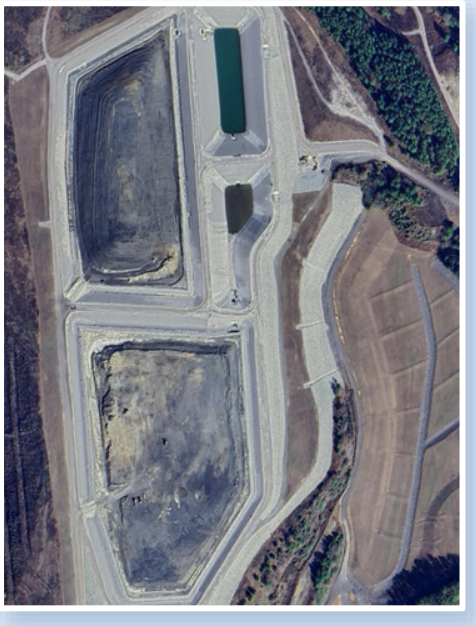
Supplemental Project Notice

EFFICIENT LANDFILL WASTEWATER MONITORING

Reducing Long-Term Management Costs Through Collaborative R&D



Example project host site showing multiple landfill cells and water management points to be monitored for treatment

PROJECT HIGHLIGHTS

- Advance and share real-time learning on best practices for quantifying landfill wastewaters
- Identify site-specific cost savings through development of streamlined analytical budgets, time period of monitoring, and selection of low-maintenance field equipment
- Provide technical assistance in the course of conducting R&D at a host site

Background, Objectives, and New Learnings

The U.S. Environmental Protection Agency's (EPA's) final effluent limitation guidelines (ELG) rule for combustion residual leachate (CRL) raises many important research questions that could ultimately influence the cost of compliance. Characterization of CRL flows and water quality for the purposes of treatability and process design currently is not well understood, and best practices for characterizing CRL do not exist. Without a comprehensive characterization of flow and water quality, treatment systems could be suboptimal and/or insufficient to meet ELG requirements, resulting in increased cost of compliance and/or permit exceedances.

This project's objective is to improve the quality and optimize the cost of required landfill wastewater characterization efforts as energy companies take steps to comply with evolving guidelines. Understand how landfill wastewater quality and quantity change over time and are influenced by factors such as landfill operations, landfill maturity, CCP material properties, and weather can be an expensive endeavor for each site due to required instrumentation, field support, sampling, and analytical and data analysis needs, as well as the duration of a study that could continue for years. Understanding how best to cost-effectively characterize waters at these sites will require industry collaboration and constant, real-time learning of best practices among sites. This project will aggregate new learnings and provide insights into the broader industry's efforts to manage waters from landfills.

Benefits

This work will benefit the public through new learnings on how to characterize landfill wastewaters to inform more effective and less costly management.

Funders will benefit from real-time, collaborative learnings that can help minimize costs and increase the quality of information gathered in landfill wastewater characterization efforts. Additionally, the project involvement will help to build a team of stakeholders and experts among participants, as well as the EPRI technical team.

Project Approach and Summary

This project will bring together industry stakeholders tasked with characterizing and developing treatment strategies for landfill wastewaters and will be focused on the industry's rapidly developing lessons learned and best practices.

1. Host site tour(s) – monitoring system setup and lessons learned
2. Technical workshop(s) – EPRI and member presentations on technical topics, such as:
   - Flow measurement instrumentation – installation, maintenance, and lessons learned
   - Water-quality parameters and reducing analytical costs
   - Supporting field data collection, weather stations, landfill operations data, etc.
   - Data analysis techniques and best practices
3. Virtual recurring meetings – facilitate real-time learning and sharing of best practices among project members and EPRI
4. Results sharing/review – examine all lessons learned and identify next steps, such as water treatment strategies and technologies

Deliverables

- Landfill Monitoring Analytical Sampling Guide
- Lessons learned and best practices for field flow measuments
- Workshop proceedings
- Virtual meeting proceedings and notes
- Host site funding-level case studies

Price of Project

Host site cost will be based on scope for the site.

Non-host site cost is fixed at $50,000 and will receive access to all learnings from host site testing.

This project is eligible for self-directed funds (SDF), and funding can be spread over multiple years.

Project Status and Schedule

This project began in the Fall of 2024 and continues for two years, concluding in 2026.

Who Should Join

Energy companies that are facing a need to treat and manage landfill wastewaters at active and legacy facilities.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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