

TRENDS

TRICKS OF THE TRADE ■ EDITED BY WENDY ANGEL



Turning Browns into Greens

Buyers must face several hurdles before redeveloping a landfill.

WORLD CLASS GOLF COURSES continue to spring up from the most unlikely places. In Newport Beach, Calif., plans are underway to redevelop the Coyote Canyon Landfill into an upscale golf course. Closed in 1990, the 300-acre site contains approximately 60 million cubic yards of non-hazardous and inert refuse. Redeveloping landfills into golf courses or other facilities can have commercial and community benefits, yet legal and technical concerns must first be addressed.

Changes to the Comprehensive Environmental Response, Compensation, and Liability Act in 2002 offer some liability protection for sites that contain hazardous substances if the purchaser: made all inquiries into the site's past uses; reports what is discovered in the investigations and cooperates with authorities; complies with deed restrictions and controls; and cares appropriately for the site.

Buyers also face technical challenges, including mitigating methane gas hazards and providing proper foundations for the redevelopment. Addressing landfill gas (LFG) issues was especially important to City of Industry, Calif., as it developed its Industry Hills Recre-

ation and Conference Center, which is near downtown Los Angeles. The 617-acre site houses a 155-acre closed landfill containing about 3.6 million tons of municipal waste. The development includes two golf courses, a conference center, an Olympic-sized swimming pool, a tennis complex, an equestrian center, a laundry facility and a hotel.

The city manages LFG using two systems. The first was constructed in 1974 and collects and destroys the gas at a blower/flare station to prevent accumulation under the development's structures and migration. The second system was constructed in 1980 and, until 2003, supplied medium Btu fuel for convention center boilers and water heaters for the Olympic-size pool and laundry complex.

In 2003, the system was converted to blend processed LFG with natural gas to power one of two reciprocating engine generator sets. Waste heat is recovered from the sets, with the resulting hot water used in the convention center. The LFG process facility is capable of supplying approximately 2,100 MM Btu of fuel each month, saving City of Industry \$10,000 to \$15,000 in monthly natural gas costs.

Operation and maintenance of the gas system is regulated by numerous state and local enforcement agencies and the design engineers' operating criteria, which focus on health and safety, odor control, maintenance repair, and access and staff coordination. For its achievements, The Industry Hills Recreation and Conference Center was awarded the American Society of Civil Engineers Outstanding Civil Engineering Achievement Award in 1981 and the Solid Waste Association of North America Gold Award for Landfill Gas Projects in 1997.

The challenges inherent in redevelopment of a closed landfill are substantial. However, experience shows that with the proper planning mechanisms and resources, redeveloping browns into greens can continue to be successful.

— *Michael McLaughlin and Robert Gardner are senior vice presidents with SCS Engineers, headquartered in Long Beach, Calif. McLaughlin is based in Reston, Va., and Gardner is based in Norfolk, Va.*

