

"Modeling Turbulence in a Landfill Gas Flow: Ingress into a horizontal well"

Abstract:

Landfill gas is generated from the anaerobic decomposition of organic material in the landfill sites. These gases could be utilized as a renewable energy source by producing electricity and natural gas. Landfill gas is collected through extraction wells. Generally, horizontal wells are considered advantageous over vertical wells because of greater collection radius, faster collection time, less construction resources etc. In horizontal wells, the flow is turbulent like almost any other real life flow. Thus, it is necessary to include the turbulence in the mathematical model to better understand the behavior of the fluid in the horizontal wells. This mathematical model which includes turbulence, can be utilized to better design and construction of landfill gas collection systems to maximize the gas collection.

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