Plan,
- a summary of the statistical procedures used to determine and monitor numeric limits in pre-existing discharges, and
- responses to frequently asked questions.

### Scope and Applicability

The effluent limitations for the Coal Remining Subcategory apply to pre-existing discharges that are located within, or hydrologically connected to pollutant abatement areas of a coal remining operation. Under this Subcategory, pre-existing discharges that are located within, or

are hydrologically connected to pollution abatement areas are subject to a combination of numeric limits and non-numeric Best Management Practice (BMP) requirements. These limits and requirements are an **alternative** to the other existing 40 CFR part 434 Subpart limitations. The alternate limits are set to achieve no less than baseline conditions for selected pollutants and include requirements for a site-specific pollution abatement plan that demonstrates the potential to improve discharge baseline pollutant loads.

EPA also is allowing effluent limits based on BMP-only requirements where numeric monitoring of a baseline pre-existing discharge is physically or economically infeasible. The non-numeric permit provisions are established using best professional judgement to evaluate the adequacy of the BMPs contained in the pollution abatement plan. These BMP-only permits are applicable only to pre-existing discharges that meet specific criteria for determining monitoring infeasibility (e.g., the discharge exists as diffuse ground water flow, is inaccessible, is too large).

A ***pre-existing discharge*** means any discharge resulting from mining activities that have been abandoned prior to the time of a remining permit application. This term shall include a pre-existing discharge that is relocated as a result of the implementation of best management practices (BMPs) contained in the Pollution Abatement Plan.

The ***pollution abatement area*** means the part of the permit area that is causing or contributing to the baseline pollution load of pre-existing discharges. This area must include (to the extent practicable) areas adjacent to and nearby the remining operation that also must be affected to reduce the pollution load of the pre-existing discharges and may include the immediate location of the pre-existing discharges.

A ***coal remining operation*** is one at which coal mining was previously conducted and where the site has been abandoned or the reclamation performance bond has been forfeited.

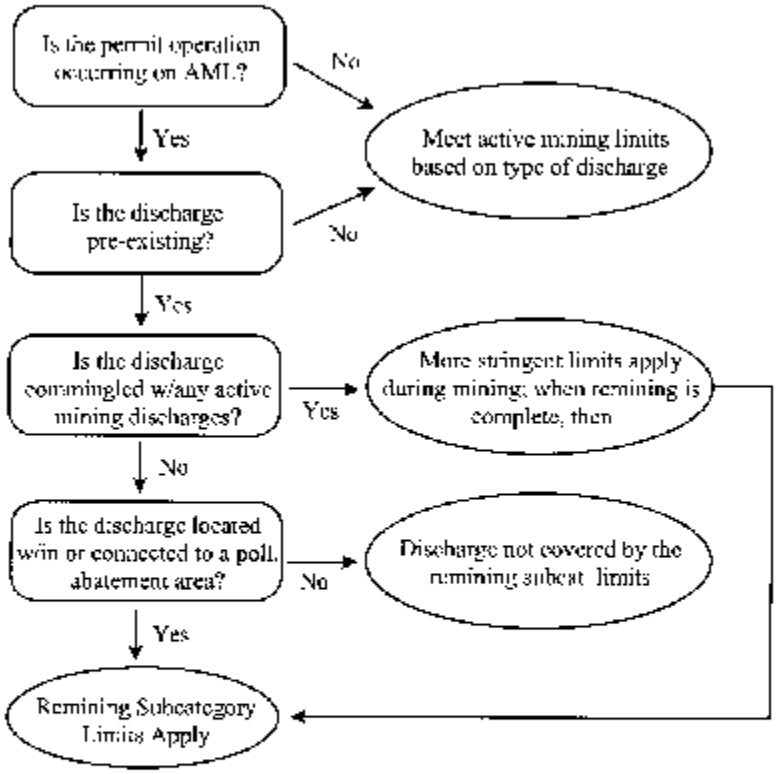
An ***active mining area*** is the area, on and beneath land, used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term excludes coal preparation plants, coal preparation plant associated areas, and post-mining areas.

The new Coal Remining Subcategory does not apply to discharges produced or generated in new (virgin) mining areas, including active mining portions of remining operations. Wastewater discharges produced or generated by active coal mining operations will remain subject to the effluent limitations already established in part 434, subpart C (Acid or Ferruginous Mine Drainage) or subpart D (Alkaline Mine Drainage). Pre-existing mine water that is physically encountered during remining or is commingled with new discharges also will be subject to subpart C or subpart D standards while the water is in the active pit. Once the pre-existing mine water is no longer physically encountered or commingled, the alternate effluent limits will be applied. Pre-existing discharges that are relocated as part of the Pollution Abatement Plan are

not considered new discharges and are eligible for the alternative remining limitations and standards.

**Figure 1** provides a flow chart for determining whether the Coal Remining Subcategory limitations apply to a specific discharge.

**Figure 1. When Remining Subcategory Limits Apply**



## Pollutants Regulated and Coal Remining Subcategory Limitations

The Coal Remining Subcategory includes regulation of total iron, total manganese, net acidity (total acidity - total alkalinity), and total suspended solids (TSS). A qualifying pre-existing discharge must comply with the effluent limitations listed below and the operator must also submit and implement a detailed Pollution Abatement Plan.

| Pollutant | Requirement |
|---|---|
| Iron, total | May not exceed baseline loadings (as defined by Appendix B of part 434) |
| Manganese, total | May not exceed baseline loadings (as defined by Appendix B of part 434) |
| Acidity, net | May not exceed baseline loadings (as defined by Appendix B of part 434) |
| TSS | During remining and reclamation, may not exceed baseline loadings (as defined by Appendix B of part 434). Prior to bond release, the pre-existing discharge must meet the applicable standards for TSS or SS contained in Subpart E[1]. |

[1] A pre-existing discharge is exempt from meeting standards in Subpart E for TSS and SS when the permitting authority determines that Subpart E standards are infeasible or impractical based on the site-specific conditions of soil, climate, topography, steep slopes, or other baseline conditions provided that the operator demonstrates that significant reductions of TSS or SS will be achieved through the incorporation of sediment control BMPs into the Pollution Abatement Plan.

## The Pollution Abatement Plan

The Pollution Abatement Plan must include the following:

- Characteristics of the pollution abatement area (e.g., maps, hydrogeology, geochemical data, etc.);
- Characteristics of the pre-existing discharges (e.g. locations, flow measuring devices, etc);
- Identification of the selected best management practices (BMPs) to be used;
- A description of the design specifications and construction specifications for the BMPs;
- Implementation and maintenance schedules and criteria for monitoring and inspecting the BMPs; and
- Expected performance of the BMPs to reduce the pollution loads.

The plan must be designed to reduce the pollution loading from pre-existing discharges and the BMPs must be implemented as specified in the plan, unless unforeseen changes are necessary to reduce the pollution load. Upon review of the permit application, it is within the discretion of the regulatory authority to determine whether additional or more intensive BMPs than those identified in an applicant's proposed plan are required.

EPA has provided a support document entitled, *Coal Remining Best Management Practices Guidance Manual (EPA 821-B-01-010)* to assist industry and permitting authorities in the development and implementation of the Pollution Abatement Plan.

In the course of developing the Pollution Abatement Plan requirements, several issues were identified, including; 1) when (if ever) can a permit authority set BMP-only requirements for pre-existing discharges, and 2) how do the requirements in the Pollution Abatement Plan relate to the conventional information that is submitted by a remining operator in their SMCRA permit.

1) Under Part 434.72 (b)(2), EPA has indicated that if the permitting authority determines that it is infeasible to collect samples for establishing the baseline pollutant levels, and that remining will result in significant improvement that would not otherwise occur, the numeric effluent limitations do not apply. In these cases, the permit would require implementation of the Pollution Abatement Plan only. Examples where it maybe infeasible to collect samples are: 1) the discharge emanates within a stream or river and the mine water cannot be separated from the in-stream water, 2) the discharge emanates on the side of vertical face and sampling and flow measurement are too dangerous or simply not possible, 3) the discharge(s) are too large or emanate in such a manner that it is not possible to accurately collect background data or to monitor during and after mining, and 4) there are too many discharge points spread out over too large of an area.

2) In the final preamble to the Coal Remining regulation, EPA noted that the SMCRA permit application process requires a coal mining operator to submit an extensive operation and reclamation plan, documentation, and analysis to the State mine permit authority or OSM for approval. EPA believes that many requirements for the Pollution Abatement Plan will be contained in the operations and reclamation sections of an approved SMCRA permit. Therefore, an NPDES permit authority may find that the SMCRA permit/application is sufficient to meet the requirements of the Pollution Abatement Plan. However, the State NPDES permit authority or EPA will retain the authority to require additional or expanded BMPs and documentation as necessary to ensure that implementation of the identified BMPs is consistent with Clean Water Act requirements.

   State permit authorities will determine specific protocols for implementing the pollution abatement plan in the NPDES permit. In a 1999 survey, States regulatory authorities indicated that they are currently coordinating review and approval of remining permit applications between SMCRA and NPDES authorities. At least 3 States indicated that they have a Memorandum of Understanding (MOU) to facilitate these procedures.

**Final Rule Statistical Procedures**

The remining subcategory standards require that total iron, total manganese, net acidity, and TSS do not exceed the baseline loadings. If baseline loadings are less than the loadings that would result from discharges containing pollutants at the limits included in Subparts C or D, however, limitations may be determined at Subpart C or D levels (i.e., discharge limitations are set at either baseline or Subpart C/D levels, whichever is higher).

Statistical calculations are needed to determine these alternate discharge-specific effluent limits and whether the limits are being exceeded during or after mining. In the final rule, EPA included two statistical procedures for determining these alternate limits and for deciding when the pollutant levels in a discharge exceed the alternate limits:

Method 1 - is a modification of the methodology used by the Commonwealth of Pennsylvania and includes single observation (monthly) and annual data comparison checks; and

Method 2 - includes three checks: an upper limit on single observations, an annual test of the mean or median, and a cumulative monthly evaluation.

Either Method can be used and EPA has provided guidance on which is most appropriate based on the characteristics of the dataset being used.

The methods provide limits for both single observations and annual triggers of exceedence. This was done to provide checks on both an annual basis and for extreme values of a shorter term event. These statistical procedures are intended to provide a good chance of detecting a substantial, continuing state of exceedence, while reducing the likelihood of a "false alarm." To do this, it is essential to have a sufficiently large number of samples for both baseline and the comparison data set. Therefore, for the baseline dataset, EPA is requiring that at least one sample be obtained per month on a consistent time-interval basis for a period of 12 months.

EPA has developed the Remining Statistical Analysis Computer Application (REMSTAT 2002) and User's Manual to assist permit applicants and permit reviewers in calculating and reporting baseline pollutant levels and exceedences or lack of exceedences. This application is available
on CD-ROM and is being distributed to coal mining regulatory authorities, at EPA's coal remining workshops, and to anyone else who requests it. The CD is available as of March 2003 and can be requested by contacting Ahmar Siddiqui at siddiqui.ahmar@epa.gov.

These statistical procedures were included in the final rule as Appendix B and are also presented in detail in EPA's *Coal Remining Statistical Support Document* (EPA-821-B-00-001) and the REMSTAT 2002 User's Manual.