



FEDERAL CORRECTIONAL INSTITUTION

Elkton, OH

Water Management Inc. was called upon to examine a Federal Correctional Institution, located in Elkton, OH, per the Federal Bureau of Prisons, regarding a significant increase in wastewater invoicing by the water and wastewater supplier, Columbiana County (the County).

An analysis of the Correctional Institution's water and wastewater billing statements for a four-year period illustrated that water use had increased 11% while wastewater use has increased 63%.

The inconsistency in the billing patterns indicated that a permanent change in the billing, metering, or wastewater discharging structure had occurred. Upon interview of correctional facility staff, it was learned that the County had installed new wastewater metering devices and flow recorders before the reported increase in wastewater charges. Since a change in the wastewater metering device had occurred, it was a logical decision for WMI to test the total flow leaving the Correctional Institution with our own equipment.

Water Management, Inc. utilized the Stingray Portable Level-Velocity system to check the validity of the County meter readings. The Stingray is a level and velocity meter used to measure flow. Two separate readings with the Stingray unit were conducted, and consisted of metering the wastewater with the portable Stingray device, while simultaneously reading the compound water supply meter for the same time duration. The readings taken using the Stingray system differed from those recorded by the County's wastewater metering system. The first reading showed 25% less flow for this duration than the County's metering system, while the second reading revealed 23% less flow when compared to the County's metering system.

WMI's results indicated that when the County changed the wastewater metering devices, the required equipment inputs were not correctly updated. Calibration of metering devices upon installation is essential for accurate recording.

WMI recommended a simple change to the inputs on the existing metering equipment, which began recording sewer usage to within 85%-90% of the measured water supply usage and resulted in a huge credit of \$276,000 for the Correctional Institution.



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