

RETURN TO USE INITIATIVE

2009 Demonstration Project

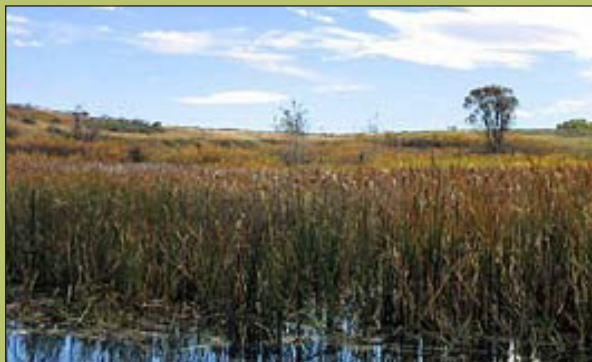
LOWRY LANDFILL: Aurora, Colorado

THE SITE: The 508-acre Lowry Landfill Superfund site (the Site) is a former landfill located 15 miles southeast of Denver. The City and County of Denver operated a municipal, hazardous and industrial waste landfill at the Site from 1966 to 1980. Waste Management of Colorado continued municipal solid waste disposal until 1990. Operations contaminated soil, shallow ground water and subsurface soil vapors with various toxins. EPA added the Site to the Superfund program's National Priorities List (NPL) in 1984.

To clean up the Site, EPA selected a remedy that included a soil cover for the landfill, an underground water barrier wall to contain contaminated ground water, ground water extraction and treatment systems, and a landfill gas collection system. Following completion of cleanup activities, ground water and soil vapor monitoring are ongoing.

THE OPPORTUNITY: The Site is located next to an active landfill. Both areas produce landfill gas, which consists primarily of methane and carbon dioxide from the decomposition of materials in the landfills. Instead of disposing of the landfill gas by burning it off, which emits greenhouse gases into the atmosphere, it could be converted into electrical power. Gas from the landfills could provide enough energy to power about 3,000 homes annually while also reducing greenhouse gas emissions. While landfill gas-to-energy systems were already operating successfully across the country, none used gas from a Superfund site and there were no active facilities in Colorado.

THE BARRIER: In 2006, the Site's remedy was in place and the property was ready for reuse. Because the proposed Superfund landfill gas-to-energy plant would be the first of its kind in Colorado, it posed logistical and administrative challenges, from permitting and approval through to design and construction.



PICTURED: Wetlands along the northern edge of the Site. (Source: EPA)

BARRIER: Logistical and administrative challenges facing the use of a new technology.

SOLUTION: Close collaboration between EPA and site stakeholders.



PICTURED: Tour of the Site's landfill gas-to-energy plant during its opening in 2008. (Source: City and County of Denver)

BEFORE: Closed, cleaned-up former landfill.

AFTER: Colorado's first landfill gas-to-energy plant. The facility generates enough energy to provide power to 3,000 homes.

THE SOLUTION: The City of Denver and Waste Management of Colorado partnered with a local utility, Xcel Energy, to discuss the best ways to productively reuse landfill gas from both landfills. The stakeholders were highly motivated by the environmental and economic benefits generated by similar facilities in other states. The parties worked together closely to address logistical and administrative challenges, and smoothly implemented the project's work plan.

THE SITE NOW: In July 2007, a groundbreaking ceremony officially launched the construction of the landfill gas-to-energy plant. It opened in September 2008. Today, the facility uses four combustion engines to convert 630 million cubic feet of gas from both landfills into 3.2 megawatts of power. Xcel Energy distributes the electrical power to area residents and businesses.



PICTURED: Groundbreaking ceremony in 2007 to launch the plant's construction. (Source: EPA)



PICTURED: View of the outside of the landfill gas-to-energy plant. (Source: EPA)

FOR MORE INFORMATION, PLEASE CONTACT: Leslie Sims, Remedial Project Manager, at (303) 312-6224 or sims.leslie@epa.gov; or Frances Costanzi, Region 8 Superfund Redevelopment Coordinator, at (303) 312-6571 or costanzi.frances@epa.gov.