U.S. Environmental Protection Agency – November 2004

Compliance and Enforcement National Priority:

Mineral Processing and Mining

The United States Environmental Protection Agency (EPA) Office of Enforcement and Compliance Assurance (OECA) has established national priorities for federal fiscal years (FY) 2005 through 2007. OECA and the EPA's 10 Regions will make the following issues priorities for monitoring, compliance assistance, enforcement and cleanup actions over the next three years:

1. Clean Air Act: Air Toxics
2. Clean Air Act: Prevention of Significant Deterioration and New Source Review
3. Tribal
4. Clean Water Act: Wet Weather, including:
   - – Concentrated Animal Feeding Operations
   - – Combined Sewer Overflows
   - – Sanitary Sewer Overflows
   - – Storm Water
5. Resource Conservation and Recovery Act: Mineral Processing and Mining

After evaluating the Safe Drinking Water Act (SDWA) Microbial Rules as a national priority, the Agency determined that it was more appropriate to address the microbial non-compliance problems, which occur predominately at very small drinking water systems, through the SDWA core program. The Petroleum Refining national priority is near to achieving its goal and will be assessed during the coming year to determine if sufficient progress has been made to return this priority to the core program.

The goal of the Mineral Processing and Mining strategy is to achieve maximum compliance with environmental regulations in order to protect human health and the environment.

Background

Mineral Processing and Mining was selected as a national enforcement and compliance priority for the FY 2005 - FY 2007 period because it met the selection criteria: (1) increased national attention could lead to significant environmental benefits; (2) there were patterns of non-compliance; and (3) EPA was well-suited to take action in this strategy area.

The mineral processing and mining sectors generate more wastes that are corrosive or contain toxic metals than any other industrial sector. Over the past decade, EPA has found that many of the facilities that manage these wastes have contaminated groundwater, surface water and soil either through failure to comply with state or federal environmental requirements or legally permissible waste management practices. Large-scale mineral processing and mining operations often severely affect water supplies and wildlife and create environmental damage. Many facilities are located in populated areas, making health risks a significant concern for EPA.

More than 500,000 people live within a one-mile radius of a mineral processing or mining facility and more than 8 million are within five miles of one.

The Environmental Problem

Mineral processing and mining cause environmental problems when they generate or improperly manage the disposal of large quantities of toxic wastes. Mineral processing waste typically contains mercury, lead and arsenic. The metals in these wastes become highly concentrated and can dissolve and move easily into soils, surface waters and groundwater if not properly managed. Acids that are used in mineral processing and chemicals created during processing become part of the waste streams and add to their toxicity and mobility. Wastes are often managed in unlined surface impoundments and pose significant risk to groundwater and surface waters.

This strategy has a special emphasis on mineral processing facilities that produce phosphoric acid and phosphate compounds because a growing body of evidence shows they cause widespread environmental damage. EPA studies indicate that there is a moderate to high potential for groundwater contamination across the phosphoric acid industry. The processed wastewater from these facilities typically contains high levels of metals and acid. Eighteen "wet" phosphoric acid plants now operate in the United States.

Goals

The object of the Strategy is to reduce risk to human health and the environment by achieving increased compliance rates throughout the mineral processing and mining sectors and by ensuring that existing and potential harm to human health and the environment are being appropriately addressed through enforcement and compliance assistance.

Goal: By FY 2007, ensure that high-risk facilities in the mineral processing and mining sectors are in compliance or on a path to compliance, or are otherwise working to reduce risk to human health and the environment through best management practices and other measures.

Sub-Goals

- Prioritize mineral processing and mining facilities by evaluating risk and other factors, such as proximity to environmental justice areas, financial viability and compliance status. Select 25 non-phosphoric acid mineral processing facilities and five mining sites for investigation.
- Ensure that all 18 phosphoric acid facilities are in compliance or are addressed through settlement, civil action or referral to the Department of Justice (DOJ) and are subject to an order to assess a substantial hazard and address any imminent and substantial endangerment.
- Ensure that 25 of the mineral processing facilities (other than phosphoric acid ones) are in compliance or, if not in compliance, have been addressed through settlement, civil action or referral to DOJ for filing and are subject to an order to assess a substantial hazard and address any imminent and substantial endangerment.
- At five mining facilities, assess compliance, evaluate whether there is a potential imminent and substantial endangerment, and take appropriate action to protect human health and the

environment.

- Identify waste management practices that cause health and environmental problems and work closely with local, state, tribal and federal authorities to provide that information to other regulated entities so that they can improve their environmental management practices.
- Aggregate information on “marquee” compliance problems—those that occur throughout an industry—and best management practices and disseminate it to the regulated community and all state and private providers of assistance.

Performance Measurement

The overall goal of this strategy is to ensure that high-risk facilities in the mineral processing and mining sectors are in compliance, on a path to compliance or are otherwise working to address existing harm and reduce risk to human health and the environment. This strategy lays the groundwork for an effort that is likely to continue for many years. In addition to the highest risk facilities, which are addressed by this strategy, there are more than 100 facilities in the mineral processing sector and potentially several hundred more in the mining sector. Most of these facilities will warrant some form of enforcement activity or compliance assistance. EPA expects these sectors to remain a federal enforcement and compliance assistance priority through FY 2010.