

Project Name

ILR Gas Collection and Control System

Client

National Energy Resource Corporation (NERC)

Services Provided

- Design
- Technical Specifications
- Construction Oversight
- Permitting

Project Description

SAI provided engineering and environmental services in the design and construction of the Gas Collection and Control System (GCCS) at the Industrial Land Reclaiming, Inc. (ILR) Sanitary Landfill. The ILR Landfill is situated on the northern shore of the Raritan River in Edison Township and occupies 145 acres of land. Landfilling of solid waste at ILR began in 1964, with an average waste acceptance rate of 2.3 million cubic yards of waste per year. The peak gas generation capacity of the landfill was approximately 1400 cfm and it currently generates approximately 900 cfm of gas.

Approach

For the design of the GCCS, the landfill was evaluated for its energy generation potential by taking into account its age, type of waste collected, time of closure, existing and proposed environmental controls, and the location. Further information was obtained by performing pump tests, which established the area of influence and the approximate quantity of gas that could be captured from a given area in the landfill.

Design

SAI's design of the ILR GCCS comprised of a series of gas extraction wells, gas collection pipes and trenches, which collect the gas produced by the decomposition of waste and a main header line that transports this gas to a 20 MW power plant located in Sayerville. This power plant also accepts gas from the MCUA Landfill located over the Edgeboro Landfill in East Brunswick and the Edison Landfill in Edison. The landfill was found to have a very dry waste composition, which is not optimal for gas production. SAI's design features included a system hydrate the waste, thereby increasing gas production.

Technical Specifications and Construction Oversight

SAI also assisted its client with technical specifications for construction materials, methods and testing and performed construction oversight for the project.



Permitting

SAI assisted its client in successfully obtaining the following permits for this project:

- Major Disruption of a Solid Waste Facility Approval
- Soil Erosion and Sediment Control Approval
- Treatment Works Approval for condensate discharge into MCUA sewer system