

CASE STUDY 4 THE BESOS WASTEWATER TREATMENT PLANT



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PURAFIL ESD ELIMINATES OFFENSIVE ODORS 4 THE BESOS WASTEWATER TREATMENT PLANT



ABOUT THE PLANT

Located in Northeastern Barcelona on the Mediterranean Sea, the recently renovated Besos Wastewater Treatment Plant (WWTP) is a revolutionary solution for more than two million inhabitants. The new 900,000 ft², underground facility is the last stage in the city's water cycle and it now treats more than 70 percent of the city of Barcelona's wastewater and its surrounding towns: Sant Adria de Besos, Santa Coloma de Gramanet, Badalona, Montgat and Tiana.

THE PROBLEM

Barcelona, the capital of Catalonia, is the second largest city in Spain. With a thriving population, the city also has a bustling tourist industry. In fact, the city's 74-acre Forum, which is also located on the Mediterranean Sea just north of downtown, is a main attraction for residents and tourists alike. The Forum consists of plazas, parks, ports, luxury hotels, a concert arena, a convention center and a public square complete with an amusement park.

While the population and the tourist traffic in Barcelona have continued to grow to overwhelming proportions, odors from the cities' increasing wastewater also grew. Specifically, odors from existing concentrations of H₂S and NH₃ in the wastewater were very prevalent. Both gases emit pungent, irritating odors if left untreated.

In order to eliminate the poignant odors while maximizing on a visually pleasing atmosphere, the Ministry of Environment sought to enlarge and update the Besos WWTP. Due to the area's growth spurt, the space was limited. Therefore, the proposed solution for the necessary wastewater treatment plant was to construct the plant completely underground. The renovated Besos WWTP was constructed beneath the Barcelona Forum's premium accommodations, which intensified the primary requirement for guaranteed odor control.

PURAFIL ESD PROVIDES THE SOLUTION

Purafil was suggested to provide odor control for the Besos WWTP because the products and equipment can be customized to specifically eliminate the odorous gases found in wastewater while providing 100 percent odor removal for the heavily populated area. Initially, nearly 100 Purafil ESD Drum-Scrubber odor control systems complete with Purafil's Odoroxidant™ and Odormix™

dry-scrubbing media were selected to remove the odors and ventilate the densely populated area's WWTP.

MediaSAKs™ containing Purafil Odoroxidant™ and Odormix™ media sit inside the Drum Scrubbers located at the Besos WWTP. Once the air enters the scrubbers, the odorous gases are trapped within the media and the clean air is discharged out of the scrubbers' centrifugal air ventilator.

Once the facility's spacing and the enduser's overall goal were reassessed, 16 Purafil Side Access Units (PSAs) were also added to several rooms of the Besos WWTP. Although PSAs are typically used in either industrial or commercial environments, the systems' versatile ability to remove both particulate and gaseous pollutants was the perfect addition to the Besos WWTP. The systems are individually engineered to the customers' size parameters and to meet the customers' specific odor needs.



SEVERAL PURAFIL® ESD DRUM-SCRUBBER INSIDE THE BESOS WWTP WORK TOGETHER TO REMOVE THE ODORS FROM THE CITIES' WASTEWATER.



PURAFIL® SIDE ACCESS SYSTEMS WITHIN THE BESOS WWTP



Each PSA contains MediaPAK modules filled with the users' choice of Purafil media for an engineered solution that will permanently eliminate the largest percentage of the odorous gases through chemisorption. The Purafil units are filled with various media to eliminate the prevalent gases specific to their location within the wastewater treatment plant. For instance, 0.2 ppm of H₂S and 0.3 ppm of Mercaptans were detected at the plant's inlet. To eliminate these odorous gases, a PSA filled with Purafil Select and Purafil CP Blend Select media was used.



PURAFIL® MEDIAPAK MODULES

The clean air solutions that Purafil provided were ultimately successful in removing the odorous gases from the air. The Forum is a premier tourist attraction located directly above the Besos WWTP, but the unsuspecting nose can longer detect the once stifling scents.

In fact, once the Besos WWTP facility engineers realized the Purafil Drum Scrubbers, PSAs and media were successful in removing the prevalent odors, they placed an order for additional units. For the facility engineers, a Besos WWTP expansion indicated a larger need for odor removal and Purafil products proved to be the primary gas-phase filtration solution to meet the plant's needs.

ABOUT PURAFIL ESD

Purafil ESD is the premier single-source provider of clean air throughout North America and Europe. A division of Purafil, Inc., Purafil ESD manufactures a broad range of dry-chemical media and scrubbers that remove odors, prevent toxic gas releases, and prevent corrosion of electronics.

Call Purafil ESD at 1-800-222-6367 for assistance with your air quality concerns or visit our Web site at www.purafil.com.

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