# IMPACTS OF LANDFILL NEW SOURCE PERFORMANCE STANDARDS

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## ABSTRACT

On May 30, 1991, the United States Environmental Protection Agency (EPA) proposed a Rule to control landfill gas (LFG) emissions under the authority of the Clean Air Act (CAA). Since that time the Rule has been modified significantly, with an emphasis on regulating large U.S. landfills. To date, landfill owners and operators have not been affected by this new CAA regulation. However, with the Rule promulgated in early 1996 and its subsequent implementation by the states to follow by the end of the year, landfill owners and operators need to understand these new requirements and their associated costs. To this end, the goal of this paper is to provide insight into the impacts of the Rule on individual landfill sites. By performing the emission analyses specified in the Rule on actual landfills, and comparing these sites to others, an understanding can be gained on the potential impacts of the NSPS Rule's requirements on individual landfills.

## INTRODUCTION

On May 30, 1991, the United States Environmental Protection Agency (EPA) proposed a Rule to control landfill gas (LFG) emissions under the authority of the Clean Air Act (CAA). Since that time, the Rule has been modified significantly, with an emphasis on regulating large U.S. landfills. The goal of this paper is to provide insight into the impacts of the Rule on individual landfill sites. By performing the emission analyses specified in the Rule on actual landfills, and comparing these sites to others, an understanding can be gained on the potential impacts of the NSPS Rule's requirements on individual landfills.

## OVERVIEW OF THE NSPS RULE

The proposed Rule was published in the Federal Register on May 30, 1991 (pp. 24468 - 24526). The proposed Rule amends 40 CFR Parts 51, 52 and 60. The purpose of the Rule is to control LFG emissions. The target pollutants are non-methane organic compounds (NMOCs) and methane. NMOCs contribute to smog formation and some are known or suspected carcinogens. Methane emissions may contribute to global warming as a greenhouse gas. In addition, landfill emissions can cause odor problems. The Rule seeks to limit LFG emissions by adopting NMOC emissions guidelines and performance standards, and requiring LFG emission control at landfills which exceed these guidelines and standards. By controlling NMOC emissions, methane emissions also are controlled.

The Rule consists of two parts: The Guidelines under Section 111(d) (Guidelines) of the CAA pertaining to emission standards for existing landfills, and the New Source Performance Standards under Section 111(b) (NSPS) of the CAA pertaining to emission standards for new landfills. Other areas of the CAA (including mobile sources, hazardous air pollutants, permits, etc.), and other parts of the CAA amendments pertaining to solid waste facilities (i.e., incinerators, etc.) are not considered in this discussion.

### Applicability

The NSPS Rule requires LFG emission control at landfills that meet all of the following conditions:

- Landfills that receive municipal solid waste (MSW). The Rule does not address other landfills, including hazardous waste sites and construction/demolition debris landfills.
- MSW landfills that received waste after November 8, 1987. The NSPS apply to all MSW landfills that began construction, re-construction, or accepting wastes for the first time, on or after the date of publication of the proposed Rule (May 30, 1991). The Guidelines for existing landfills apply to all sites that accepted wastes on or after November 8, 1987, whether they continued to accept wastes after May 30, 1991 or not. States may have more flexibility in how they choose to implement the Rule at sites subject to the Guidelines than they have at sites subject to the NSPS.
- Landfills that exceed a maximum permit design capacity of 2,500,000 metric tons (i.e., megagrams [Mg], 1.0 Mg is approximately 1.1 imperial tons).
- Landfills that exceed a maximum NMOC emission rate of 50 Mg per year (approximately 56 imperial tons per year). Landfills will have to demonstrate that this emission limit will not be exceeded to avoid installation of an LFG control system.