

County of Santa Cruz effectively controls H₂S in its wastewater treatment plant

Qsenz's spectrolyser monitors and controls the dosing of chemicals to reduce H₂S, improving the efficiency of the dosing, diminishing the odor problem, protecting the environment and lowering the operational costs.



Background

County of Santa Cruz discharges raw sewage to its wastewater treatment plant (WWTP). Some of the mains have long residence times and suffer from elevated dissolved H₂S concentrations, especially in the summer when temperatures are high and odor-producing bacteria are more active. At low concentrations H₂S causes a noxious odor, and at higher concentrations, H₂S can be lethal. In addition H₂S causes concrete corrosion, which can impact the structural stability of the sewer mains, resulting in potential harm to the environment. The Santa Cruz WWTP is located in a highly populated area and odor complaints are common when sulfide concentrations peak. To combat this problem, the county doses a nitrate-based odor control chemical upstream of the WWTP. While the odor control chemicals are effective at reducing dissolved sulfide concentrations, the amount of chemical to dose is difficult to optimize due to the rapidly fluctuating concentration of dissolved sulfide. This results in wasted chemical during over-dosing, and potential odor complaints during under-dosing.

s::can's solution

In order to more accurately measure and control dissolved sulfide concentrations in real-time, Santa Cruz County installed the s::can spectro::lyser™ downstream of its chemical dosing facility.

One of the big advantages of the spectro::lyser™ is that it can measure many important wastewater parameters simultaneously including: nitrate, nitrite, COD, BOD, TSS, and dissolved H₂S. In order to accurately dose the nitrate-based odor control chemical in

Santa Cruz, key parameters were measured:

- Dissolved H₂S
- Nitrate concentration

By simultaneously measuring these two parameters, the county of Santa Cruz is not only able to monitor the concentration of hydrogen sulfide, but also monitor whether it is overdosing its nitrate-based control chemical. The installation results in better control of H₂S and cost savings.

