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Time and time again McNeill Water & Wastewater is able to deliver tremendous capital and operating savings, reducing total overall wastewater treatment costs. With over 800 plants installed worldwide, McNeill has the experience, patented technology and proven processes to deliver more plant for the money. These days, when every penny matters, you owe it to yourself to discover what a difference The McNeill Promise makes.

## McNeill Delivers...

### Carolina Meadows Wastewater Treatment Facility Chapel Hill, North Carolina



Rather than destroy the existing Steel Package Plant McNeill designed and constructed a new Concrete "Quad" Plant and utilized the entire existing facility as Sludge Holding and Flow Equalization Zones of the Completed 350,000 GPD Plant thus saving a substantial amount of money and time. The new plant is designed as a MLE Process Plant as Biological Nutrient Removal was a requirement. The Plant was placed on line in 2008 and is currently meeting all permit requirements.

**Call to find out how much McNeill can save you on your next project!**



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## PROBLEMSOLVER

By William Paul

# Dosing for Odor Control

*The South Coast Water District (SCWD) provides freshwater and sewer service to more than 40,000 residents and two million visitors per year in the California coastal communities of Dana Point, South Laguna Beach and San Clemente. The district delivers 7 million gal of water each day to homes and businesses and removes 4 million gal of wastewater for treatment.*



## Customers breathe easier after district implements a hydrogen sulfide control plan

The SCWD's facilities are extensive. The sewer system contains 136 miles of pipelines, 3,800 manholes, 14 lift stations and three miles of force mains. The district's commitment to quality service is evident in its efforts to meet or exceed state and federal standards through disciplined maintenance and repair, as well as the addition of capital improvements to its facilities.

### Toxic Odor Problem

Lift Station Nine is located in the environmentally sensitive marina area of Dana Point Harbor, with the force main discharge manhole very near a highly used jogging and bike path. Restaurants and businesses provide the lift station's primary influent.

Unfortunately, most of the restaurants in the marina area are older, meaning that they do not have the grease interceptors required of new food service establishments. The influent to the lift station, therefore, contains an inordinate amount of grease and food wastes. Rapidly decaying waste and normal sewage, along with long periods of very low flow, provide an environment for heavy production of liquid sulfides. Add the turbulence that is created as the effluent of the force main drops almost 10 ft to the floor of the force main discharge manhole, and the ideal situation exists for the release of extremely high levels of hydrogen sulfide gas (H<sub>2</sub>S). The result is both significant odor complaints and corrosive damage to the manhole cover, ring and lining.

SCWD turned to BioMagic for a solution. To determine the extent of the problem, baseline measurements were taken in the force main discharge manhole for one week using an OdaLog H<sub>2</sub>S data logger. The average H<sub>2</sub>S concentration for the baseline test was 527 ppm and at least once each day, H<sub>2</sub>S levels exceeded the instrument's 1,000 ppm upper limit, meaning the air inside the manhole was literally toxic.

### Resolution & Results

A chemical injection system was set up to deliver BioMagic's M6 BioOdorStop product directly into the wet well. Because of the extremely high sulfide levels, an aggressive dosing scheme of 5 gal per day (gpd) was implemented. This dosing was semi-continuous, delivering about 1.5 ounces every three minutes.

H<sub>2</sub>S levels dropped dramatically to fewer than 25 ppm during the 15 hours after treatment began—a 20-times reduction. Dosing continued at 5 gpd for an additional 17 days. Average H<sub>2</sub>S levels were reduced even further during this time frame to 9 ppm.

Dosing was reduced to 3 gpd, which was the maintenance dosing level that was originally agreed on. Treatment continued at this level for about one additional month. Testing showed that average H<sub>2</sub>S levels had dropped to 2 ppm. Odor complaints had been eliminated.

Eight weeks after initial treatment, average H<sub>2</sub>S readings were even better, having been reduced further to 0 ppm, with minor spikes of 2 to 15 ppm. Despite the option of reducing M6 BioOdorStop dosing to lower costs further, the district decided to stay with the 3-gpd maintenance dosing. Odor complaints had been eliminated, corrosion damage had been stopped and SCWD and its customers are all breathing easier. **WWD**

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