

ENGINEERED SOLUTIONS

CASE STUDY

Automated Septage Management System



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OVERVIEW & CHALLENGE

OVERVIEW

1

Small towns often need tanks in lieu of fully developed sewage systems

2

Accurate measurement of the waste being transported is crucial

CHALLENGE

1

Managing wastewater from septic systems can be cumbersome

2

The town's process of manually tracking waste being transported was prone to human error

OVERVIEW

Small towns and rural areas often lack fully developed sewage systems, necessitating the use of septic tanks or holding tanks for waste management. These tanks are periodically emptied by trucks that transport the waste to treatment facilities. Accurate measurement of the volume of waste being transported is crucial for fair billing and efficient operations. This case study highlights the implementation of an automated septage management system for a small town in New Jersey, showcasing how our innovative solution has streamlined their processes and improved accuracy.

THE CHALLENGE

In smaller towns, managing wastewater from septic systems or holding tanks can be cumbersome. Traditionally, these systems relied on manual methods to measure and record the volume of waste, leading to inaccuracies and inefficiencies. For this New Jersey town, the process involved manually tracking the amount of waste being pumped from tanks into trucks and then transported to treatment facilities. This method was prone to human error and lacked real-time data integration, making it difficult to ensure accurate billing and operational efficiency.



SOLUTION & IMPLEMENTATION

THE SOLUTION

1

Flow Measurement
Technology

2

pH
Monitoring

3

Control Panel
With HMI

4

Automated Data
Logging

THE SOLUTION

To address these challenges, we implemented a modern, automated septage management system that integrates advanced flow measurement and data logging technologies. Our solution included the following components:

01 FLOW MEASUREMENT TECHNOLOGY

We used turbine flow meters with electronic pickups to provide accurate and real-time measurement of the waste volume being pumped into the trucks.

02 pH MONITORING

For comprehensive waste analysis, a pH probe and analyzer were included to monitor the acidity levels of the wastewater, informing chemical needs in the treatment process.

03 CONTROL PANEL WITH HMI

A user-friendly control panel with a Human-Machine Interface (HMI) allowed truck operators to easily start and stop the pumping process, ensuring precise control and monitoring.

04 AUTOMATED DATA LOGGING

The system featured automated data logging capabilities, recording the volume of waste and generating receipts. These receipts were printed on a panel-mounted printer for the trucker and sent electronically to the office for billing purposes.

IMPLEMENTATION

Our system was installed at the treatment facility to accurately log the volume of waste delivered by each truck. The process flow was as follows:

01

The truck operator initiated the pumping process using the control panel, entering their unique identification number.

02

The turbine flow meter measured the volume of waste being pumped into the truck, and the pH probe monitored the acidity levels.

03

The control panel totaled the data, and a receipt was printed for the truck operator while the same data was sent to the office electronically.

04

The treatment facility used this data for accurate billing and operational tracking.



BENEFITS & OUTCOMES

1

Increased
Accuracy

2

Operational
Efficiency

3

Real-Time Data
Integration

4

Enhanced Safety &
Compliance

BENEFITS & OUTCOMES

The implementation of our automated septage management system provided several significant benefits:

01 INCREASED ACCURACY

The electronic flow meters and automated data logging ensured precise measurement of waste volumes, eliminating human errors associated with manual tracking.

02 OPERATIONAL EFFICIENCY

The system streamlined the entire process, reducing the time and labor required for manual measurements and data entry.

03 REAL-TIME DATA INTEGRATION

The integration of real-time data allowed for better tracking of waste volumes and more accurate billing, enhancing transparency for both the treatment facility and the truck operators.

04 ENHANCED SAFETY & COMPLIANCE

The pH monitoring ensured that the wastewater met the necessary treatment standards, contributing to safer and more compliant operations.



FUTURE APPLICATIONS & SCALABILITY

Our solution demonstrates the potential for broader application across small towns and rural areas with similar wastewater management challenges. The system's scalability allows it to be customized for different sizes and types of operations, making it a versatile solution for improving septage management nationwide.

By implementing an automated septage management system, this small New Jersey town achieved significant improvements in accuracy, efficiency, and operational reliability. Our innovative solution not only meets current needs but also provides a scalable framework for future enhancements, positioning them as a model for effective wastewater management in small towns. This case study underscores our expertise and commitment to delivering advanced, tailored solutions that address the unique challenges of wastewater management.



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