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## NEW MEXICO

The past year has been a busy one for IWS in working with stakeholders in the New Mexico wastewater community and executing on several Design-Build projects. In addition, IWS has had the opportunity to work on some cutting-edge projects that leverage the sustainability aspects of onsite wastewater systems. New Mexico seems to be leading the country in their approach to sustainable development and the role of water reuse.

Although our projects have included a variety of locations in New Mexico, IWS has been very active in the Santa Fe area and currently is under Design-Build contracts to design, construct, and start-up three Wastewater Treatment Facilities. All of the projects have a sustainability aspect to them and utilize advance treatment of wastewater and implement reuse of the effluent following treatment.

### Rancho Encantado – A World Class Resort

Rancho Encantado is a legendary resort known as a peaceful retreat for the rich and famous. The resort has hosted some of the world's most influential people including Prince Rainer, Princess Grace and the Dalai Lama. In 2006, the resort began a \$35 million renovation to upgrade all the lodging, restaurants, and spa facilities.



*Aerial view of the Rancho Encantado Resort during renovation*

IWS was awarded a Design-Build contract for the wastewater system and is currently in the final stages of constructing the system. IWS provided all the engineering and construction with in-house resources. From notice to proceed to final construction the project will be completed within 6 months. IWS was able accelerate the schedule by:

- fast tracking the project through NMED by responding quickly to comments; and
- utilizing the Design-Build contracting mechanism.

The facilities include 69 rooms and over 300 seats of restaurant capacity. The system was designed to treat 20,000 gallons per day with the following treatment train:

- 2, 20,000 gallon primary septic tanks;
- 1, 20,000 gallon anoxic tank;
- 1, 20,000 gallon recirculation tank;
- 6, Orenco Advantex pods;
- 1, upflow nitrogen reduction filter;
- 1, 5,000 gallon dosing tank; and
- 12,000 ft<sup>2</sup> of Geoflow subsurface drip irrigation system.



*Installation of four 20,000 Gallon Tanks ( Primary And Recirc)*

b) This project offers an exciting opportunity for IWS as it is a showpiece for our newly designed innovative Nitrogen Reduction Upflow Filter to be implemented within the treatment process to meet the ever reducing nitrogen limits. The Nitrogen Reduction Filter will follow the Advantex textile filters and is expected to reduce the post Avantex nitrogen effluent concentrations by as much as 60 – 70% with a single pass.



*Construction of the outer perimeter of the Upflow Nitrogen Reduction Filter.*

Construction of the wastewater treatment facility is on schedule to be completed in the Fall. The reopening of the resort is scheduled for Summer of 2008. IWS worked closely with Roger Shafer of SCG Enterprises ([scgenterprises.com](http://scgenterprises.com)), the local representative for wastewater treatment equipment in New Mexico and Colorado. Roger was a great technical resource for this project as well as the others that IWS is currently executing in New Mexico.



*Construction of treatment system nears completion*

### **Vista De Sangres – Single Family Development**

Vista De Sangres is a residential development located near the Santa Fe Airport that has 25 single family homes and includes walking trails and a park. Treated effluent from the wastewater system is being re-used for irrigation in the development's open space areas.

IWS and Worrell Water Technologies (WWT) of Charlottesville, VA were the Design-Build team for the project, with WWT providing the treatment system design and IWS providing the dispersal system design and construction of the overall system. IWS often teams with local engineering firms to provide clients best value and additional resources to complete the project.

The design flow of the system is 10,000 gallons per day, and is treated with the following treatment process: a) 1, 25,000 gallon primary septic/anoxic tank (20,000/5,000); b) 1, 12,000 gallon recirculation tank (7,000 recirc/5,000 discharge); c) 1, 8,000 gallon dosing tank; d) 4, Orenco Advantex pods; and e) 4.8 acres of Geoflow subsurface drip irrigation.



*IWS preparing to install drip irrigation with a Vibratory plow.*

Dave Maciolek, Senior Environmental Engineer for WWT, commented on the sustainability issues related to the project "We utilized the treated wastewater to create some irrigated grasslands which enhanced the native vegetation at the site".

The project has been permitted and designed, and construction is nearly complete. The system is comprised of primary treatment tanks as well as advanced treatment utilizing Advantex textile filters. The treated effluent is recycled as subsurface irrigation for an open space area.

## La Pradera – A model of Sustainable Development

In July, IWS began the initial steps of their Design-Build contract for the Wastewater Treatment Facility serving the La Pradera Phases 2 – 6 Development in Santa Fe, New Mexico.



The project is environmentally sensitive focusing on water management and conservation. The subdivision will consist of 157 single family homes, on the south end of Santa Fe.

*Aerial view of the La Pradera Development*

The homes are environmentally-conscious with innovative water conservation technologies throughout. The average wastewater flow per home is estimated to be 120 gallons per day which is low relative to standard wastewater flows. The wastewater treatment plant will treat and recycle the effluent for landscape irrigation and potentially to reuse in the homes for toilets.

IWS is currently in the design phase with construction to begin in late fall. The treatment system includes 3, 25,000 gallon primary tanks; 1, 10,000 gallon anoxic tank; 1, 25,000 gallon recirculation tank; 9, AX-100 Advantex Filter Pods and 1, 15,000 gallon dosing tank.

Jamie Miller, PE (New Mexico), Principal Engineer at IWS says, "The environmental conservation, planning, and engineering demonstrated at La Pradera is taking hold nationwide. Santa Fe is at the forefront of this environmental wave due to the environmentally knowledgeable residents coupled with the County and State's progressive regulations that tend to allow the implementation of more innovative methods of treating and disposing of wastewater".

IWS believes that as regulators across the county begin to notice the innovative solutions that are being implemented for projects like La Pradera, they will become increasingly focused on encouraging similar sustainable solutions for developments everywhere. In addition to a friendly regulatory environment in New Mexico, private developers are beginning to realize that they can implement cost effective methods for treatment and disposal of wastewater while improving the environmental sustainability of their developments. IWS is excited to be at the forefront of the movement.