



LEADING LABORATORY

El Paso, Texas

International Water Quality Laboratory opens

The grand opening was held in May for the CH2M HILL-designed International Water Quality Laboratory in El Paso, Texas, a cutting-edge municipal facility for analyzing water and wastewater.

"The International Water Quality Laboratory will benefit El Paso Water Utilities for many years to come," said Scott Higbee, assistant project manager. "It stands as a testament to the foresight and cooperation of various agencies in this region."

The 27,000-square-foot facility is located adjacent to the Haskell R. Street Wastewater Treatment Plant in central El Paso and was funded through existing water and wastewater rates.

Led by Regan Giese, the CH2M HILL project team provided a broad spectrum of services, from the feasibility

study to design and support during construction. This \$7.6 million lab, combined with work on the Upper Valley Water Treatment Plant, established CH2M HILL in the area and led to the opening of the firm's El Paso office in 2002.

The new facility includes 12,300 square feet of laboratory space, an industrial pretreatment facility and wastewater division offices. It replaces four separate facilities located throughout the city.

Combining laboratory services at a single location is more efficient, economical and promotes cooperation between various agencies and municipal districts throughout the region, which includes western Texas, southern New Mexico and Mexico. In addition, the location and design promotes cost effectiveness, flexibility, and environmental sensitivity.

The facility has an open design in which individual lab modules are provided for each type of testing to mitigate cross-contamination among samples. The building blends in with existing historic buildings in the area and features an enhanced security system and a dedicated data management system.

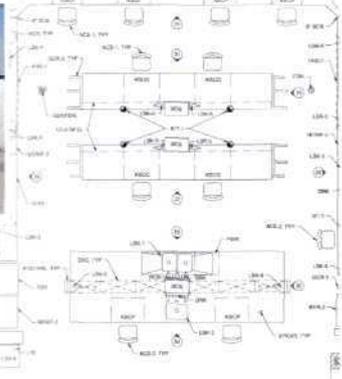
In addition, the laboratory was designed with future



The IWQL facility houses labs, an industrial pretreatment facility, and wastewater division offices.



Laboratory workstations benefit from natural light and state-of-the-art equipment for sensitive and complex testing requirements.



The lab modules use a unique negative-pressurized, single-pass ventilation system to prevent cross-contamination.

space and testing needs in mind. Features, such as open ceilings with exposed ductwork and removable islands that are prewired for future instruments, allow easy access to utilities and flexibility for reconfiguration as new systems and technologies become available. Materials selection, such as flooring made of rubber with a high recycled-material content and casework made from chemical-resistant laminate,

support the laboratory's dedication to sustainability.

Laboratory personnel receive 40,000 samples each year and perform 200,000 chemical and biological analyses. The number of tests has been steadily climbing due to new and more stringent regulations and is expected to exceed 300,000 per year by 2012. UN Ltd

Minimizing cross-contamination, maximizing energy efficiency

With laboratory facilities costing approximately \$400 per square foot, combination water and wastewater laboratories are extremely economical. However, these facilities are relatively uncommon at the municipal level. Part of the challenge is practical: wastewater samples may contaminate potable water samples. As a result, many municipal utilities choose to maintain separate facilities.

"El Paso is very progressive in deciding to combine their resources

for water and wastewater into a single facility," said lab design lead Earl Hadfield.

CH2M HILL minimized the potential for cross-contamination and maximized efficiency at the lab with an open design. Stemming from a central corridor are separate U-shaped lab modules for each type of testing, including nutrients, metals (trace and ultra-trace), volatile organics, semi-volatile organics, organics preparation, wet chemistry, water microbiology,

wastewater microbiology, biochemical oxygen demand and solids.

Unlike traditional laboratories where testing areas are separated by doors, these modules have no doors to the central corridor. A negative-pressurized, single-pass ventilation system ensures clean air flow into each of the modules from the corridor. Resulting "dirty" air is exhausted through vents and fume hoods in each module. (Traditional designs rely on a negative-pressure balance when doors are opened;

clogged filters can disrupt the balance and lead to cross-contamination and safety concerns.)

At a rate of 42,000 cubic feet per minute of conditioned air, the heating, ventilating and air conditioning system uses a lot of energy. To improve efficiency, CH2M HILL used a heat-pipe energy recovery system, and the supply and exhaust of air is reduced to 50 percent when the lab is closed.



Willie Water Drop, El Paso Water Utilities' mascot.