management practices (e.g., management of CKD in unlined, uncovered piles near shallow ground water and surface water bodies), posing risk to human health and the environment.

## *B. Step 2: Is More Stringent Regulation Necessary and Desirable?*

EPA evaluated State and Federal regulations pertaining to CKD waste. The Agency has determined that the answer to this question is yes, more stringent regulation of CKD is necessary and desirable.

Substep 1. Are Current Practices Adequate to Limit Contaminant Release and Associated Risk?

The Agency has determined that current practices are inadequate to limit contaminant releases and associated risks. CKD is now managed primarily on-site in non-engineered landfills, piles, and ponds. Many piles and landfills lack liners, leachate controls, or run-on/run-off collection systems. In addition, while dust suppression measures exist at many facilities, it appears that they are generally ineffective at controlling airborne releases of CKD.

Substep 2. Are Current Federal and State Regulatory Controls Adequate to Address the Management of CKD?

The Agency has determined that Federal and State regulatory controls need to be improved for the proper management of CKD. Some existing regulations do apply to CKD piles, but are rarely tailored to the cement industry. In addition, problems with repeated releases of CKD to the environment suggest that implementation of existing regulations is uneven.

The Agency has analyzed the application of regulations and standards under the Clean Air Act (CAA) for cement manufacturing facilities. Implementation of the CAA requirements varies from State to State. In addition to the baseline Federal requirements,<sup>10</sup> each of the four States studied in the RTC selectively implements more stringent standards on a case-by-case basis. For example, California regulates two more pollutants than required under the NAAQS. Pennsylvania has fugitive dust controls as a permit condition and discourages the open storage of CKD.

The Agency believes that there are adequate existing authorities in the Clean Air Act to address risks via the air pathway posed by the management of CKD. However, there appears to be a need for increased regulation and implementation under the Clean Air Act. The Agency has information that indicates releases of particulate emissions at cement plants are common, persistent, and continuing. The RTC documents 21 incidents of CKD releases at 13 facilities. With the exception of one case that involved fugitive dust emissions from a CKD pile, all cases involved visible emissions violations (opacity) related to equipment malfunctions associated with CKD handling equipment (kilns, baghouses, screw conveyors) 11. In addition, persistent releases of CKD are documented in the Agency's NODA for one facility in Pennsylvania. This facility was cited for 16 air emissions violations between March 1983 and June 1989. Also, significant releases of airborne particulates at other facilities were frequently observed first-hand by Agency staff during the course of this study 12.

Numeric standards for point source discharges of wastewater from cement facilities have been established under the Clean Water Act, and are administered through the NPDES permit program (40 CFR part 122) along with industry-tailored effluent limitations for runoff from materials storage piles (40 CFR part 411). Indirect discharges via publicly owned treatment works (POTWs) are subject to general pretreatment standards under 40 CFR part 403. Wastewater discharges from individual facilities may also be subject to state water quality standards and state or local effluent discharge standards.

In addition, EPA proposed a multisector stormwater general permit under the NPDES program on November 19, 1993 (58 FR 61146). The proposed permit contains limits to control effluent discharges specific to the cement industry (among other industries) and requires each plant to develop facility-specific pollution prevention plans and demonstrate best management practices (BMP) to minimize the contact between stormwater runoff and CKD or other pollutant sources, or else remove CKD (or other constituents) before the stormwater is discharged. This permit will be in addition to previously issued and effective storm water baseline general permits that were issued in 1992 by EPA and between 1991 and 1993 by the 40 states with authorized NPDES programs. The final multi-sector storm water general permit is expected to be issued by EPA in early 1995.

With respect to ground water, there are no Federal standards that are adequate to address the risks posed by CKD via the ground water pathway. The Safe Drinking Water Act (42 U.S.C. 300 f–j) protects drinking water by setting maximum contaminant levels (MCLs) for toxic contaminants, including metals. However, drinking water standards are only protective at the point of consumption. Public water supply wells are protected through the wellhead protection program under the SDWA (41 U.S.C. 300h–7(e)).

Of the states studied in the RTC, three (California, Michigan, and Pennsylvania) have primacy for implementing the NPDES program. The program in Texas is administered by EPA but incorporates more stringent Texas water quality requirements. These four states have ground water protection programs that set non-degradation of ground water quality as a goal. In addition, Texas implements an EPAapproved wellhead protection program. Water quality regulations vary from

state to state. California's water quality program includes long range resource planning, annual inspection of all facilities, and compliance with stringent surface water and ground water quality standards. The California program also grants broad enforcement authority to its State Water Resources Control Boards. Pennsylvania and Michigan inspect major industrial dischargers (including some cement plants) annually, and enforce permit requirements. In addition, Michigan requires compliance with ground water quality standards. Pennsylvania approaches ground water protection through permit requirements for wastewater and stormwater discharges, but has no separate ground water quality standards. In Texas, cement plants are considered "minor" facilities and are not inspected annually like all facilities that have major discharges, unless the facility burns hazardous waste, has a past record of environmental violations, or has a complaint filed against it. However, Texas is considering requiring

<sup>&</sup>lt;sup>10</sup> The Clean Air Act is implemented through the State implementation plan (SIP). As explained in the RTC, the Clean Air Act as amended (see section 110(a)(2)) requires an acceptable SIP to contain detailed provisions to address: Emission limitations and control measures; monitoring requirements, review of new and modified sources for compliance with new source performance standards, prevention of significant deterioration, and non-attainment review; adequate legal authority; and a permit program.

<sup>&</sup>lt;sup>11</sup> One plant has submitted a video to the Agency that indicates that its CKD management practices have changed.

<sup>&</sup>lt;sup>12</sup> A general description of these emissions can be found in the EPA CKD sampling trip reports which are located in the support section of the RCRA docket on the Report to Congress, Docket No. F–94– RCKA–FFFFF.