



Background Paper for Candidate National Enforcement Priority: Energy/Mining Resource Extraction January 2010

What is energy/mining resource extraction and why are these activities important?

Recent proposals for natural gas production and mountain top mining activities in the eastern U.S. have raised concerns about environmental impacts from energy extraction. As part of efforts to switch to cleaner energy, annual natural gas exploration, development, and transmission in the U.S. have increased dramatically. EPA has a responsibility to provide a balance to energy/mining resource extraction and environmental protection which enables the nation to achieve its energy goals while preserving and protecting human health and the environment.

The preponderance of large-scale mineral extraction operations is located in the western U.S. While the majority of coal is produced in the west, the majority of coal mines are located in the eastern half of the country. The majority of oil and gas extraction occurs in the west, yet increased exploration and production is occurring nationwide.

The nature and impacts of extraction activities vary by type of activity and geographic location. In EPA Region 3, increased incidents of environmental and human health impact related to resource extraction operations are more often associated with low income communities or in environmentally sensitive ecosystems. Recently, it was determined that 26 of the 28 mountain top mining permit sites in West Virginia are located in areas of potential environmental justice concern. In Region 6, there are a number of environmental/community concerns with natural gas production. These include air toxics, ozone, green house gas emissions, water disposal operations, truck traffic and noise associated with well installation and pipeline network compressor stations. The Barnett Shale gas play alone covers all or part of 18 counties in north central Texas. Since 2004, over 12,000 wells have been drilled in this area (with an additional 3,500 permitted), and over 1,300 compressor stations established.

Over the past several years, Region 8 has seen unprecedented acceleration of oil and gas leasing and development. Region 8 contains 6 of the top 10 producing gas fields in the U.S. Much of the development is occurring on federal lands, and on or near Indian Country resulting in a proliferation of well sites, flares, dehydrators, compressor stations, water treatment operations and underground injection wells. The pace and intensity of energy development in the intermountain west has created concerns about a commensurate rise in levels of air pollution. Recent predictions have shown exceedances of National Ambient Air Quality Standards (NAAQS) in rural areas of the intermountain west. There are indications that impacts to air quality in Class 1 areas and Indian Country in Region 8 may be attributable to resource extraction activities.

Rationale:

Environmental & Human Health Significance

The impacts associated with eastern coal production include degradation of water quality of streams and rivers, some of which are drinking water sources; disappearing streams as a result of overburden disposal; and stream flow impact due to high levels of water extraction. Typical air pollutants from oil and gas extraction activities include nitrous oxides, volatile organic compounds (both of which are precursors for ozone), and hazardous air pollutants (benzene, toluene and formaldehyde). As oil and gas are extracted, increasing greater amounts of produced water are extracted and require appropriate management and disposal.

Environmental Justice

A growing number of resource extraction activities occur near population centers that include tribal, low income and minority communities. These populations may consequently suffer disparate impacts associated with energy/mining resource extraction activities.

Non-compliance Data

In Region 3, permits encompassing thousands of mine related outfalls have been reviewed to identify the root cause of environmental impacts. Reconnaissance inspections of impact areas indicate that the mining sector contributes significantly to impairments. In addition, discharge monitoring reports indicate acceptance of waste water at treatment plants (WWTPs) from the oil and gas industry which result in effluent discharges exceeding permit standards for total dissolved solids. In Region 8, inspections conducted at oil and gas facilities demonstrate significant air violations in Indian Country. Since 2008, six enforcement actions in Region 8 for oil and gas air violations in Indian Country have resulted in total civil penalties of over \$2 million.

Federal Government Role

Increased focus on resource extraction activities under the Clean Air Act (CAA), Clean Water Act (CWA) and Safe Drinking Water Act (SDWA), with emphasis on federal lands and Indian Country, could provide significant environmental benefits in areas subject to a federal trust responsibility and to environmental justice communities. EPA regulatory authority also includes Oil Pollution Act (OPA) 311, Spill Prevention, Controls and Countermeasures (SPCC), Underground Injection Control (UIC), Resource Conservation and Recovery Act (RCRA) 7003, and CWA 402/404. A combination of activities are recommended under a strategy to achieve this goal: compliance assistance – to help companies to understand their responsibilities for both energy and environmental needs; compliance monitoring – increased monitoring at WWTPs, resource extraction sites, and sensitive ecosystems to obtain data and to evaluate conditions; and enforcement – targeted enforcement at facilities coupled with an enhanced deterrence effect.