

## FINAL AMENDMENTS TO AIR TOXICS STANDARDS FOR PORTLAND CEMENT MANUFACTURING

### FACT SHEET

- December 20, 2012 – In response to a federal court decision, petitions for reconsideration and technical information received after final rules were issued in 2010, the U.S. Environmental Protection Agency (EPA) finalized amendments to the agency's air toxics rules for Portland cement manufacturing. The amended rule will maintain dramatic reductions of mercury, acid gases, particulate matter and total hydrocarbons from existing cement kilns across the country, while ensuring that emissions from new kilns remain low.
- Today's final amendments apply to two air emissions rules for the Portland cement industry: air toxics standards and new source performance standards. The final air toxics rule retains emission limits for mercury, acid gases and total hydrocarbons from the 2010 rules, along with retaining requirements that kilns continuously monitor compliance with limits for mercury, total hydrocarbons and particulate matter (PM).
- The air toxics rule also adjusts the way cement kilns continuously monitor PM emissions, and adjusts emissions limits for PM and organic air toxics. Existing kilns must comply with the standards by Sept. 9, 2015, and if needed, may request an additional year. EPA is making conforming changes to the PM limits in the New Source Performance Standards (NSPS) for new cement kilns.
- Today's rule is expected to significantly reduce pollution from Portland cement manufacturing over 2010 levels when fully implemented, cutting emissions of mercury by 93 percent, hydrochloric acid by 96 percent, PM by 91 percent, and total hydrocarbons by 82 percent.
- The revised rule will maintain important health benefits associated with reducing mercury, acid gases and particulate matter while reducing the cost of compliance. EPA estimates that cement kilns will have to spend \$52 million less to implement requirements in the revised rule than the 2010 rule.
- In developing the emissions limits for the air toxics rule, EPA excluded data from cement kilns that burn non-hazardous solid waste. Those kilns are subject to another rule, the emission standards for Commercial/Industrial Solid Waste Incinerators.

#### *Requirements in the final rules*

- The final rules change the monitoring method that facilities use to demonstrate compliance with emissions limits for PM, and make change to the PM emission limits that are necessary as a result.
  - EPA made these changes based on new real-world technical information that indicated PM emissions could not be reliably measured using the monitoring requirements EPA

had required in the 2010 rule.

- The revised monitoring method requires kilns to monitor continuously to demonstrate compliance with the PM limits.
- The amendments also:
  - Change the compliance date for existing kilns under the air toxics standards to Sept. 9, 2015. Facilities may request an additional year, if needed. EPA is changing the compliance date because the rule revisions make it necessary for the cement industry to reassess its emission control strategies.
  - Some facilities are expected to choose different emission controls to meet the revised requirements.
  - Allow better-performing kilns greater flexibility in meeting the daily *operating limits* that facilities use to demonstrate continuous compliance. This flexibility applies only to those facilities with PM or organic air toxic emissions that remain below 75 percent of the emission limits in the final rule.
  - Treat coal mills that use kiln exhaust as a part of the cement kiln. This means emissions from coal mills are included when determining if a kiln is meeting emission limits.
  - Revise the open clinker pile standards from the 2010 final rule by allowing facilities to choose from a list of work practices to control fugitive emissions. The work practices would apply to any open clinker piles, regardless of the quantity of clinker or the length of time that the clinker pile exists. Facilities must meet the clinker pile standards within one year after the final rule is published in the Federal Register. Accidental spills of clinker, which are not considered open clinker piles, must be cleaned up within three days.
  - Change the alternative emission limit for organic air toxics; kilns may meet this limit in lieu of meeting a limit for total hydrocarbons.

<b>Final Emissions Limits for Portland Cement Manufacturing</b>		
<b>Pollutant:</b>	<b>Final Limits for Existing Source Kilns</b>	<b>Final Limits for New Source Kilns *</b>
<b>Mercury</b> <i>(major and area sources)</i>	55 pounds per million tons of clinker, averaged over 30 days	21 pounds per million tons of clinker, averaged over 30 days
<b>Total Hydrocarbons</b> <i>(major and area sources)</i>	24 parts per million by volume (ppmv), averaged over 30 days	24 ppmv, averaged over 30 days
<b>Organic Air Toxics – Alternative Limit</b> (alternative to the total hydrocarbon limit)	12 parts per million by volume (ppmv). Three-run stack test required every 30 months; stack	12 parts per million by volume (ppmv). Three-run stack test required every 30 months; stack

<i>(major and area sources)</i>	test average is used to determine compliance and set kiln-specific operating limit. Continuous monitoring required to demonstrate operating limit compliance.	test average is used to determine compliance and set kiln-specific operating limit. Continuous monitoring required to demonstrate operating limit compliance.
<b>Particulate Matter</b> (as a surrogate for toxic metals other than mercury) <i>(major and area sources)</i>	0.07 pounds per ton of clinker. Annual three-run stack test required; stack test average is used to determine compliance and set kiln-specific operating limit. Continuous monitoring required to demonstrate operating limit compliance.	0.02 pounds per ton of clinker. Annual three-run stack test average used to determine operating limit. Continuous monitoring required to demonstrate operating limit compliance. <i>(MACT and NSPS limits are the same)</i>
<b>Hydrochloric acid</b> (major sources only)	3 ppmv, averaged over 30 days	3 ppmv, averaged over 30 days
<i>* New source air toxics limits apply to all cement kilns built after May 6, 2009.</i>		

## BACKGROUND:

- Portland cement manufacturing is an energy-intensive process that grinds and heats a mixture of raw materials such as limestone, clay, sand and iron ore in a rotary kiln. That product, called clinker, is cooled, ground and then mixed with a small amount of gypsum to produce cement.
- A variety of pollutants are emitted from the burning of fuels and heating of raw materials. Emissions also can occur from grinding, cooling and materials-handling steps in the manufacturing process.
- The air toxics rules apply both to “major” and “area” source kilns that emit toxic air pollutants. Air toxics, also known as hazardous air pollutants, are known or suspected to cause cancer or other serious health effects. A “major source” of air toxics emits 10 or more tons a year of a single air toxic, or 25 or more tons of a combination of air toxics. Sources emitting lesser amounts are known as “area sources.”
- On August 6, 2010, EPA issued amendments to two rules to significantly reduce emissions of mercury and other air toxics and particle-forming pollutants from new and existing Portland cement kilns across the United States. The rules also will limit emissions of ozone and particle-forming pollutants from new kilns.
- EPA received four petitions for reconsideration of the 2010 rules. The petitions were filed by: Sierra Club; the Portland Cement Association and several companies; Eagle Materials; and the Natural Resources Defense Council. The agency agreed to reconsider several of the issues raised in the petitions and denied others.

- On Dec. 9, 2011, U.S. Court of Appeals for the D.C. Circuit found that EPA's emission standards for the cement industry were legally sound, but remanded the rules to EPA to account for the non-hazardous secondary materials rule proposed after the cement standards were issued. This rule, also finalized today, means some cement kilns are subject to the emission standards for commercial, industrial and solid waste incinerators, rather than the Portland Cement MACT.
- The court stayed the standards for open clinker piles, which EPA was in the process of reconsidering. As a result of the December 2011 court ruling, EPA also reconsidered the cement kiln, clinker cooler and raw materials dryer emission limits in the 2010 rule.
- On June 22, 2012, EPA proposed amendments to two 2010 air rules for Portland cement manufacturing, which are being finalized in this action. The Agency held a public hearing and received 22,000 written comments.
- Under a settlement agreement with the cement industry, EPA agreed to take final action on issues raised in the court remand and reconsideration petitions by Dec. 20, 2012.

#### **TO READ THE FINAL RULE AND OTHER INFORMATION:**

- **Visit EPA's website** at: <http://www.epa.gov/airquality/cement> to read the rule and fact sheets summarizing today's rule.
- Other places to read the rule and background information (use Docket ID No. EPA- HQ-OAR-2011-0817):
  - **EPA's electronic public docket and comment system** at <http://www.regulations.gov>.
  - **The EPA Docket Center's Public Reading Room** (for hard copies).
    - The Public Reading Room is located at EPA Headquarters, Room Number 3334 in EPA West Building, 1301 Constitution Avenue, NW, Washington,
    - DC. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding federal holidays.
    - You will have to show photo identification, pass through a metal detector, and sign the EPA visitor log. Any materials you bring with you will be processed through an X-ray machine as well. You will be provided a badge that must be visible at all times.
- Additional technical information on Portland cement manufacturing is available at <http://www.epa.gov/ttn/atw/pcem/pcempg.html>.
- For further technical information about the rule, contact Sharon Nizich of EPA's Office of Air Quality Planning and Standards at (919) 541-2825 or [nizich.sharon@epa.gov](mailto:nizich.sharon@epa.gov) .