




Memorandum

Date: March 15, 2018

To: Gabriella G. Garry
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From: Charles Boehmke 
Department Head
Solid Waste Management Department

Subject: Landfill Gas Management at Mission Canyon Landfill

Closed landfills can provide an important benefit to the surrounding communities. Wildlife habitats, recreational parks, botanical gardens, and golf courses are a few examples of how closed landfills can be developed to enhance the end-use of a landfill and become an asset to the community. A closed landfill that is properly maintained is environmentally sound and poses no risk to public health and safety.

Landfill gas is the product of the natural anaerobic microbiological decomposition of buried organic material, and primarily contains nearly equal amounts of carbon dioxide and methane. The amount and composition of landfill gas depends on the age, organic content, and moisture content of the buried solid waste. Soon after a landfill closes the production of landfill gas declines significantly. The composition of landfill gas now collected at Mission Canyon is primarily air with a relatively small percentage of methane.

Southern California has among the most stringent landfill regulations in place designed to reduce the emission of methane, the primary component of landfill gas, from municipal solid waste landfills. South Coast Air Quality Management District (SCAQMD) Rule 1150.1, Control of Gaseous Emissions from Municipal Solid Waste Landfills, is considered the most comprehensive landfill gas control regulation in the United States. The purpose of this rule is to reduce landfill gas emissions from landfills in order to protect the environment and ensure public health and safety.

Rule 1150.1 requires owners and operators of landfills to:

- install and operate a landfill gas control system to capture and properly dispose of landfill gas
- to install subsurface probes to measure methane levels at the perimeter of the landfill
- to measure methane levels in the air immediately above the landfill surface to ensure it is below regulatory threshold limits

The SCAQMD Rule 1150.1 integrated (area) surface methane gas regulatory limit is 25 ppm and the instantaneous surface methane gas (at any point on the landfill surface) regulatory limit is 500 ppm. The Mission Canyon Landfill has been subject to compliance with Rule 1150.1 since April 2000.

A gas control system was installed at Mission Canyons 1, 2, and 3 in 1982 to control the emission of landfill gas to the environment and to protect the health and safety of the public. The existing control system consists of 58 active vertical gas collection wells and 2.5 miles of gas transport header pipeline. A vacuum is applied to the gas wells such that landfill gas is drawn from the refuse into the gas control system. The collected landfill gas is transported through header pipelines that are situated around the landfill to the onsite flare station for disposal. Presently, approximately 350 cubic feet per minute of landfill gas is collected by the gas control system and

disposed by flaring. The collected landfill gas is approximately 10 percent methane, with the remaining 90 percent being mostly air.

Since April 2000 the Mission Canyon landfill has been in continuous compliance with the strict requirements of SCAQMD Rule 1150.1. The Sanitation Districts currently perform the following environmental monitoring in compliance with SCAQMD Rule 1150.1:

- semiannual integrated surface methane gas monitoring
- semiannual instantaneous surface methane gas monitoring
- monthly perimeter probe monitoring
- annual ambient air monitoring

The Mission Canyon Landfill Canyons 1, 2 and 3 have been closed for over 50 years. Figure 1 below is an illustration of the average integrated surface methane gas levels measured at the Mission Canyon Landfill and compares that with the South Coast Botanic Garden (Botanic Garden) in Palos Verdes California.

With the comprehensive environmental control systems in place, Mission Canyon Landfill and the use of the proposed park will not pose any adverse effects to public health and safety or the environment.

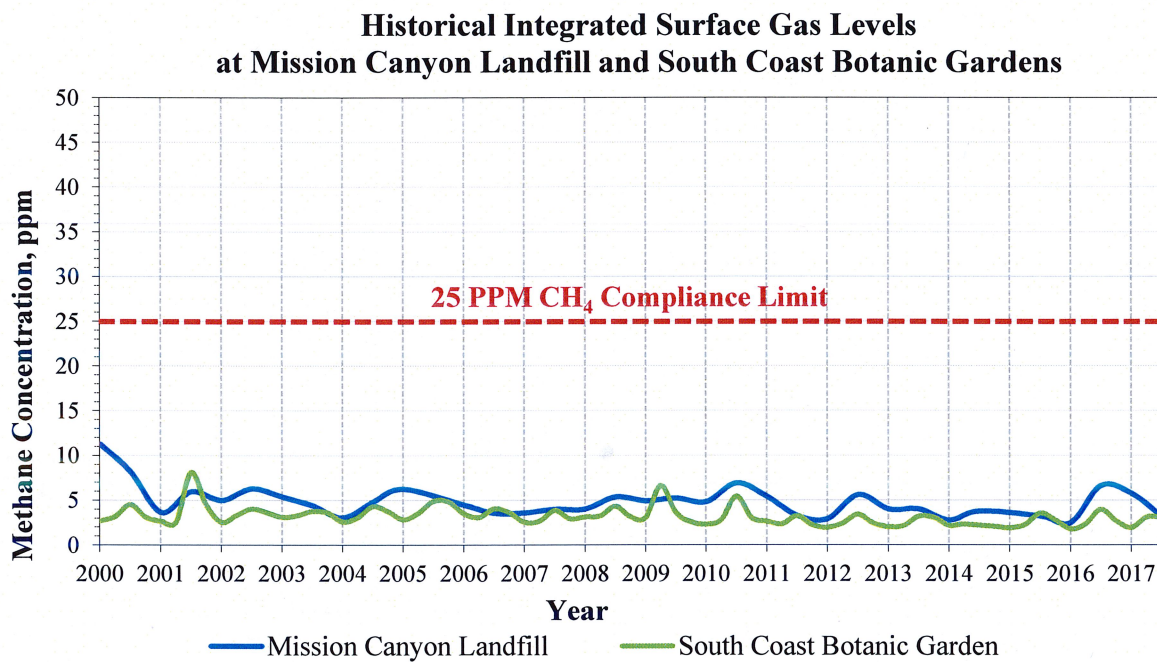


Figure 1. Historical Average Integrated Surface Gas Methane Levels