Proposed Design of a Recirculating Sand Filter for Bahay Pag-asa, Retreat and Conference Center and Ugnayang La Salle

A Research Proposal Presented to the Faculty of Environmental and Sanitary Engineering
College of Engineering, Architecture, and Technology
De La Salle University – Dasmariñas
Dasmariñas City

In Partial Fulfillment of Requirements for the Degree
Bachelor of Science in Environmental and Sanitary Engineering

Alagos, Deolito Jr B.
Delos Reyes, Carl Evan A.
Jongco, Robert Justin A.
ESE51

March 2013

ABSTRACT

The purpose of this study is to present a design of a Recirculating Sand Filter (RSF) that will be used as wastewater treatment facility for Bahay Pag-asa, Retreat and Conference Center and Ugnayang La Salle of De La Salle University – Dasmariñas. A RSF is an on-site wastewater treatment system for producers of small to meduim (2 to 4000m^3/day or 500 to 1,000,000 gallons/day) wastewater flows. This cost effective, low maintenance technology provides ideal treatment systems for parks, schools, office complexes, resorts, and even small communities with effluent sewer collection systems. No chemicals needed, space requirements are reasonably small, construction costs are moderate, and maintenance and monitoring do not require highly trained personnel. The RSF purifies septic tank effluent sufficiently that can disposed subsurface in most soils, or where allowed, disinfected and disposed into surface waters in this case the Imus River. The RSF technology comprises three major components: the septic tank(s), the recirculation/dilution (R/D) tank and an open, granular-media filter bed. Grab sampling will be utilized in the collection of wastewater samples it will be performed in the end pipes of the septic tank which connects to the outfall in the river. The classification of the discharge to surface water will comply with provision of DAO 34. The physical and chemical composition will be determined using standard test method steps indicated in DAO No. 35 “Revised Effluent Regulations of 1990”. The parameters will serve as the indicator for the water quality standards. The total amount of wastewater being generated by the mentioned three buildings will be estimated theoretically using the Drainage Fixture Unit method (DFU), a 37.5% of probability of fixtures will be adopted and the total volume of wastewater will be 80-85% of the total water supply of the three buildings.

TABLE OF CONTENTS