

Western White House Turns Green with Innovative On-Site Treatment System

By: Melinda Suchecki

Texas Governor and Presidential hopeful George W. Bush has had quite a busy year. As if running the second largest State in the country wouldn't keep someone busy enough, he has sent his twin daughters off to college, campaigned across the United States for the highest office in the World and is building his dream house.



Texas Governor and Presidential hopeful George W. Bush takes time off the campaign trail to discuss his State of the Art On-Site Wastewater Recycling System.

Governor Bush recently took time off his busy campaign schedule to discuss the attributes of his unique on-site system with TOWA Board Member Ron Suchecki, Texas General Manager of Hoot Aerobic Systems and Jim Prochaska, P.E., President of Lighthouse Treatment Systems.

His 1500 acre Ranch is located near Crawford, Texas about 30 minutes west of Waco. "This project has provided for some very unique and challenging design considerations" says Jim, who is also the Engineer for the project.

"We had to design an On-Site system that can survive with the input of a single caretaker, yet automatically ramp up to handle a party of 50, without missing a beat."

Ron and Jim traveled to Austin to meet with the Architects, Heymann and Associates to discuss the project. The Bushes were described as "Very Private People" however, with their high profile in Texas and National Politics, and the uncertainty of where he will spend the majority of time for the next eight years, the design became a challenge.

"We were honored to be approached with the project" said Ron, "however as the scope of the project was revealed to us, the honor quickly turned to into a challenge."

"As an Aerobic System Manufacturer, I wanted to

incorporate my technology, however we had to be realistic on what it could do alone. The challenge was to design a system that could sustain itself, despite the uncertain immediate future."

This is going to be the permanent residence of the Bushes, the question is just when. Incorporated into the design of the home are many unique "Environmentally Friendly" features. Aside from the Grey and Black Water Recycling and Irrigation Systems, the home features Geothermal Heating, Active and Passive Solar Energy, and a rainwater collection system with a 40,000 gallon underground cistern. The purpose of the cistern and a separate Grey water system is for surface irrigation of fruit trees.

"We worked with the architects and plumbers to ensure that there was separation of the Grey and Black water lines and confirmed their separation prior to the pour of the slab. There was resistance at first on the part of the plumbers, however once they understood what we were trying to do, everything went off without a hitch." One person told me there was "No way they would get it all right, it would be too easy to cross the lines", Ron's response was "Then how do they keep the Hot and Cold water separate?"



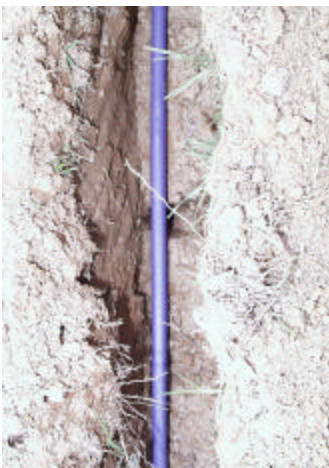
The Black water system features over 2000 gallons of pre-treatment and equalization tanks which meter dose to a 1000 GPD Hoot Aerobic System. However, the treatment process doesn't stop there. The effluent leaves the Aerobic System through a Polylok Effluent Filter and enters a Re-circulating Media Filter, which acts like a sand filter. The effluent passes through a unique media several times prior to discharge from the filter, where it passes through yet another media filter before entering the pump tank. "With this design we were able to incorporate the high efficiency of an extended Aeration System with the start up and shock load capability of a Sand filter.

However, the established Aeration system will prevent the potential plugging effect seen in Sand Filters because the water enters in 95% reduced of both BOD and TSS.”

The effluent leaves the re-circulating filter and is stored in a pump tank. The Hoot Control Center operates the Lighthouse Beacon Filtration System. The filter not only performs



Effluent Filtration, but automatically back flushes and performs scheduled Field Flush cycles as well. The effluent is filtered through the 3 dimensional 100 micron filter before being pumped 350 feet away to a four zone Drip Irrigation Field.



The drip tubing is Netafim Bio-line .62 GPH and features a pressure compensating emitter design. The pressure compensating design ensures even distribution throughout the entire field.

The zones are automatically advanced each time the system doses ensuring even distribution. If low levels of water usage are observed, the system can utilize just one zone to encourage plant growth.

Further complicating the design was the system location. If the system was to gravity flow, it would require all of the treatment equipment to be placed right outside the bedroom of George and Laura, between them and their new 7 acre lake. This proved to be unacceptable.

The system needed both a Grey and Blackwater lift station from the main house to pump to the location of the equipment, over 500 feet away behind the garage. The guest house gravity flows to the system. All of the controls are remotely mounted inside a specially designed utility room inside the middle of the garage. Over 2 miles of wiring were used to complete remote location project.

Each tank has duplex pumps and a separate, independent alarm circuit that goes to an Alarm System Control panel. The system has the ability to remotely alert if one on the duplex pumps fails, latch to the next, then independently alert of a high water situation. This system is in every tank, and works even in the event of a power failure. The system is remotely monitored by a alarm company that can tell service personnel exactly what the problem is and a determination can be made if it requires immediate attention, or if a problem can wait until the next day. For example, if one of the pumps in the re-circulation system has failed, then it may not require immediate attention. If there is a high water level in the lift station on the main house, well, there will be three people racing to see who gets out there first.

The Hoot Systems, Lift Stations and standard as well as custom tanks to complete the project were all pre-cast concrete, made by CPI of Waco, Texas.

Mark Kieran of Brazos Wastewater was the Installer of the system, with the majority of the hook-up being completed by Ron, Jim and Frank, Jim’s father from Lorena.



The incorporation of an innovative, On-Site Wastewater strategy is a testament to the acceptance of On-Site as a long term treatment solution.

The Bushes incorporation of environmentally sensitive approaches to their new home are examples of what individuals can do to create a better place for all of us to live.

Hoot Aerobic Systems, Lighthouse Treatment Systems, CPI, and Polylok are all proud Corporate Sponsors of TOWA.