

LAKE SHASTA OWTS AIMS TO SUSTAIN RECREATIONAL USE WHILE PROTECTING SENSITIVE ENVIRONMENTS

OVERVIEW

The largest reservoir in California, Lake Shasta, is a haven for recreational activity. The entire lake along with the resorts and marinas along its shores are all part of the Shasta-Trinity National Recreation Area administered by the US Forest Service. Prior to September 2006, houseboats and marinas were allowed to discharge grey water including wash water directly into the lake. As the number of visitors using these houseboats and the number of resorts on the lake increased, there became a need to improve disposal practices in order to protect the sensitive environment around the lake and to preserve water quality. The US Forest Service introduced a regulation change in response to the State of California Regional Water Quality Control Board (RWQCB) Resolution No. 5-01-211 which authorized the Executive Officer to enter into a Memorandum of Understanding with the Forest Service to eliminate the discharge of grey water from houseboats into Shasta Lake. Essentially, the resolution stopped houseboats from dumping grey water into the lake. It also required the marinas to provide temporary storage and holding of the grey water, and to either be: i) hauled off site for disposal, or ii) as an alternative to expensive offsite hauling, disposed of in onsite drainfields.

The Shasta County Environmental Health Department in conjunction with the US Forest Service developed new guidelines for sewage disposal, including collectively containing the grey water and black water from the houseboats and disposing of it onsite using drainfields. The requirements include 200 foot setbacks for drainfield location from the surface water. They also require that these onsite septic systems be located on less than a 30 percent slope. Due to varying soil conditions in the area, soils must pass a percolation test at a rate of 60-120 minutes per inch before a system will be approved.

In addition to obtaining Shasta County

approval for construction, each marina was required to submit a Report of Waste Discharge to the RWQCB for approval and issuance of Waste Discharge Requirements (WDRs). The WDRs provide site specific authorization for use and establish monitoring and reporting requirements.

ONSITE TREATMENT DESIGNS

A number of different types of treatment system designs are currently being used in the area including chamber drainfield systems. The type of system selected for each marina installation is a function of the location, slope, and type of soils.

The onsite septic system at Holiday Harbor Marina is located in an upper parking lot area approximately 300 feet from Interstate 5 in O'Brien, CA. Effluent from the dockside pumpout systems is piped to an existing onshore storage tank, transferred to a tank truck, and transported to the drainfields. The system includes two, 10,000 gallon septic tanks with an Orenco® 18 inch Bio-Tube Pump Vault which pressure doses to a five-way Orenco Hydrosplitter. These are followed by 2,072 feet of Quick4® Equalizer® 36 chambers from Infiltrator Systems Inc. The chambers are installed in five drainfields ranging from 336 to 568 linear feet, including thirty-four, four-inch inspection ports with surface access valve boxes.

At the Holiday Flotels Inc. Resort at Packers Bay Marina, the wastewater disposal system includes two, 3,000-gallon septic tanks with the first tank incorporating an Orenco effluent filter and the second tank including duplex pumps also from Orenco. The wastewater then flows through a flow meter to a 10-way pressurized hydro-splitter, which disperses it to a drainfield with 624 feet of Infiltrator Quick4 Equalizer 36 leaching chambers. The Quick4 EQ36 chambers offered greater storage capacity for peak flows such as are common on summer weekends and were also selected due to ease of



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delivery and installation.

Similar systems have been installed around the lake including one at Jones Valley Marina and another grey water disposal system at Sugarloaf Marina, both in Redding.

CONCLUSION

In spite of the revised regulations, the resulting drainfield installations helped to reduce the cost for treatment due to the elimination of septage hauling and increased capacity of the onsite systems to handle peak flows and future growth at each of the marina locations. Additional projects are currently in the planning process around the lake as a result of the success of the initial marina system installations. ●

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At the Jones Valley Marina, Infiltrator Quick4 Equalizer 36 chambers were chosen for the 1,700 linear foot drainfield due to ease of delivery and installation on sloping terrain.