**Nonpoint Mining and Quarrying Emission Estimation Method Options**

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**Overview:**

The nonpoint emission estimation method for the fugitive dust category of mining and quarrying can vary between states based on the availability of source-specific activity and emission estimates. Estimates for this category only include the removal and handling of mined materials resulting in particulate emissions (PM10-PRI and PM2.5-PRI, with no PM-condensable component). The category does not include emissions from engines used to power mining equipment and transport vehicles as those emissions are covered in the nonroad and onroad categories.

For this category, the following SCC is assigned:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Source Classification Code** | **SCC Level One** | **SCC Level Two** | **SCC Level Three** | **SCC Level Four** |
| 2325000000 | Industrial Processes | Mining and Quarrying: SIC 14 | All Processes | Total |

The first option for this category is to develop bottom-up, county-specific estimates from the industry based on information collected from mine/quarry operators. These operations are frequently classified with lower potential emissions than the Type A or B thresholds from the Air Emissions Reporting Rule (AERR) Table 1 of Appendix A, and are therefore not required to be submitted to EPA with detailed site-specific point sources. However, these sources are frequently covered by other state reporting rules due to their crushing equipment being subject to NSPS-OOO (Nonmetallic Mineral Processing Plants), and site-specific information may be collected by states. If states collect activity and emission data from these sources, it may be possible to aggregate these industries to a county-total estimate for the category.

The second option for this category is top-down estimate based on USGS collected mine activity, employment in the industries, and EPA provided emission factors. This is the method used for the 2011 National Emissions Inventory (NEI) for states that did not provide state-specific estimates for this category.

**Option 1: Bottom-up Inventory Created by States**

Where states have emissions data directly from mining and quarry operations that are not submitted to EPA under AERR requirements, it is possible to sum the individual facility emissions to a county-level total. If this is a possibility for states, the following items should be considered and documented:

* Year of data available: these mining/quarry operations may not report data every year, and assumptions may be necessary about the level of activity in the particular inventory year.
* Level of detail in emission reports: states may not collect emissions data for specific emission equipment or processes, and this lack of detail may make it difficult to create comparable emission totals across a county.
* Portable equipment and intermittent operation: mining and quarry activities are not always continuous at a location for an entire emission year. Some mining equipment is permitted by states to move between various locations to retrieve materials as projects demand, and those locations are not limited to single county operations or even single states. States will need to determine if portable equipment emissions can adequately be allocated to actual counties of operation, if the emissions are insignificant, or if allocation factors based on other operations can be used.
* Point versus Nonpoint: some operations in a state may meet the point source threshold of the AERR and be submitted with full emission details. Some states may choose to submit all facilities to the EIS for which they have collected detailed emission data, even those much smaller than the AERR point source threshold. Any state wishing to create a bottom-up inventory for mining and quarrying should remove any facilities submitted as point sources from the nonpoint estimate.

**Option 2: Top-down Inventory Created by EPA**

EPA’s method to create emission estimates for this category to fill-in where states do not provide their own estimate relies on several data sources and some assumptions to allocate activity to the county level. U.S. Geologic Survey (USGS) state-level ore and coal production is used as the main activity data set. Activity and emissions are allocated from the state to county-level based on employment in several industrial classifications. In several cases, state or county level activity or employment are withheld as proprietary company information and EPA must use assumptions and allocation techniques to arrive at the final county estimate. EPA’s emission factors only include drilling and blasting, loading and unloading, and overburden replacement. Emissions not included are transfer and conveyance operations, crushing and screening operations, product storage, and haul road emissions. Though EPA will produce an emission estimate for this category for each state, states without enough information or resources to adopt Option 1 are encouraged to review and update EPA’s methodology if they have state-specific information. Specifically, states can consider providing:

* Mine-specific activity if it is available from a state natural resources or mining office
* County-level employment numbers if available from a state economic development office